



**Graduate Catalog, 2008-2009**

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# Welcome

World-class research, pioneering partnerships, renowned faculty, and graduate students who enjoy a rich blend of academics, research, culture and fun — this is graduate study at the University of Central Florida in one of the most dynamic metropolitan areas in the United States—Orlando, Florida.

## WHAT'S NEW

University of Central Florida is the university that seeks opportunities, creates opportunities, and brings them to fruition. The University's culture of opportunity is driven by the diverse people it attracts, its Orlando environment, its history of entrepreneurship, and its youth, relevance, and energy.

Here you will find the latest updates about new graduate programs, certificates, fellowships, and more. Check here and often to find out what's new in UCF Graduate Studies.

## Graduate Degree Programs

This year, UCF approved four new master's programs:

- Master of Arts in Applied Learning and Instruction
- Master of Science in Biotechnology
- Master of Science in Digital Forensics, with Professional and Science/Computing tracks
- Master of Science in Technology

Five new graduate certificate programs were approved:

- Emergency Management and Homeland Security Certificate
- Clinical Nurse Leader Certificate
- Severe and Profound Disabilities Certificate
- Software Engineering for Web-based Applications Certificate
- Systems Engineering Certificate

Eight new graduate degree tracks were also created in the following programs:

- Higher Education Track and Social Science Education Track in Education PhD
- Criminal Justice Track in Public Affairs PhD
- Professional Track in Accounting MSA
- Visual Language and Interactive Media Track in Film and Digital Media MA
- Professional Track and Research Track in Criminal Justice MS

- Systems Engineering Track in Industrial Engineering MSIE

Program name changes occurred for the following programs:

- Physical Education MA became Sport and Fitness MA with Health/Wellness and Applied Physiology Track and Sport Leadership and Coaching Track
- Curriculum and Instruction MEd became Teacher Leadership MEd
- Technical Writing Track in English MA became Technical Communication Track
- Student Personnel Administration in Higher Education Track in the Educational Leadership MA became Higher Education/Student Personnel Track
- School Counseling Track moved from the School Psychology EdS to Education EdS

## University Fellowships

The university is proud to offer a number of merit-based fellowships to new degree-seeking graduate students. Each year, incoming graduate students who apply by the Fall Priority admissions deadline are eligible for university fellowship consideration. Among the most prestigious awards are the Trustees and Presidential Doctoral Fellowships. Both fellowships are competitive awards offered to the most outstanding doctoral students who have demonstrated excellent professional development and scholarly achievement.

The UCF Graduate McNair Fellowship is a competitive fellowship that is offered to the most outstanding undergraduate McNair scholars who are accepted into UCF graduate programs. This fellowship award is worth over \$20,000 for a master's student and more than \$35,000 for a doctoral student. Award recipients are selected by the UCF Graduate Fellowship Committee.

As of Fall 2008, doctoral students receiving the UCF FAMU Feeder Fellowship or the UCF Graduate RAMP Fellowship will receive a \$10,000 award (plus tuition support) for up to four years from the university, while master's students will receive a \$10,000 fellowship (plus tuition support) per year for up to two years.

We are also pleased to announce the availability of two AT&T Graduate Fellowships in Modeling and Simulation. These awards provide \$25,000 (plus tuition support) to students engaged in their

dissertation research on live simulation. Applicants for this fellowship will be currently enrolled at UCF in an accredited doctoral program, involved in (or about to be involved in) the research phase of their dissertation, and agree to full-time enrollment for the term of this fellowship. For more information, please see the AT&T Graduate Fellowship in Modeling and Simulation flyer.

In a continuing effort to support the research efforts of our graduate students, the university provides over \$100,000 per academic year in travel funding to master's, specialist, and doctoral students who deliver a research paper or comparable creative activity at a professional meeting. For information about the criteria applicants for this award must meet, please see the Graduate Travel Award Application.

For information on all UCF fellowships available to qualified graduate students, visit UCF Fellowships.

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## UCF Opportunities

- ◇ UCF Story
- ◇ Grad Facts

Browse through this section to find out why graduate education at UCF stands for opportunity. Learn about UCF's presence as a major metropolitan research university and review the facts on why we're one of the fastest growing universities in the nation.

### UCF STORY

- ◇ Graduate Education that Creates Opportunities
- ◇ Centers of Excellence
- ◇ Pride in Accomplishments
- ◇ Degrees of Distinction
- ◇ International Impact
- ◇ Strength in Diversity and Inclusiveness
- ◇ Partnerships and Community Service
- ◇ Orlando and Beyond
- ◇ Pardon our Dust
- ◇ Virtual Campus
- ◇ History in the Making, UCF Athletics
- ◇ Central Florida - A Great Place to be
- ◇ UCF - A Time of Opportunity

## Graduate Education that Creates Opportunities

The University of Central Florida is one of the largest and fastest growing research universities in the country—and it is located in one of the most dynamic metropolitan areas in the United States—Orlando, Florida. UCF is the university that seeks opportunities, creates opportunities, and brings them to fruition. UCF ranks second among Florida's state universities in total enrollment and ranks eighth in graduate enrollment in the nation.

As central Florida's higher-education partner, UCF plays a major role in the region's fast-paced growth through its community and corporate partnerships; its research programs; and the talents of its 170,000 alumni, 48,000 students, and 9,700 faculty and staff. As a metropolitan research university, UCF is committed to innovative community partnerships, world-class research with local impact, and the integration of technology and learning.

## Centers of Excellence

UCF's colleges include Arts and Humanities, Sciences, Biomedical Sciences, Business Administration, Education, Engineering and Computer Science, Health and Public Affairs, Hospitality Management, and Optics and Photonics.

The university's internationally renowned colleges, centers and institutes include the College of Optics and Photonics/CREOL (Center for Research and Education in Optics and Lasers), the Rosen College of Hospitality Management, the Advanced Materials Processing and Analysis Center (AMPAC), the Biomolecular Science Center, the Institute for Simulation and Training (IST), the Florida Solar Energy Center (FSEC), the Nanoscience Technology Center, the National Center for Forensic Science, the Florida Space Institute, and the Florida Photonics Center of Excellence. For additional information regarding these centers and institutes and other research programs, go to [www.research.ucf.edu/centers](http://www.research.ucf.edu/centers).

## Pride in Accomplishments

The reputation of any educational institution is best reflected in the accomplishments of its students, faculty, and alumni—and for a university just over 40 years old, UCF has moved rapidly from promise to academic prominence.

- *U.S. News & World Report* (2008) ranks UCF's Computer Engineering and Electrical Engineering in the top 100 for graduate programs.
- UCF's College of Engineering and Computer Science is a leading college for women; 22 percent of its graduates are women.
- The UCF Technology Incubator was named the 2004 Technology Incubator of the Year by the National Business Incubation Association. The incubator has helped more than 70 start-up companies.
- UCF is ranked 38th in the nation for the strength of its research and patents by *Technology Review*, the Massachusetts Institute of Technology's magazine of innovation. Only the University of Florida, at 20th, ranks higher among Florida state universities.
- UCF's Department of Communication Sciences and Disorders educates more students in speech-language pathology than any other institution in the US, with a current enrollment of 201 part- and full-time students.
- College of Optics and Photonics/CREOL professor Nabeel Riza was the sole winner of the International Commission for Optics Prize—one of the top international awards for scientists under the age of 40.
- The late Jonathan Mednick, a film direction and production assistant professor, posthumously won an Emmy for Outstanding Non-Fiction (Reality) Program for "American High," a PBS television series.
- UCF is the only university in the country offering through the Industrial Engineering Department a master's degree in racecar engine technology (precision engineering) with a focus in high-performance engine optimization. The program received national recognition in *The Wall Street Journal*, *USA Today*, and *Business Week On Line*.
- The Society for Industrial and Organizational Psychology ranked UCF's Ph.D. program first in the nation in research productivity.
- Since 1985, archaeology professors Arlen and Diane Chase have been uncovering Maya secrets at Caracol, an ancient city located deep in the jungle of Belize. Their work has been featured in *The New York Times*, *USA Today*, and on PBS and provides unsurpassed insight for students enrolled in the Master's in Liberal Studies and the Maya Studies graduate certificate programs.
- Theatre majors Reginald Jernigan, Mareeko Finney, and Mick Chapell won first place, out of 23,000 entries, in the national Arts and Entertainment (A&E) Great American Student Screen Test competition.
- The College of Education and the Rosen College of Hospitality Management boast a 100 percent employment rate for its graduating students.
- More than 8,000 undergraduate and graduate students are enrolled in the College of Business Administration, making it one of the largest in the nation.
- Molecular Biology and Microbiology professor Mark Muller has discovered that a protein, called MKRNI, is critical to stopping the uncontrolled division of tumor cells that cause cancer.
- UCF Alum, Alan Eustace, is Google's Vice President of Engineering, responsible for all aspects of the company's product research and development activities. Alan is an author of 9 publications, holds 10 patents, and graduated from UCF with a Ph.D. in Computer Science.
- In 2005, two University of Central Florida scientists developed a new way to find and remove mercury from polluted water. Chemistry professors Florencio E. Hernández, Ph.D. and Andres Campiglia, Ph.D. can now quickly and inexpensively detect even trace amounts of the pollutant which can be used to create water filters and reclaim contaminated water.
- At the world programming competition, UCF placed 11th in the world. We are 2nd in the country behind California Polytechnic State University and tied with MIT.
- Harris Corporation, an international communications technology company headquartered in Orlando, has announced a \$3 million donation to the College of Engineering and Computer Science at UCF. The gift, along with an additional \$3 million in state matching funds, will equip research laboratories in the new four-story Engineering III building. UCF will name the building the Harris Corporation Engineering Center, pending approval of the university's Board of Trustees.
- UCF's Nicholson School of Communication has been designated one of five regional Centers for Editing Excellence by the Dow Jones Newspaper Fund for 2005.
- UCF alumnus Bill Parsons has been named director of NASA's Kennedy Space Center.

Parsons is a 1993 graduate of UCF's engineering management program and has served as manager of the space shuttle program since 2003.

- In the past 15 years, UCF enrollment has doubled; research funding has tripled; and the number of doctoral degrees awarded has quadrupled.

## Degrees of Distinction

With 1,272 full-time faculty, the university offers 95 bachelor's degrees, 86 master's degrees, three specialist degrees, and 29 doctoral degrees as well as 77 graduate certificate programs.

The list of prominent alumni gets longer with each graduation ceremony. A sampler of notable alumni includes John Bersia, Pulitzer-Prize winner, *Orlando Sentinel*; Juanita Black, president, Mental Health Association of Central Florida; Frank Caldeiro, astronaut, NASA; D. Lee Constantine, Florida State Senator; Richard Crotty, mayor, Orange County (FL.); Ericka Dunlap, Miss America 2004; R. Glenn Hubbard, former chair, U.S. Council of Economic Advisors and Al Weiss, President Worldwide Operations, Walt Disney Parks and Resorts.

## International Impact

UCF's growing cadre of international students adds both diversity and global connections to its central Florida community. More than 130 countries—most notably India, China, Canada, Vietnam, Jamaica, United Kingdom, and Colombia—are represented in the student body, and faculty research is taking place in areas ranging from South America to the Arctic polar ice cap.

UCF has study and research agreements with 98 institutions in 36 countries—providing learning and research opportunities for students and faculty in countries ranging from the Udmurt Republic to South Africa. The university's Eastern Europe Linkage Institute alone maintains educational and research partnerships with 20 institutions in nine countries, including Russia, Ukraine, Slovakia, the Czech Republic, Bulgaria, Lithuania, Romania, Poland, and the United States. The student experience abroad does not stop in the classroom with opportunities available for students to travel internationally.

## Strength in Diversity and Inclusiveness

Increasing diversity and inclusiveness is one of the central goals of UCF. The university is particularly proud of an aggressive minority recruitment plan, and minorities now account for nearly 20 percent of the faculty.

The student community includes Hispanics (13%), Blacks (9%), and Asian/Pacific Islanders (5%) and represents 64 of Florida's 67 counties, all 50 states, and 136 countries.

## Partnerships and Community Service

One of UCF's main objectives is to be America's partnership university. Hundreds of joint projects are in place with community organizations and government agencies at all levels and corporations—ranging from collaborative research in nanoscience to neighborhood nursing clinics.

Two major partnerships target the region's most prominent business sectors. The new Rosen College of Hospitality Management will increase the university's already significant commitment to the area's tourism and hospitality sector. High-tech interests are being well-served by the Florida High Tech Corridor partnership—an initiative of UCF and the University of South Florida that now embraces nearly 9,500 companies and more than 160,000 employees.

## Orlando and Beyond

In addition to its 1,415-acre main campus in Orlando, UCF has area campuses in Daytona Beach, Cocoa, and Clermont; centers in Deland, Palm Bay, Melbourne, Kennedy Space Center, Downtown Orlando, South Orlando, Kirkman Road, and Lake Mary; and instructional sites in Deltona, Flagler, New Smyrna, Osceola, Celebration, Leesburg, Chiefland, Lecanto, and Sumterville giving students throughout central Florida the chance to take classes, pursue degrees, and interact with faculty and staff.

## Pardon our Dust

UCF has 74 construction projects either planned or underway for the main campus, totaling more than \$1 billion. Included in these projects are the Arts Complex III—Theatre, Business Administration III, Classroom Building II as well as several building

renovations and the addition of several new classroom buildings and technology labs.

## Virtual Campus

UCF's Virtual Campus is leading the way in the integration of technology, teaching, and learning. Ten graduate degrees and twelve certificate programs are available online as well as many individual graduate level courses. Critical student services, such as parking, course registration, and textbook purchases are also available online.

For more information on UCF's online programs, visit [www.online.ucf.edu](http://www.online.ucf.edu).

## UCF Athletics—A historic season

UCF football kicked off its 2007 home opener in the brand-new 45,000 seat Bright House Networks Stadium. This state-of-the-art facility saw UCF lose only one game on its way to capturing the Conference USA Championship. In addition, standout running back Kevin Smith became UCF's and the state of Florida's all-time leading rusher with 2,448 yards. Smith trails only Barry Sanders as the all-time single-season leading rusher in college football history. Without a doubt, UCF's inaugural season in its new stadium has been nothing short of remarkable.

The new Bright House Networks stadium is only part of UCF's exciting new intercollegiate athletics complex in the north end of campus. Other recent additions include the Convocation Center, completed in fall 2007, the Nicholson Fieldhouse, the Wayne Densch Sports Center, student housing, and retail space consisting of various restaurants and shops. It is indeed an exciting time for UCF Athletics!

## Central Florida—A great place to be

UCF is located 13 miles east of downtown Orlando, 45 miles from the Atlantic Ocean and Cape Kennedy, and 100 miles from Tampa and the Gulf of Mexico. The area boasts world-class shopping and dining, lakes, golf courses, jogging trails, nature preserves, and parks.

## UCF—A Time of Opportunity

The time is now for UCF—one of the fastest growing, metropolitan research universities in the country and a catalyst for economic development

in central Florida. Significant in size, excellent in academics, and prominent in accomplishments, the University of Central Florida is one of Florida's leading educational assets.

The University's culture of opportunity is driven by the diverse people it attracts, its Orlando environment, its history of entrepreneurship, and its youth, relevance, and energy.

## GRAD FACTS

- ◇ About the University
- ◇ About UCF Graduate Students
- ◇ Financial Support for Graduate Students
- ◇ Research Activities
- ◇ UCF Centers and Institutes Research
- ◇ College Research

## About the University

- **Status:** One of 11 of Florida's public universities
- **Location:** In metropolitan Orlando area, 13 miles east of downtown Orlando
- **Carnegie Classification:** Doctoral/Research Universities - Intensive
- **Number of Graduate Programs:** 29 Doctoral, 85 Master's, and 76 Graduate Certificates
- **Overall Student Enrollment in Fall 2007:** 48,497
- **Graduate Enrollment in Fall 2007:** 7,177, including 1,618 doctoral, 4,389 master's, and 716 nondegree-seeking students
- **Class Offerings:** Many classes, particularly in Business, Education, and Engineering, are offered at night and at UCF's regional campuses.

## About UCF Graduate Students

- **Graduate Student Characteristics, Fall 2007**
  - Doctoral - 77 percent full-time students, 23 percent part-time students
  - Master's - 45 percent full-time students, 55 percent part-time students
  - Gender - 59 percent female, 41 percent male
- **Average Age of Graduate Students:** Approximately 32 years old
- **Ethnicity of Graduate Student Population, Fall 2007**
  - White, Non-Hispanic - 69 percent
  - Black, Non-Hispanic - 9 percent
  - American Indian or Alaskan Native - Less than 1 percent
  - Asian or Pacific Islander - 5 percent

- Hispanic - 13 percent
- Nonresident Alien - 3 percent

## Financial Support for Graduate Students

- Assistantships - 1700 students received assistantship support to attend graduate school
- Fellowships - About 500 students received fellowship support
- Tuition Support - Full-time doctoral students appointed on graduate assistantships receive a higher level of tuition assistance (100 percent of the matriculation fee or about 90 percent of the total tuition and fees bill) than master's students. On average, full-time master's students appointed on graduate assistantships received tuition support for 75 percent of the matriculation fee.

## Research Activities 2006-07

In 2006, UCF was one of only two universities in the country to receive three prestigious awards from the Department of Defense's Multidisciplinary University Research Initiative. Former Florida Governor Jeb Bush called the awards a tremendous honor for the Florida research community and particularly for scientists and researchers at UCF.

- Total Research Awards - \$121.4 million
- Total Federal Awards - \$57.1 million
- Total State Awards - \$32.3 million
- Total Industry Awards - \$32.0 million
- Patents - UCF holds over 100 patents

## UCF Centers and Institutes Research

- Institute for Simulation and Training (IST) - \$14.2 million
- Florida Solar Energy Center (FSEC) - \$6.6 million
- Advanced Materials Processing and Analysis Center (AMPAC) - \$2.4 million
- Nanoscience Technology Center - \$2.3 million
- Student Development and Enrollment Services - \$3.6 million

## College Research

- Arts and Humanities - \$719,088
- Sciences - \$9.3 million
- Business Administration - \$1.6 million
- Education - \$21.1 million
- Engineering and Computer Science - \$20.9 million
- Health and Public Affairs - \$4.4 million

- Optics and Photonics (CREOL and FPCE) - \$16.2 million
- Biomedical Sciences - \$7.7 million
- College of Nursing - \$1.3 million
- Rosen College of Hospitality Management - \$70,777
- Continuing Education - \$3.4 million

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## About UCF

- ◇ Overview
- ◇ About UCF
- ◇ University Accreditation
- ◇ UCF Campuses
- ◇ Student Services and Resources
- ◇ Colleges
- ◇ Special Academic Programs
- ◇ About the Graduate Catalog

## OVERVIEW

The University of Central Florida has come a long way since its inception in 1963. It is now a thriving, multi-campus university, with nearly 47,000 students and more than 200 graduate degree programs. In addition to its physical growth, UCF has become a prominent player in graduate education nationwide, offering innovative corporate partnerships, world-renowned faculty, and cutting-edge research. "About UCF" describes the University and its mission, introduces UCF's campuses, provides an overview of services and resources available to UCF students, and includes important University notices for all students. In addition, this section describes the people and offices that make up UCF—including university, college, and school administration.

## ABOUT UCF

- ◇ Mission Statement
- ◇ State of Florida Board of Governors
- ◇ University of Central Florida Board of Trustees
- ◇ University of Central Florida Administration
- ◇ Interdisciplinary Studies

## Mission Statement

The University of Central Florida is a public, multi-campus, metropolitan research university, dedicated



to serving its surrounding communities with their diverse and expanding populations, technological corridors, and international partners. The mission of the university is to offer high-quality undergraduate and graduate education, student development, and continuing education; to conduct research and creative activities; and to provide services that enhance the intellectual, cultural, environmental, and economic development of the metropolitan region, address national and international issues in key areas, establish UCF as a major presence, and contribute to the global community.

**UCF offers undergraduate education rooted in the arts and sciences, providing a broad liberal education while developing competence in fields of special interest.**

Unique aspects of UCF's approach are its commitment to educate students for a world in which cooperation is as important as competition; in which societal and environmental impacts of new developments are as important as their technical merits; and in which technology, the arts, sciences, humanities, and commerce work together to shape the future.

**The complexity of modern society requires comprehensive graduate and professional programs.**

UCF provides advanced education that matches institutional strengths with evolving regional, state, national, and international needs. It supports these advanced programs by recruiting excellent students, faculty, and staff and by supplying the infrastructure that enables these programs to achieve national prominence.

**Basic and applied research, as well as creative activity, are integral parts of a quality education.**

UCF faculty members are scholar-teachers. As such, they create new knowledge, new points of view, and new means of expression in a broad range of academic, professional, and socially significant areas. Their creativity fosters innovation as they convey their results, methods, values, and expressions to students, colleagues, and the public.

**UCF works actively to build partnerships that promote development of central Florida's economy through carefully targeted programs of graduate study and research.**

The I-4 High-Technology Corridor Council, whose goal is to attract, retain, and expand high technology investment and jobs, is but the latest example of UCF's collaboration with partners from industry, state and local government, and higher education.

**Service to its community is an important extension of the metropolitan mission of the university.** Public service is prominent at UCF, and the university develops partnerships with the community to enrich the educational, artistic, cultural, economic, and professional lives of those it serves in central Florida and beyond.

**Education is more than classroom experience.**

UCF students are involved in cooperative research and participate in artistic, social, cultural, political, and athletic activities. UCF provides academic diversity by bringing to its campus national and international leaders who expose students and the community to a wide range of views and issues. UCF achieves cultural diversity by using its multi-campus facilities to serve a diverse population of traditional and nontraditional students from various races, cultures, and nationalities.

**UCF is committed to the free expression of ideas, the equality of all people, and the dignity of the individual.**

### State of Florida Board of Governors

Carolyn K. Roberts, Chair

John Dasburg, Vice Chair

Jeanine Blomberg

Arlen Chase

Ann W. Duncan

Charles "Charlie" Edwards

J. Stanley Marshall

Frank Martin

Sheila M. McDevitt

Ryan Mosley

Lynn Pappas

Ava L. Parker

Tico Perez

Commissioner Eric Smith

Gus Stavros

John W. Temple

Zachariah P. Zachariah

### University of Central Florida Board of Trustees

Rick Walsh, Chair

Thomas H. Yochum, Vice Chair

Judith A. Albertson

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Alan Florez

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Harris Rosen

Conrad Santiago

Richard J. Walsh  
 Al Weiss  
 Brandie Hollinger, Student Trustee

## University of Central Florida Administration

President of the University	John C. Hitt
Vice President and Chief of Staff	Beth Barnes
Provost and Executive Vice President	Terry L. Hickey
Vice President for Administration and Finance	William F. Merck II
Vice President for Research	M. J. Soileau
Vice President for Marketing, Communications and Admissions	Thomas Huddleston, Jr.
Vice President for Community Relations	Helen Donegan
Vice President for Development and Alumni Affairs	Robert Holmes, Jr.
Vice President for University Relations	Daniel Holsenbeck
Vice President for Student Development and Enrollment Services	Maribeth Ehasz
Vice President and General Counsel	Scott Cole
Vice President for Strategic Planning and Initiatives	Al Harms

## Office of the Provost and Executive Vice President

Provost and Executive Vice President	Terry L. Hickey
Dean, The Burnett Honors College	Alvin Wang
Associate Vice President, Academic Affairs	Doan T. Modianos
Associate Vice President, Planning and Evaluation	Diane Chase
Assistant Vice President, Faculty Relations	Lin Huff-Corzine
Assistant Vice President, Academic Services Administration	Lynn Gonzalez

## Office of the Vice Provost for Academic Administration

Vice Provost, Academic Administration	J. Edward Neighbor
Space Utilization and Analysis Coordinator	Joe Castrillo
Coordinator of Special Programs	Michael Sweeney

## Office of the Vice Provost for Academic Affairs

Vice Provost	John F. Schell
Associate Dean, Academic Services	Elliot Vittes
Assistant Vice President and Director, Continuing Education	Patrick Wagner
Interim Director, Interdisciplinary Studies	Michael Hampton

## Office of the Vice Provost for Information Technologies and Resources

Vice Provost, Information Technologies and Resources	Joel L. Hartman
Director, Center for Distributed Learning	Randall Upchurch
Director, Computer Services and Telecommunications	Robert Yanckello
Director, Course Development and Web Services	Barbara Truman
Director, Instructional Resources	Ruth Marshall
Director, University Libraries	Barry B. Baker
Director, Research Initiative for Teaching Effectiveness	Charles Dziuban

## Office of the Vice Provost for Regional Campuses

Vice Provost, Regional Campuses	David T. Harrison
Associate Vice President and Director, Southern Region	Denise L. Young
Associate Vice President and Director, Seminole	David J. Mealor
Assistant Vice President and Director, Western Region	Cecelia H. Rivers

Assistant Vice President and Director, Eastern Region	Linda Bradley
Director, Central Region	Edgar Martinez
Assistant Vice President and Executive Director of Academic Initiatives	Bernard Jensen

### Office of Research & Commercialization

Vice President for Research & Commercialization	M. J. Soileau
Associate Vice President for Research and Director, Office of Research & Commercialization	Tom O'Neal
Assistant Vice President	Pallavoor Vaidyanathan
Associate Director for Research Foundation	Betsy Gray
Associate Director, Administrative Services	Beverly Laakso
Assistant Director, Communications	Barbara Abney
Director, Office of Compliance	Douglas Backman
Director, CREOL (Center for Research and Education in Optics and Lasers), within the College of Optics and Photonics	Eric Van Stryland
Director, FPCE (Florida Photonics Center of Excellence), within the College of Optics and Photonics	Eric Van Stryland
Director, Florida Solar Energy Center	James Fenton
Director, Institute for Simulation and Training	Randall Shumaker
Interim Director, AMPAC (Advanced Materials Processing and Analysis Center)	Louis Chow
Director, Arboretum and Director, Campus Landscape and Natural Resources	Martin Quigley
Director, Biomolecular Science Center, Burnett School of Biomedical Sciences, College of Medicine	Pappachan Kolattukudy
Director, Center for Lifestyle Medicine	James Rippe

Director, Nanoscience and Technology Center and Interim Assistant Vice President	James Hickman
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### College of Graduate Studies

Vice Provost and Dean	Patricia J. Bishop
Senior Associate Dean	Max C. Poole
Associate Dean	Michael Stern
Executive Director, Graduate Studies and International Services Center	Tracy R. Jones
Director, International Services Center	Nataly Chandia
Director, Office of Graduate Financial Assistance and Publications	Debra Winter
Associate Director, Student Services and Records	Dore M. Carter
Associate Director, Graduate Admissions	Barbara Rodriguez
Assistant Director, Graduate Recruiting	Nicole Marsh

### Office of Undergraduate Studies

Dean	Alison Morrison-Shetlar
Director, Center for Cooperative Education and Experiential Learning	Sheri Dressler
Director, Karen L. Smith Faculty Center for Teaching and Learning	Alison Morrison-Shetlar
Director, Undergraduate Research	Kimberly Schneider
Director, Bachelor of Applied Sciences	TBA

### Office of University Relations

Vice President for University Relations and Senior Counsel to the President	Daniel C. Holsenbeck
Associate Vice President for University Relations and Director of State and Local Government Affairs	Fred Kittinger
Director, University Economic Development	Edward Schons
Director, Federal Relations	Greg Schuckman
Director, Defense Transition Services	Alzo J. Reddick

## Office of the Vice President for Marketing, Communications, and Admissions

Vice President for Marketing, Communications and Admissions	Thomas Huddleston, Jr.
Associate Vice President, University Marketing	Terrence K. Helms
Associate Vice President, Undergraduate Admissions, Student Financial Assistance and Student Outreach	Gordon D. Chavis, Jr.
Assistant Vice President, News and Information	Grant J. Heston
Executive Director, Student Financial Assistance	Mary H. McKinney
Assistant Vice President of Operations	Richard S. Payne
Director, Student Outreach Programs	Rhonda C. Hall
Assistant Vice President Admissions for Regional Campuses	Angela Patterson

## Interdisciplinary Studies

The University of Central Florida strives to promote interdisciplinary cooperation across all aspects of the institution in order to create new and innovative partnerships that effectively respond to societal needs and appropriately prepare graduate students for a dynamic work environment. Interdisciplinary graduate studies are offered in areas such as biomolecular sciences, computer forensics, gender studies, gerontology, Maya studies, modeling and simulation, optics, and teaching English as a second language.

## UNIVERSITY ACCREDITATION

- ◇ Graduate Admission Requirement
- ◇ Recognized Institution
- ◇ Other Accreditations

The University of Central Florida is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097; Telephone number 404-679-4501) to award degrees at the associate, baccalaureate, master's, and doctoral levels. For the purposes of this catalog, "accredited institutions" means those institutions accredited by one of the six U.S. regional associations. The six regional associations are:

- New England Association of Schools and Colleges (NEASC-CIHE) Commission on Institutions of Higher Education
- Middle States Association of Colleges and Secondary Schools (MSA) Middle States, Commission on Higher Education
- North Central Association of Colleges and Schools (NCA-HLC) The Higher Learning Commission
- Northwest Commission on Colleges and Universities (NWCCU)
- Southern Association of Colleges and Schools (SACS) Commission on Colleges
- Western Association of Schools and Colleges (WASC-ACSCU), Accrediting Commission for Senior Colleges and Universities

## Graduate Admission Requirement

In order to enroll in graduate classes, students must have obtained a baccalaureate or higher degree, prior to the start of the term for which the student is admitted, from an institution accredited by one of the above accrediting agencies or from a recognized foreign institution. Students without a baccalaureate or higher degree from an accredited institution (or equivalent) are not admitted to graduate degree programs, graduate certificate programs, or graduate nondegree status. The College of Business Administration requires that all degrees must have been earned from a regionally accredited institution or a recognized foreign institution.

## Recognized Institution

A "recognized institution" is an institution in a country outside of the United States that is recognized by that nation's Ministry of Education or similar authority, as a post-secondary, academic-degree-granting institution.

## Other Accreditations

In addition to the regional accreditation agencies, there are a number of scientific, professional, and academic bodies conferring accreditation in specific disciplines. UCF is listed with an "A" rating in the Report of Credit Given by Educational Institutions. The university is accredited by the following agencies on the graduate level:

- Southern Association of Colleges and Schools (SACS)
- International Association for Management Education (AACSB)

- National Council for Accreditation of Teacher Education (NCATE)
- National Association of School Psychologists
- Council for Accreditation of Counseling and Related Educational Programs
- Florida Department of Education
- Council on Academic Accreditation in Audiology and Speech Language Pathology (CAA)
- Commission on Collegiate Nursing Education (CCNE)
- Council on Social Work Education (CSWE)
- Commission on Accreditation in Physical Therapy Education, American Physical Therapy Association
- National Association of Schools of Music (NASM)
- Accreditation Committee of the Human Factors and Ergonomics Society
- American Psychological Association
- National Association of Schools of Public Affairs and Administration
- Commission on Accreditation of Healthcare Management Education (CAHME)

## UCF CAMPUSES

- ◇ University of Central Florida
- ◇ Online@UCF
- ◇ UCF Regional Campuses

## University of Central Florida

The University of Central Florida is one of the largest and fastest growing research universities in the country, and it is located in Orlando, one of the most dynamic metropolitan areas in the United States. With a total enrollment of nearly 47,000 students, UCF is now one of the largest universities in the nation.

The UCF community includes a large international student body, 145,000 alumni, and 8,900 faculty and staff. The university offers 95 bachelor's degrees, 96 master's degrees, three specialist degrees and 25 Ph.D. degrees as well as 75 graduate certificate programs. In addition to offering classes on the 1,415-acre main campus in Orlando, UCF's regional campuses serve students throughout an 11-county area in central Florida. More than 13,000 students are enrolled in online courses.

UCF is the university that seeks opportunities, creates opportunities, and brings them to fruition. The university's culture of opportunity is driven

by the people it attracts and serves, its Orlando environment, its history of entrepreneurship, and its youth, relevance, and energy. Students and faculty enjoy state-of-the-art wireless classrooms and modern facilities, including a Barnes and Noble Bookstore with a cyber café, and a 185,000-square-foot Student Union with 11 restaurants and seven retail stores. Major construction projects recently completed include College of Engineering and Computer Science, the third major building to complement its current 107,000-square-foot, high-tech wireless facility, and the new Rosen School of Hospitality Management is housed in a 159,000-square-foot campus on a 20-acre site in the heart of Central Florida's tourist corridor.

Again, this year, UCF surpassed the \$100 million level in research funding from federal, state and private sources. By moving the university from promise to prominence in optics, lasers, photonics, nanoscience, engineering, education, simulation and biomolecular science, UCF researchers are demonstrating that imagination has no limits and anything is possible.

UCF's main campus is located 13 miles east of the city of Orlando, 45 miles from the Atlantic Ocean and Cape Canaveral, and 100 miles from Tampa and the Gulf of Mexico. The area boasts world-class shopping and dining, lakes, golf courses, jogging trails, nature preserves and theme parks.

## Directions to UCF and Campus Map

Directions to UCF (<http://campusmap.ucf.edu/address.php>)

Campus Map (<http://campusmap.ucf.edu/>)

## Online@UCF

Center for Distributed Learning

*Director:* Randall S. Upchurch

[rupchur@mail.ucf.edu](mailto:rupchur@mail.ucf.edu) or call 407-823-4910

Visit our website at <http://online.ucf.edu/>

The UCF Virtual Campus provides opportunities for students to enroll in credit courses and select degree and certificate programs delivered over the Internet. The instructional design of these courses maintains a high-quality learning environment for nontraditional and campus-based students. The course materials and methods were developed by UCF faculty to maximize the learner's achievement of course and program objectives.

Web-based graduate programs are offered in:

- Criminal Justice (M.S.)
- Exceptional Education (M.Ed. and M.A.)
- Forensic Science (M.S.)
- Instructional Technology, Educational Media Track (M.Ed.)
- Instructional Technology, Educational Technology Track (M.A.)
- Instructional Technology, E-Learning Track (M.A.)
- Instructional Technology, Instructional Systems Track (M.A.)
- Nonprofit Management (M.N.M.)
- Nursing (M.S.N.)
- Vocational Education (M.A.)
- Online graduate certificates are offered in:
  - Community College Education
  - E-Learning Professional Development
  - Gifted Education
  - Initial Teacher Professional Preparation
  - Instructional Design for Simulations
  - Instructional/Educational Technology
  - Nonprofit Management
  - Nursing Education
  - Online Educational Media
  - Pre-kindergarten Handicapped Endorsement
  - Professional Writing
  - Special Education

Online courses are identified in the Class Schedule Search available at <https://my.ucf.edu/>. Select the Advanced Search Dialogue and use the drop-down list next to Mode of Instruction to search for the descriptive value of "World Wide Web (W)." Complete listings of all fully and partially webbased classes from the class schedule are also excerpted and available on the Virtual Campus website at <http://online.ucf.edu>. Students who plan to enroll in any course with a web component must have access to the Internet, a Web browser such as Internet Explorer, basic web-browsing knowledge, ability to use e-mail, and basic computer skills such as word processing. For additional information, refer to the Learning Online website ( <http://learn.ucf.edu>).

UCF's Virtual Campus is supported and facilitated by the Center for Distributed Learning. The Center's mission is to provide support to students, faculty and staff in the development and planning of distributed learning courses and programs. The Center serves as a clearinghouse for processes and resources, providing planning and marketing support for online credit programs. The Center also coordinates the university's standards and

accreditation changes resulting from web-based instruction.

## UCF Regional Campuses

*Vice Provost, UCF Regional Campuses:* David T. Harrison, Ph.D.

The University of Central Florida also offers a number of programs through UCF Regional Campuses in your neighborhood. Strategically located within an 80-mile radius of the UCF Orlando campus, the multiple nonresidential locations operate in partnership with six Florida community colleges, fostering seamless and convenient advancement from completion of an associate's degree (A.A. or A.S.) to upper division studies that culminate in the awarding of a baccalaureate degree and a variety of complete graduate degree programs. Academic programs include 20 distinct bachelor's degrees, 19 minors and certificates, 13 master's degrees, with each of the UCF colleges represented within the system.

UCF Regional Campuses utilize convenient schedules, and a wide variety of instructional formats, including online class availability. Times and dates for all courses are listed online prior to registration each term and all registration periods correspond to the overall UCF schedule.

Admissions, registration, financial assistance and advising professionals are located at the following full-service campuses: UCF at Cocoa, UCF at Daytona Beach, and UCF at South Lake. In addition, advising services are provided through UCF at Sanford/Lake Mary and UCF at Palm Bay.

Additional resources available at the UCF Regional Campuses include: student clubs and organizations, disability services, veteran's affairs, libraries, computer labs, "smart classrooms," and more.

Even the smaller instructional locations provide students with an opportunity to enroll in selected courses contributing to undergraduate and graduate degrees in a variety of disciplines. In response to community needs, the UCF Regional Campuses also offer programs and courses in other, off-campus locations on an "as needed" basis. UCF Orlando students may register full time or part time for courses available at any of the locations without additional paperwork.

For the most current information on any of the multiple UCF Regional Campus locations,

programs or class schedules, check the website at [www.regionalcampuses.ucf.edu](http://www.regionalcampuses.ucf.edu).

For program listings: [www.regionalcampuses.ucf.edu/programs/index.asp](http://www.regionalcampuses.ucf.edu/programs/index.asp)

- UCF Daytona Beach (Full-service campus) (386) 506-4021
- UCF Heathrow (407) 531-5466
- UCF Sanford/Lake Mary (407) 708-2805
- UCF Cocoa (Full-service campus) (321) 433-7821
- UCF Palm Bay (321) 433-7838
- UCF Downtown (407) 235-3901
- UCF MetroWest (407) 299-5000 x5500
- UCF Osceola (352) 436-2160
- UCF South Florida (407) 856-6585
- UCF South Lake (Full-service campus) (352) 536-2175
- UCF Ocala (352) 854-2322 x1824
- UCF Leesburg (352) 536-2113

## STUDENT SERVICES AND RESOURCES

### Academic Services

Millican Hall 210, (407) 823-2691

This office is responsible for administering state and university academic policies pertaining to academic record changes, curriculum file management, the degree audit program, and university-wide academic policies and graduation requirements. The primary goal of the office is to apply these policies fairly, promptly and evenly according to established guidelines, as well as to provide a prompt response to requests from students, faculty, and staff and to maintain accurate and effective computer records for advisement and graduation certification.

### Campus Life

*Associate Vice President:* Dr. Craig E. Ullom, SU 304, (407) 823-2626

The Campus Life unit develops partnerships to provide meaningful programs, quality services, and personal growth opportunities for students in learning environments. Campus Life promotes personal excellence, healthy lifestyles, leadership development, and community responsibility. Departments in Campus Life include: Student Leadership Programs, LEAD Scholars Program, Fraternity and Sorority Life, Office of Student Involvement, Campus Faiths and Ministries,

Student Union, Recreation and Wellness Center and Intramural Sports, LINK First Year Program, Student Legal Services, Student Government Association and Student Organizations, Student Rights and Responsibilities, Student Conduct, Dispute Resolution, Student Health Services, Housing and Residence Life, Affiliated Housing, Creative School for Children, Multicultural Academic and Support Services, Rosen College of Hospitality Management Campus Life, Off-Campus Student Services and Regional Campuses. For more information, visit the website at [www.campuslife.sdes.ucf.edu/](http://www.campuslife.sdes.ucf.edu/).

### Campus Faiths and Ministries

*Director:* Brad Crawford, RS 103, (407) 823-5336

The Campus Faiths and Ministries program is a combined effort of a wide variety of religious persuasions providing students with professional personnel who will encourage spiritual, moral, and social opportunities in a spiritual context within the university community. They offer counseling, scripture study, public lecture and discussion programs, fellowship, recreation, and worship services. For more information, visit the website at [www.ucm.sdes.ucf.edu/](http://www.ucm.sdes.ucf.edu/).

### Career Services

*Associate Director Career Services:* Dr. Bill Blank, Bldg. 7F, Room 185, (407) 823-3316

*Associate Director Employer Relations:* Amy Kleeman, Bldg 7F, Room 185, (407) 823-2746

Career Services offers a comprehensive range of services to help UCF students of any major reach their academic and career goals with a talented staff of career specialists. These comprehensive services are designed to help First Year through Graduate students with all phases of career development:

- Major and Career Choices
- Academic and Career Information
- Resumes and Cover Letters
- Interviewing Skills
- Job Search Strategies
- Employment Assistance (Career Fairs, On-Campus Recruiting, Job Postings and Resume Referrals)
- Graduate School Information

These programs and services are available through walk-in assistance, scheduled appointments, workshops, and major events. For more information

visit the Career Services website at [www.career.ucf.edu/](http://www.career.ucf.edu/).

## Computer Services and Telecommunications

*Director:* Robert Yanckello, CSB 305,  
(407) 823-2711

Computer Services and Telecommunications provides central support services for instruction and research computing, administrative data processing, telecommunications networks, e-mail, telephone, information technology training, user help, and microcomputer technology to the university.

Central instruction and research computing is provided primarily by computers located on the main campus as follows: Novell LAN file servers, Sun Enterprise servers, and other Internet and campus facilities. Public access PC labs are located in Computer Center II (CCII), Classroom Building I (CL1-101), Education (EDU), and the Business Building (BA). UNIX workstations are available in Computer Center II (CCII). Macintosh labs are available in CCII and EDU. Public access labs are available to faculty and students. Most labs are open seven days a week with extended hours. The CyberKnight Center is available in CCII to assist students with computer and Internet needs.

Web services are available at <https://my.ucf.edu> for registration, grades, and financial aid information. Campus information kiosks are available in several campus buildings for frequently asked questions and individual student record information. Additional information is available on the UCF website [www.ucf.edu](http://www.ucf.edu). Access to Internet and campus information servers is available to our students through Pegasus accounts provided to all newly enrolled students.

The university also operates a full-service computer store in the Student Union, which provides the UCF community a source for quality computer products and services at competitive prices. The store is an authorized campus re-seller for Dell, Apple, Microsoft, and many other products. Maintenance and training support are also available from the store.

## Counseling Center

*Director:* Dr. David Wallace, Bldg 27,  
(407) 823-2811

The University of Central Florida Counseling

Center is the only campus agency designated to provide comprehensive psychological services to enrolled students. The center is composed of a professional staff of licensed (or licensed eligible) psychologists and mental health counselors, and graduate interns who provide both a confidential atmosphere and a safe environment in which students may explore and resolve issues of concern. The center maintains and assures confidentiality as provided by law. The center also provides advanced training and supervision for graduate students in counseling. The center is open Monday through Friday and operates on an appointment basis. The following counseling services are offered: crisis intervention, personal counseling, career counseling, couples/conjoint counseling, and group counseling. For additional information, visit the website at [www.counseling.sdes.ucf.edu](http://www.counseling.sdes.ucf.edu)

## Course Development and Web Services

*Director:* Barbara Truman, LR 107, (407) 823-3718

Course Development and Web Services (CDWS) is the responsible for web-related services including online courses, [www.ucf.edu](http://www.ucf.edu), WebCT support, and associated professional development, multimedia production, and standards development.

CDWS produces instruction, images, video, interactive courseware, programming, databases, software applications, CD-ROMs, and other digital media applications. Students known as Techrangers<sup>SM</sup> are recruited, trained, and certified each semester from a variety of academic programs to work with faculty, departments, and students to create collaborative digital media projects.

Applications created by CDWS include:

UCF's Virtual Tour -- <http://www.ucf.edu/vtour>

IDL6543: faculty development course offered twice each year to build online courses -- <http://reach.ucf.edu/~idl6543>

WebCT Academy: courses offered year-round to faculty and teaching assistants -- <http://reach.ucf.edu/~webct411>

AskUCF: online database of questions and answers used campus-wide -- <http://ask.ucf.edu>

Special events are held regularly to promote campus-wide participation and web-related research and development. For more information about



Course Development and Web Services, visit the website at <http://cdws.ucf.edu>

### **Creative School for Children**

*Director:* Marcia Diebler, CSC, (407) 823-2726

The Creative School for Children (Educational Research Center for Child Development) provides an educational program, including kindergarten-first grade, for children two through five years old. The daily program is planned and conducted by degreed teachers offering a wide variety of experiences in art, music, language, motor skills, science, math, social studies, perceptual development, socialization, and self-discovery. Planned and spontaneous field trips and special family programs are a part of the yearly schedule. Experiences in observation and training in academic areas are also made available to university students. Opportunities for educational research are available to university faculty and graduate students. The school enrolls children of university students, faculty, and staff. Accredited by the NAEYC Academy for Early Childhood program Accreditation. For more information about the Creative School for Children, visit the website at [www.csc.sdes.ucf.edu](http://www.csc.sdes.ucf.edu).

### **Dispute Resolution Services**

*Coordinator:* Patty Farris, FC 139, (407) 823-3477

Dispute Resolution Services serves the university community by offering mediation training and services directed at resolving interpersonal disputes while promoting individual responsibility. Mediation is a private, voluntary, decision-making process in which one or more impartial persons, the mediator(s), assist people, organizations, and communities in conflict to work toward a variety of goals. This service is available to the university community and is encouraged for those who have been unsuccessful in resolving their differences. Mediation training is conducted several times each semester and is offered at two different levels: 1) a basic introduction to conflict resolution skills and mediation techniques session, and 2) as an advanced mediation techniques session. Mediation training and services are provided to students, faculty, and staff at no charge. Dispute Resolution Services also offers educational workshops and outreach programs to foster understanding and promote harmony within the university community. Learn more by visiting the website at [www.drs.sdes.ucf.edu/](http://www.drs.sdes.ucf.edu/)

### **Experiential Learning**

*Director:* Sheri Dressler, Ferrell Commons, RM 197, (407) 823-2726

Experiential Learning is an instructional department reporting to Student Development and Enrollment Services and Undergraduate Studies. Its mission is: 1) to insure that quality experiential learning opportunities are available to all UCF students before graduation, 2) to provide excellent applied learning experiences for students and to support faculty in other academic departments in their efforts to do the same, 3) to create meaningful and productive educational partnerships with employers and community partners locally, nationally, and internationally. Learn more by visiting the website at [www.explearning.ucf.edu](http://www.explearning.ucf.edu).

### **Housing and Residence Life**

*Director:* Christi Hartzler, HAB 101, (407) 823-4663

Regularly enrolled single students paying registration fees for a minimum of nine semester hours may apply for on-campus University-owned residence, consisting of residence halls and apartment-style units. Priority in the residence halls is given to incoming freshmen who occupy approximately 72 percent of the university's housing capacity, and current residents, who occupy most of the university's remaining spaces. Upper-level single students are given priority for assignment to the university's on-campus apartment-style residential facilities on a space-available basis. There is no on-campus married students or family housing.

Applications and other information concerning university housing may be obtained by consulting the Department of Housing and Residence Life, UCF, P.O. Box 163222, Orlando FL 32816-0222, (407) 823-4663 and our website at [www.housing.ucf.edu](http://www.housing.ucf.edu).

### **International Services Center**

*Director:* Nataly Chandia  
CMMS (Building #81), (407) 823-2337

The International Services Center (ISC), a unit of the College of Graduate Studies, provides assistance and information to the University of Central Florida international community. Its function is to serve as a unit of advocacy and

support, assist in adjusting to a new academic environment and culture, and provide immigration and other advising to prospective, new and currently enrolled international students and scholars at the University of Central Florida. A wide range of special services are offered to help international students and scholars maintain their non-immigrant visa status. This includes issuing necessary USCIS documents to facilitate visa issuance abroad, transfer procedure and employment authorization. Counseling and assistance on personal, financial, academic, and cultural concerns are also provided to the international students and scholars within the university community. The ISC is committed to providing accurate, updated and timely information on issues and needs pertinent to international students and scholars. Another important role of the center is to enhance international awareness and cross cultural understanding through educational, cultural and social programs and activities. Learn more by visiting the website at [www.intl.ucf.edu](http://www.intl.ucf.edu).

### **Intramural Sports**

*Associate Director:* Jim Wilkening, Recreation and Wellness Center 204, (407) 823-2408

The UCF Intramural Sports program offers the opportunity to participate in more than 50 action-filled team, dual, and individual sports including perennial favorites flag football, basketball, soccer, and floor hockey. Several divisions of competition are offered to accommodate various skill levels.

A unique aspect of the UCF program is referee development in which you will be trained to officiate at sports events, earn money on campus, and get an opportunity to work in the Orlando community. To sign up as a team or individual, and for more information, visit [www.imsports.ucf.edu/](http://www.imsports.ucf.edu/). Get involved and remember to take a little time each day to play.

### **Multicultural Academic and Support Services (MASS)**

*Interim Director:* Terry Exum, HPH 102, (407) 823-5130

The Office of Multicultural Academic and Support Services (MASS) provides comprehensive academic support, cultural enrichment, consultation, and referral services that promote the recruitment, admission, retention, and graduation of African American, Hispanic American, Asian American

and Native American students. MASS offers personalized advising and support, monitors academic progress, sponsors a six week summer program, called Seizing Opportunities for Achievement and Retention (SOAR), and designs and coordinates cultural and social activities to assist multicultural students in realizing their academic, career and personal goals. MASS serves as the focal point of operations in addressing the specific needs, issues and concerns that confront multicultural students at UCF. Learn more about MASS by visiting the website at [www.mass.sdes.ucf.edu/](http://www.mass.sdes.ucf.edu/).

### **Off-Campus Student Services**

*Assistant Vice President and Director:* Dr. Jimmy Watson, HAB 101, (407) 823-6505

Off-Campus Student Services (OCSS) assists students in their search for off-campus housing accommodations. OCSS provides listings of off-campus apartments and resources for students needing to find roommates, storage, sublease, transportation, and furniture rental information.

Off-Campus Student Services also provides UCF students living off-campus with information regarding a variety of on-campus programs and services. OCSS fosters a supportive environment for off-campus students by providing advocacy for resolving problems immediately or through campus referrals, and exploring other available resources for students. Students are encouraged to utilize the services offered by Off-Campus Student Services, and to become acquainted with the many benefits campus has to offer. For more information about Off-Campus Student Services, visit the website at [www.housing.ucf.edu/offcampus/](http://www.housing.ucf.edu/offcampus/)

### **Office of Instructional Resources**

*Director:* Dr. Ruth Marshall, Classroom Building I, Room 203, (407) 823-2571

The Office of Instructional Resources (OIR) supports UCF administrators, faculty, and staff with multimedia design and production, digital media, webcasting, video production, audio production, photography, graphics, and a full range of multimedia classroom support services. OIR manages UCF's interactive video network, which includes seven origination rooms on the main campus and ten receive rooms at branch campus locations. OIR's facilities include the Digital Image

Processing Lab (DIPL), located in the Research Pavilion in the Central Florida Research Park. In association with its community partners, DIPL offers UCF faculty access to state-of-the-art digital imaging technologies including digital image processing, digital document scanning, and CD-ROM production. OIR's Faculty Multimedia Center (CL1 202) provides multimedia production, image scanning, slide scanning, CD-ROM production and duplication, graphics for brochures and posters, and training resources for faculty using Macintosh and Windows personal computer systems. OIR's Interactive Video Classroom (CL1 320) is used for videoconferencing and ITV course origination. The room also provides faculty with an excellent location for training in ITV production and delivery skills. OIR also supports over 340 advanced multimedia classrooms and eight interactive video origination classrooms located throughout the campus and our regional campus locations.

The ITV network services several area campus sites, including the UCF Downtown Center, the branch campuses at Brevard and Daytona, and other off-campus instructional sites such as South Orlando, Palm Bay, Valencia Community College's west campus, and Lake Sumter Community College at Clermont. OIR also provides cable television delivery on the main campus, and ISDN and IP-based videoconference and services. For more information about the OIR, visit the website at [www.oir.ucf.edu](http://www.oir.ucf.edu)

### **Office of Student Conduct**

*Assistant Director:* Dana Juntunen, FC 154,  
(407) 823-2851

The Office of Student Conduct addresses alleged violations of the Rules of Conduct contained within the student handbook, *The Golden Rule*. This office is also responsible for advising students of their rights during the Student Conduct Review Process, discipline certification, and student eligibility checks. The Office of Student Conduct annually publishes the student handbook, *The Golden Rule*, which contains more detailed information on student life. Copies may be obtained in FC 154, or may be viewed on the web at: [www.goldenrule.sdes.ucf.edu](http://www.goldenrule.sdes.ucf.edu).

### **Office of Student Rights and Responsibilities**

*Director:* Patricia MacKown, FC 155,  
(407) 823-6960

By offering a wide range of services designed to assist as well as educate students in resolving their disputes, the Office of Student Rights and Responsibilities (OSRR) combines Student Legal Services, Dispute Resolution Services, and the Office of Student Conduct. OSRR provides a forum that contributes to the individual growth and development of the student's knowledge of community responsibilities, due process, conflict resolution skills, and university student conduct rules. Our resources are more effectively used by combining and referring within the judicial knowledge base that exists within these three services. For further information, visit the website at [www.osrr.sdes.ucf.edu](http://www.osrr.sdes.ucf.edu)

### **Office of Student Financial Assistance**

*Executive Director:* Mary H. McKinney, MH 120,  
(407) 823-2827. For appointments, call  
(407) 823-5285

The primary role of this office is to provide financial assistance to students and families, allowing them to participate fully in the total educational experience. The office is responsible for coordinating and processing all resources for both undergraduate and graduate students. It also serves as the Undergraduate Student Personnel Office. Students may contact the Office of Student Financial Assistance to receive individual, comprehensive counseling by telephone or to schedule an appointment with a counselor. The office provides a complete line of services regarding financial assistance to all students. For more detailed information, visit the website at: <http://finaid.ucf.edu/>.

### **Office of Student Involvement**

*Director:* Dr. Kerry P. Welch, SU 208,  
(407) 823-6471

The Office of Student Involvement provides programs, resources, and services that enhance student life at the university. The office oversees registration and management of more than 350 student organizations (academic/preprofessional and honorary, sports clubs, military, religious,

special interests, minority/international, and service groups) and advises the Campus Activities Board (CAB), Fraternity and Sorority Life, Homecoming, Knights of the RoundTable (KoRT), Late Knights, Multicultural Student Center (MSC), Student Government Association (SGA), and Volunteer UCF (VUCF). For more information, visit the website at [www.osi.sdes.ucf.edu](http://www.osi.sdes.ucf.edu).

## Recreation and Wellness Center

*Director:* William Ehling, RWC, (407) 823-5011

The Recreation and Wellness Center (RWC) offers cardiovascular training equipment, weight training equipment, group exercise rooms, basketball courts, an indoor track, sand volleyball courts, a swimming pool, and a climbing wall. The UCF Campus Wellness Center, also housed with RWC, sponsors a wide variety of health-related classes, lessons, and programs throughout the year. Playing fields and tennis courts adjacent to the center are available to students when not in use for scheduled events. The Recreation and Wellness Center is open to all students with a valid UCF ID. Memberships are available for non-students. The RWC staff also operates the Lake Claire recreation area, which is located just north of Greek Row. Lake Claire offers picnic facilities, watercraft, and a nature trail.

## Registrar's Office

*University Registrar:* Dr. Dennis J. Dulniak, MH 161, (407) 823-3100

The Registrar's Office, with a commitment to quality service and leading edge technology, provides efficient registration, effectively meets student administrative needs, and ensures a complete enrollment process from registration through graduation. The office maintains the integrity of academic records and coordinates and enforces University policies and procedures campus-wide through cooperation, communication, and leadership. The Registrar's Office is responsible for the management and publication of course offerings, the *Undergraduate Catalog*, *Schedule Web Guide*, and the efficient utilization of classroom resources, residency reclassifications, student veteran services and Commencements. For further information, visit the website at <http://registrar.ucf.edu>.

## Rosen College of Hospitality Management Campus Life

*Director:* Tony Perry, Rosen College of Hospitality Management, Suite 201L, (407) 903-8072

Rosen College of Hospitality Management Campus Life office provides student services at the area campuses including undergraduate and graduate advising, student financial assistance, co-op planning and placement, career services, student club and organization support, student counseling, student disability services, off-campus student housing information, student activities programming guidance and support, and *UCF Golden Rule* interpretation.

## Student Disability Services

*Director:* Dr. Philip Kalfin, FC 132, (407) 823-2371

The Office of Student Disability Services provides information and individualized services consistent with the student's documented disability. Such services may include, but are not limited to, orientation to campus facilities and services, assistance with classroom accommodations, assistance with course registration, disabled parking decals, counseling, and referral to campus and community services for students with disabilities.

To be eligible for disability-related services, individuals must have a documented disability as defined by federal and state laws. Services are available to students whose disabilities include, but are not limited to, hearing impairment, manual dexterity impairment, mobility impairment, specific learning disability (such as dyslexia), speech impairment, visual impairment, or other disabilities requiring administrative or academic accommodations. Individuals seeking services are required to provide documentation from an appropriate health care provider or professional.

If a student needs special admission consideration based on a disability, the student should answer this question on the Application for Admission form and send the requested appropriate documentation to the Admissions Office. Students who have a disability that may require special assistance are requested to voluntarily contact the Office of Student Disability Services. All information is confidential and will be used only to assist the student. Information and assistance are available for faculty members working with students with

disabilities. A Telecommunication Device for the Deaf (TDD)/Text Telephone (TTY) is available for hearing-impaired or speech-impaired persons with TDDs/TTYs to contact the university. Call (407) 823-2116, for TDD/TTY phone calls only. For more information, visit the website at [www.sds.ucf.edu/](http://www.sds.ucf.edu/).

## Student Government Association

*Assistant Directors of OSI/SGA Advisers:* Shane Juntunen and Christa Coffey, SU 214, (407) 823-2191

The Student Government Association's (SGA) purpose is to represent student views on issues affecting UCF and to promote progressive changes that improve campus life. In advocating better communication and understanding among the UCF family, SGA also provides numerous services which impact student life. These services currently include computer labs, discount tickets to movie theaters and theme parks, free local calling on campus telephones, funding for legal services, recreational services and Campus Activities Board programming. Money allocated by the Student Government Association for these services comes from activity and service fees which students pay during registration. Additionally, UCF clubs and organizations may receive funding for events, projects and travel to conventions. SGA coordinates its efforts with the Florida Student Association in lobbying for students' rights on local, state and national government levels. For more information, visit the website at [www.sga.ucf.edu/home/](http://www.sga.ucf.edu/home/).

## Student Health Services (SHS)

*Director:* Robert Faust, SHC, (407) 823-2701

Recognizing the importance of lifestyle in health and the prevention of disease, Student Health Services combines quality care for illness and accidents with an aggressive health education and lifestyle enhancement program. A Student Wellness Advocate Team (SWAT) enhances the health promotion efforts of the Wellness Center.

The Student Health Center (SHC) is staffed by physicians, advanced registered nurse practitioners, physician assistants, registered nurses, pharmacists, and a full complement of other medical support personnel. Full referral service to Orlando area specialists is established.

Each health fee paying student is entitled to the benefits provided through Student Health Services and outlined in printed material available in the Student Health Center. Most office consultations and programs are provided without additional costs. Laboratory tests, X-rays, medications, and some supplies require additional but significantly reduced payments which may be made with cash, credit card, personal check, or charged to the student's account. For more information, visit the website at [www.shs.ucf.edu](http://www.shs.ucf.edu).

## Student Legal Services

*Director:* Patricia MacKown, FC 155, (407) 823-2538

Student Legal Services provides students with advice and consultation including court representation in selected areas of law such as landlord/tenant, consumer, simple wills, traffic, and criminal. Each eligible student (an undergraduate or graduate student currently enrolled at UCF) is entitled to consult with a Program Attorney about any legal matter not excluded by program guidelines free of charge. Students in need of legal services should contact Student Legal Services at (407) 823-2538. This service is by appointment only, and no legal advice is given over the phone. For more information, visit the website at [www.stulegal.sdes.ucf.edu](http://www.stulegal.sdes.ucf.edu)

## Student Union

*Director:* Suzanne Halpin, SU 312, (407) 823-2117

The Student Union is the meeting place on campus and provides the campus community with a variety of meeting places, offices, programs, and services. The Union is home to a great variety of restaurants including Joffrey's Coffee and Tea Company, Smoothie King, Steak Escape, Subway, Burger King, Sbarro, Qdoba Mexican Grill, Mrs. Field's Bakery, Pretzel Time, and Wackadoo's Grub and Brew. Retail stores include Park Avenue CD's Jr., Greek Unique, KnightStop Convenience Store, College Optical, and the UCF Computer Store. Other services in the Union are the SGA Ticket Center and Computer Lab, U.S. Postal Center, and ATMs from SunTrust, Bank of America, and the UCF Federal Credit Union. For more information, visit the website at [www.studentunion.ucf.edu](http://www.studentunion.ucf.edu).

## Transit Services

*Web address:* <http://parking.ucf.edu/Transit.html>

Through joint efforts of UCF and LYNX, UCF students, faculty, and staff have a number of transit options. Three bus routes serve UCF from Oviedo, Downtown Orlando, and Valencia Community College East campus. Through the use of these routes, commuters can connect to most anywhere in Greater Orlando. These buses normally operate at 30 to 60 minute intervals. The cost to ride LYNX is \$1.50 per ride. Special passes are available at discounted rates. Route maps may be obtained at the Millican Hall Information kiosk or by calling LYNX at (407) 841-8240.

The Student Transportation Shuttle Service provides intracampus transit for student resident communities, as well as throughout the Research Park area. This service consists of fixed routes operating on 15-minute intervals. All students, faculty, and staff are eligible to ride the shuttle at no per-trip cost. Route maps may be obtained through the Parking Services website at <http://parking.ucf.edu>.

## UCF Alumni Association

*Director:* Thomas Messina, Fairwinds Alumni Center, (407) UCF-ALUM

The University of Central Florida Alumni Association is a community. It's a group of people that have a UCF experience, who care about the university and who want to stay connected to it. The Association was developed to maintain awareness and support of the university by our alumni. Membership is open to all alumni and friends of the university. For more information, visit the website at [www.alumni.ucf.edu](http://www.alumni.ucf.edu).

## UCF Bookstore

*General Manager:* Denise Berrios, John T. Washington Center (407) 823-2665

The UCF Bookstore is operated under a contractual agreement with Barnes and Noble. The Bookstore is located in the John T. Washington Center and is open to the public. In addition to textbooks and school supplies, this facility offers a complete line of UCF insignia clothing and gift items, as well as a full service Starbucks cafe. For more information visit the website at <http://ucf.bkstore.com>

## University Libraries

*Director:* Barry B. Baker

*Associate Director for Administrative Services:*  
Frank R. Allen

*Associate Director for Public Services:* Margaret K. Scharf  
LR 512, (407) 823-2564

*Librarians:* Barbara J. Alderman, Buenaventura B. Basco, Penny M. Beile, Tim Bottorff, Lyn S. Case, Linda K. Colding, Eda M. Correa, Doug Dunlop, J. Richard Gause, Jr., Donna R. Goda, Richard H. Harrison II, Carole S. Hinshaw, Athena R. Hoepfner, Selma K. Jaskowski, Elizabeth E. Killingsworth, Marcus D. Kilman, Allison O. King, Cynthia M. Kisby, Elizabeth Konzak, Cheryl G. Mahan, Jason Martin, Harold D. Mendelsohn, Kimberly K. Montgomery, Renee Montgomery, Jeanne M. Piascik, Meredith C. Semones, Kristine Shrauger, Marilyn R. Snow, Peter Spyers-Duran II, Catherine Steffens, Carla M. Summers, Terrie K. Sypolt, Andrew Todd, Rachel G. Viggiano, Jeannette A. Ward, Jack L. Webb, Ying Zhang.

The main University Library has a collection of more than 1.6 million volumes, including 16,000 serial subscriptions. In addition to bound volumes, the library owns approximately 2.9 million microforms and 45,000 media titles. UCF is a partial depository for both United States and Florida government publications and is a U.S patent depository. The library is open approximately 105 hours per week including evenings and weekends. Current hours are available on the website: <http://library.ucf.edu/administration/hours/> or by calling (407) 823-2564.

More than 240 computer workstations are available for public use on all floors of the University Library. Included in this total are 60 laptops equipped with wireless cards that can be checked out for use anywhere in the library building. Patrons who have laptops with wireless cards can also bring their own computers and connect to the library's electronic resources and the Internet from anywhere in the building. The library also has two classrooms outfitted with 41 computer workstations for hands-on instruction in the use of electronic resources.

The library's web-based catalog, can be accessed from any personal computer with internet connection. The library's homepage also offers a gateway to hundreds of electronic databases, the catalogs of other state university system libraries,

and the community college system libraries. For help and advice in the use of the library and its materials, the Reference Desk is open during most library hours. Librarians are on duty to assist in the use of the online catalog, electronic reference sources, and other library collections. Assistance is also available through the Ask a Librarian service, by telephone at (407) 823-2562 or at <http://library.ucf.edu/ASK/>.

The Interlibrary Loan and Document Delivery Services Department (ILL) assists students in obtaining materials not owned by the library. Most book loans and photocopied materials can be acquired free of charge within two weeks. Request forms are available on the ILL website at <http://library.ucf.edu/ill> or at the ILL Office (Room 221). For more information, call (407) 823-2383 during office hours, or visit the ILL website.

Special services are provided for people with disabilities. By using WebLUIIS, students can determine the availability of books they need and telephone the library to request that books be retrieved from the shelves and brought to them at the circulation desk. A Kurzweil reading machine is available in the library for people with visual impairments; students may arrange for instruction in its use. Through the cooperation of the university's Office of Student Disability Services and the Florida Bureau of Blind Services, the library staff will aid disabled students in obtaining special equipment they may need to use library resources.

The Curriculum Materials Center (CMC), a unit of the University Library, is located in the Education Building. The CMC provides representative K-12 curriculum materials for preview, review, analysis, and circulation. The facility serves primarily the students and faculty of the College of Education, however, it is open to all campus faculty, staff, and students. For more information on this center, see the CMC website at <http://library.ucf.edu/CMC> or call (407) 823-2791.

Additional library collections are available at the Brevard Community College-University of Central Florida Joint Use Library in Cocoa and at the Daytona Beach Community College Library in Daytona Beach. At both locations the university works with the local community college to provide complete information services, including materials processing and checkout. Both locations have electronic access to LUIS and to university resources on the web. Courier and intercampus

loan services make the main library's collections available to UCF students at all area campus sites. For more information, see the website at <http://library.ucf.edu/BranchCampuses/default.htm>

## University Ombuds Office

*Director:* Victoria Brown, Millican Hall 243, RM 247, (407) 823-6440

The Office of the Ombuds Officer provides members of the university community assistance and advice regarding concerns related to the university. These services are available to every member of the university community—students, staff, faculty, and others. Any type of concern may be brought to the attention of this office: academic, financial, housing, consumer, work-related, or personal. The university Ombuds Officer is a neutral facilitator and will listen to your concern, help you explore options, offer suggestions and advice, and assist in the resolution of your concern. Referral and direction to appropriate individuals and offices, and clarification of university policies and procedures are services of the office. All proceedings in individual cases will be held confidential by the Ombuds Officer unless otherwise authorized by the complainant, or otherwise required by applicable law, including without limitation, Chapter 119, Florida Statutes.

## UCF Public Safety and Police Department

*Chief:* Richard P. Turkiewicz  
Police Department, UCF, P.O. Box 163550,  
Orlando, FL 32816-3550; (407) 823-5555, <http://police.ucf.edu>  
*Parking Services Web address:* <http://parking.ucf.edu>

The UCF Police Department is a full-service law enforcement agency. The Patrol Division consists of police officers providing police services twenty-four hours a day, seven days a week. The officers patrol the campus on foot, marked patrol cars, canine units and on marked motorcycles. They are supplemented by additional police officers patrolling on mountain bikes and motorcycles.

The Investigations Unit consists of detectives that investigate all unsolved criminal cases. The Crime Prevention Unit presents Crime Prevention seminars for property protection and personal safety of the community. The Community-Oriented

Policing program (COP) consists of five officers assigned to the UCF Housing areas. These officers work closely with the residents and housing staff in a "partnership" to reduce crimes in these areas. The Student Escort Patrol Service (SEPS) is an evening escort service for all individuals on campus. The Victim Services Unit helps victims with emotional support and practical assistance, informational and referrals, and also provides educational services. Parking Services has the responsibility of maintaining all parking facilities on the UCF campus, selling parking decals, and enforcing parking regulations.

### University Writing Center

*Interim Director:* Dr. Haven Sweet, TR MOD 608; (407) 823-2197

The University Writing Center (UWC) offers a valuable free resource for graduate students looking for assistance with their writing. Trained graduate consultants at the UWC assist writers with all manner of projects, including course-specific term papers, conference proposals, annotated bibliographies, and GTA application essays. They also work with writers through the entire thesis and dissertation process, providing feedback on planning, research, drafting, and revising. Graduate writers working on longer projects can make a series of appointments to get regular feedback from the same consultant.

In addition, the Graduate Gateway section of the UWC website ([www.uwc.ucf.edu/Grad%20Gateway/gg\\_home.htm](http://www.uwc.ucf.edu/Grad%20Gateway/gg_home.htm)) offers a useful online library of graduate writing resources, information, and links. An explanation of grant proposals, conference papers, and the stages of a thesis are available, as well as information about resume writing and sample dissertations and theses.

To work with a UWC consultant, we recommend that graduate students make an appointment, either by using our Online Scheduler on our website, stopping by TR MOD 608, or calling (407) 823-2197. Writers should bring any notes or drafts, a copy of the assignment (if any), and any relevant textbook or handbook. We also provide a convenient, friendly environment in which to compose, revise, and edit. A library of handbooks, dictionaries, rhetorics, and style books is available for use within the University Writing Center. For more information, visit the website at [www.uwc.ucf.edu](http://www.uwc.ucf.edu).

### Veterans Services, Registrar's Office

*Assistant University Registrar:* Lee Parker, MH 161, (407) 823-2707

The Veterans Services Office (VSO) is a center for all veteran students and eligible dependents who are using VA educational benefits to further their education. The office has a professional staff augmented by student veterans to assist in providing information concerning entitlements, filing claims to the Department of Veterans Affairs (DVA), and certifying enrollment at the university. The office also provides counseling for personal and academic concerns, tutorial assistance and referral to various community agencies. Veterans and eligible dependents must be certified through Veterans Services to receive VA educational benefits. The office monitors the academic progress of all those receiving VA educational benefits. All veterans and eligible dependents are urged to consult Veteran Services early in the UCF admissions process, as well as visit the VA website at [www.va.ucf.edu](http://www.va.ucf.edu) for information.

### COLLEGES

- ◇ Burnett School of Biomedical Sciences
- ◇ College of Arts and Humanities
- ◇ College of Business Administration
- ◇ College of Education
- ◇ College of Engineering and Computer Science
- ◇ College of Health and Public Affairs
- ◇ College of Nursing
- ◇ College of Optics and Photonics
- ◇ Rosen College of Hospitality Management
- ◇ College of Sciences
- ◇ Modeling and Simulation Program

Since its inception in 1963, the university's diverse colleges and schools have helped ensure UCF's prominent role as an outstanding graduate and research institution. With new programs, tracks and certificates constantly being created, the opportunities for a high-quality graduate education are endless.

### Burnett School of Biomedical Sciences

The mission of the Burnett School of Biomedical Sciences in the College of Medicine is to build nationally recognized biomedical education and research enterprise.



The major discoveries of the second half of the twentieth century are sure to revolutionize the practices in medicine, agriculture and industry in general in the first half of the twenty-first century. This truly may become the "Century of Biology." To fully participate in these unprecedented advances, UCF's School of Biomedical Sciences will hire 34 new faculty members over the next five years.

Construction of a new 103,000-square-foot Burnett Biomedical Science building is expected to start shortly to provide a contiguous space for the biomedical sciences researchers to optimize synergistic interactions and the use of shared core equipment and facilities.

In addition, the school is forming active partnerships with other units such as the College of Optics and Photonics and the Nanoscience Technology Center to build interdisciplinary research and education programs in the innovative applications of photonics and nanoscience to biomedical problems. Faculty members in the school are engaged in research at the cutting edge to find solutions to major biomedical problems.

The school recently updated its undergraduate curriculum to better prepare students for health professions and graduate studies in biomedical sciences. The school also provides pre-health advisement for UCF students to prepare them for entry into health professional schools.

The school has revised the M.S. program in Molecular Biology and Microbiology. The Medical Laboratory Science Program prepares tomorrow's medical laboratory technologists. The school has initiated an accelerated B.S./M.S. program in biotechnology to help provide a skilled workforce for the emerging biotechnology industry. The interdisciplinary Ph.D. program in Biomedical Sciences prepares tomorrow's biomedical scientists.

The school is committed to excellence in undergraduate and graduate education and to building innovative interdisciplinary research programs to discover solutions for important biomedical problems and to provide a highly creative environment to foster its educational programs.

### **School Administration**

- P. E. Kolattukudy, Director

## **Faculty**

### **Biomedical Sciences Ph.D. Program (Interdisciplinary Program)**

*Chair of the Department:* P. E. Kolattukudy

*Graduate Program Director:* Steve Ebert

*Professors:* Jack Ballantyne, Chemistry; Kevin D. Belfield, Chemistry; David Borst, Chemistry; Henry Daniell, Molecular Biology and Microbiology; Robert Gennaro, Molecular and Microbiology; Mark Muller, Burnett School of Biomedical Sciences and Molecular and Microbiology; Kiminobu Sugaya, Biomolecular Science Center; James Hickman, Nanoscience and Technology Center; P. E. Kolattukudy, Burnett School of Biomedical Sciences, Biomolecular Science Center, and Molecular Biology and Microbiology; Roseann White, Molecular Biology and Microbiology; Antonis S. Zervos, Biomolecular Science Center

*Associate Professors:* Karl X. Chai, Molecular Biology and Microbiology; Debopam Chakrabarti, Molecular Biology and Microbiology; Ratna Chakrabarti, Molecular Biology and Microbiology; Zixi Cheng, Biomolecular Science Center; Alexander Cole, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology; Steven Ebert, Burnett School of Biomedical Sciences, Biomolecular Science Center; Cristina Fernandez-Valle, Molecular Biology and Microbiology; Keith Ireton, Molecular Biology and Microbiology; Saleh A. Naser, Molecular Biology and Microbiology; Otto Phanstiel, Chemistry; Suren A. Tatulian, Biomolecular Science Center; James Turkson, Biomolecular Science Center; Laurie von Kalm, Biology; Ella Bossy-Wetzel, Biomolecular Science Center; Youming Lu, Molecular Biology and Microbiology, Burnett School of Biomedical Sciences

*Assistant Professors:* Cristina Calestani, Biology; Stephen Chan, Biomolecular Science Center; Mingui Fu, Biomolecular Science Center; Annette Khaled, Biomolecular Science Center; Jeanette Nadeau, Biology; Christopher L. Parkinson, Biology; Thomas L. Selby, Chemistry; William Self, Burnett School of Biomedical Sciences and Molecular and Microbiology; Kenneth Teter, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology; Peter Molnar, Nanoscience and Technology Center; Sic L. Chan, Biomolecular Science Center; Manuel Perez,

Nanoscience and Technology; Swadeshmukul Santra, Nanoscience and Technology

## **Molecular Biology and Microbiology Master of Science Program**

*Chair of the Department:* P. E. Kolattukudy

*Assistant Chair:* R. White

*Graduate Program Director:* K. X. Chai

*Professors:* Henry Daniell, Molecular Biology and Microbiology; Mark Muller, Burnett School of Biomedical Sciences and Molecular and Microbiology; Kiminobu Sugaya, Burnett School of Biomedical Sciences; Roseann White, Molecular Biology and Microbiology; P.E. Kolattukudy, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology; Alexander Cole, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology; David Borst, Chemistry; Antonis S. Zervos, Biomolecular Science Center

*Associate Professors:* Karl X. Chai, Molecular Biology and Microbiology; Debopam Chakrabarti, Molecular Biology and Microbiology; Ratna Chakrabarti, Molecular Biology and Microbiology; Zixi Cheng, Biomolecular Science Center; Alexander Cole, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology; Steven Ebert, Burnett School of Biomedical Sciences, Biomolecular Science Center; Cristina Fernandez-Valle, Molecular Biology and Microbiology; Keith Ireton, Molecular Biology and Microbiology; Saleh A. Naser, Molecular Biology and Microbiology; Otto Phanstiel, Chemistry; Suren A. Tatulian, Burnett School of Biomedical Sciences; James Turkson, Biomolecular Science Center; Youming Lu, Molecular Biology and Microbiology; Zixi Cheng, Biomolecular Science Center; Ella Bossy-Wetzel, Biomolecular Science Center

*Assistant Professors:* Annette Khaled, Burnett School of Biomedical Sciences; Stephen Chan, Biomolecular Science Center; Mingui Fu, Biomolecular Science Center; William Self, Burnett School of Biomedical Sciences and Molecular and Microbiology; Kenneth Teter, Burnett School of Biomedical Sciences and Molecular Biology and Microbiology

*Instructors:* Dorilyn Hitchcock, Molecular Biology and Microbiology; Dr. Frances Morgan, Molecular Biology and Microbiology; Wilfredo Lopez-Ojeda, Molecular Biology and Microbiology; Gennaro Lopez, Molecular Biology and Microbiology; Mohtashem Samsam, Molecular Biology and Microbiology; William Safranek, Molecular Biology and Microbiology; Julius Charba, Molecular Biology and Microbiology

## **Medical Laboratory Science Program**

*Chair of the Department:* P. E. Kolattukudy

*Undergraduate Program Director:* D. Hitchcock

## **Pre-Health Program**

*Chair of the Department:* P. E. Kolattukudy

*Undergraduate Program Director:* G. A. Lopez

## **Programs**

- Biomedical Sciences Ph.D. Program
- Molecular Biology and Microbiology Master of Science Program
- Medical Laboratory Science Program
- Pre-Health Program

## **Admission to Graduate Programs**

Applicants must apply for graduate admission to the university. The requirements include:

- An undergraduate GPA of 3.0 (on a 4.0 scale) on the last 60 attempted semester hours.
- A bachelor's degree from an accredited institution.
- A competitive score on the General Graduate Record Examination (verbal/quantitative scores combined) for master's program, or a competitive score on the General Graduate Record Examination (verbal/quantitative scores combined) for the Ph.D. program.
- A score of 220 (computer-based test or equivalent score on the paper-based test) on the Test of English as a Foreign Language (TOEFL) if the applicant is an international student.

In addition to meeting the minimum university admission requirements, each applicant is required to satisfy school and department admission requirements. Specific department requirements are listed in respective departmental sections. Meeting the minimum admissions requirements

does not automatically guarantee admission, as enrollment may be restricted by limited school or department resources. Supplemental information such as research/goal statements, resumes, work or internship experience may be considered by the graduate program directors in making admissions decisions. The school strongly encourages applications from minority and diverse populations, however race, national origin and gender are not used in the evaluation of students for admission into graduate and professional programs.

## College of Arts and Humanities

The College of Arts and Humanities consists of five academic departments and one school, which offer graduate degree programs in Art, English, Film and Digital Media, History, Modern Languages and Literatures, and Theatre. In addition to these departments, the college offers graduate certificates in Cognitive Sciences, Contemporary Humanities, ESOL Endorsement K-12, Gender Studies, Professional Writing, Teaching English as a Foreign Language (TEFL), and Theoretical and Applied Ethics.

The office serves the needs of students by providing friendly, easily accessible support and advisement, and by assisting with record keeping, registration, and graduation. It supports the academic development of students and faculty by providing appropriate resources, encouraging scholarly and creative activities, and promoting quality graduate education and research facilities. It also supports the establishment and development of new and competitive graduate programs by serving as a responsive source of information for students, faculty, and staff, by encouraging increases in the number and quality of graduates, and by serving as a liaison between the programs and the College of Graduate Studies.

The office assists students in matters concerning college and university requirements and procedures. Students should address questions concerning admission materials, acceptance notification, program of study, graduate committee membership, thesis and dissertation approvals, fellowship and financial information, waiver and petition forms, and graduate certifications to their respective department; however these items are processed through this office for all graduate students in the college. Questions concerning university and college graduate policies affecting Arts and Humanities programs should be directed to the

Graduate Studies Office in the College of Arts and Humanities Dean's Office, CAH 190.

## College Administration

*Web address:* [www.cah.ucf.edu](http://www.cah.ucf.edu)

*Graduate web address:* [www.cah.ucf.edu/students/graduate.php](http://www.cah.ucf.edu/students/graduate.php)

The College of Arts and Humanities Dean's Office consists of the following:

- J. Fernández, Dean
- C. Stebbins, Associate Dean for Graduate Studies
- L. Brodie, Associate Dean
- T. Frederick, Associate Dean
- L. Hepner, Director, Graduate Studies

## Faculty

### Art

*Web address:* [www.art.ucf.edu/](http://www.art.ucf.edu/)

*Chair of the Department:* Mark Price, M.F.A.

*Studio Art and the Computer MFA Graduate Program Director:* Scott Hall, VAB 105G, (407) 823-0798. *E-mail:* [shall@mail.ucf.edu](mailto:shall@mail.ucf.edu)

*Professors:* J. J. Chavda, M.F.A.; M. K. Francis, B.F.A.; W. Gaudnek, Ph.D.; D. Haxton, M.F.A.; M. Price, M.F.A.; R. T. Reedy, M.F.A.; R. Rivers, M.F.A.

*Associate Professors:* C. Abraham, M.F.A.; J.H. Kim, Ph.D.; C. Poindexter, M.F.A.

*Assistant Professors:* H. Abbas, M.F.A.; J. Cutler, Ph.D.; M. Gonzalez, Ph.D.; S. F. Hall, M.F.A.; K. B. Haran, M.F.A.; K. Kovach, M.F.A.; E.B. Robinson, M.F.A.; M. L. Wyatt, M.F.A.

*Instructors:* R. Burkhart, M.F.A.; J. Burrell, M.F.A.; L. Cooper, M.F.A.; A. Decean, M.F.A.; T. Lotz, M.F.A.; F. Martin, Ph.D.; S. Spencer, M.F.A.

*Visiting Instructor:* M. Zaho, Ph.D.

### English

*Web address:* [www.english.ucf.edu](http://www.english.ucf.edu)

*Chair of the Department:* Thomas Krise, Ph.D.

*English MA Graduate Program Director:* Beth

Young, CNH 405, (407) 823-5254.

*Creative Writing MFA Graduate Program Director:*  
Ivonne Lamazares, CNH 405, (407) 823-5062.

*Texts and Technology Doctoral Program Director:*  
Melody Bowdon, CNH 405, (407) 823-6234.

*Professional Writing Certificate Program Director:*  
Melody Bowdon, CNH 405, (407) 823-6234,  
*Email:* mbowdon@mail.ucf.edu.

*E-mail:* englgrad@pegasus.cc.ucf.edu

*Professor Emeritus:* R. Adicks, Ph.D.; S. E. Omans,  
Ph.D.; G. Schiffhorst, Ph.D.

*Professors:* P. Dombrowski, Ph.D.; J.  
Hemschemeyer, M.A.; S. Hubbard, M.A.; D.  
R. Jones, Ph.D.; P. Murphy, Ph.D.; C. J. Saper,  
Ph.D.; J. F. Schell, Ph.D., Vice Provost for  
Academic Affairs; K. L. Seidel, Ph.D.; D. L.  
Stap, Ph.D.; D. Trouard, Ph.D.; D. Wallace,  
Ph.D.

*Associate Professors:* J. D. Applen, Ph.D.; J.  
Bartkevicius, Ph.D.; K. L. Bell, Ph.D.; M.  
Bowdon, Ph.D.; J. Campbell, Ph.D.; L. Casmier-  
Paz, Ph.D.; M. Flammia, Ph.D.; M. Kamrath,  
Ph.D.; K. Kitalong, Ph.D.; I. Lamazares, Ed.D.;  
J. Leiby, M.F.A.; A. Lillios, Ph.D.; L. Logan,  
Ph.D.; M. Marinara, Ph.D.; B. Mauer, Ph.D.; K.  
Meehan, Ph.D.; T. Pugh, Ph.D.; C. Rodríguez  
Milanés, D.A.; P. J. Rushin, M.A.; B. Scott,  
Ph.D.; E. Smith, Ph.D.; B. Young, Ph.D.

*Assistant Professors:* D. Bowie, Ph.D.; J. Carpenter,  
Ph.D.; K. Giglio, Ph.D.; A. Grajeda, Ph.D.; A.  
Jones, Ph.D.; K. Oliver, Ph.D.; L. Roney, Ph.D.;  
T. Thaxton, M.F.A.

*Visiting Assistant Professors:* L. Brodtkin, Ph.D.; G.  
Lippincott, Ph.D.

## School of Film and Digital Media

*Web address:* www.sfdm.ucf.edu

*Interim Director:* TBD

*Film Division Head:* Steve Schlow, B.S.; COMM  
121, (407) 823-2845 www.film.ucf.edu

*Interim Digital Media Division Head:* David  
Vickers, Ph.D.; University Technology Center  
500, (407)823-6100, www.dm.ucf.edu

*Florida Interactive Entertainment Academy*  
*Executive Director:* B. Noel, M.B.A.; Expo  
Centre, (407)823-2121, www.fiea.ucf.edu

*Graduate Administrative Program Coordinator:*  
Patty Hurter, COMM 121B, (407) 823-2845

*Professors:* C. Blue, M.F.A.; R. Blum, Ph.D.; C.  
Bowers, Ph.D.; K. Congdon, Ph.D.; T. Frederick,  
Ph.D.; C. Hughes, Ph.D.; R. Jones, M.F.A.;  
M. Moshell, Ph.D.; S. Rohdie, Ph.D.; S. Sung,  
Ph.D.; G. Yearwood, Ph.D.

*Associate Professors:* J. Cannon-Bowers, Ph.D.;  
R. Finch, J.D.; M. Johnson, Ph.D.; P. Peters,  
M.F.A.; B. Sandler, M.F.A.; U. Stoeckl, Diploma

*Assistant Professors:* C. Harris, M.F.A.; T.  
McDaniel, Ph.D.; L. Mills, Ph.D.; N. Underberg,  
Ph.D.

*Lecturers:* J. Wolfe, M.F.A.

*Visiting Lecturers:* S. Gokhale, M.F.A.

*Research Associates:* M. Gourlay, Ph.D.; R.  
Weaver, M.E.T.

## History

*Web address:* <http://www.cah.ucf.edu/history/>

*Chair of the Department:* TBD

*History MA Graduate Program Director:* Hong  
Zhang, CNH 551, (407) 823-2224.

*E-mail:* hisgrad@pegasus.cc.ucf.edu

*Professors:* R.C. Crepeau, Ph.D.; J.B. Fernandez,  
Ph.D., Dean, College of Arts and Humanities;  
E.F. Kallina, Jr., Ph.D.; L. Martinez-Fernandez,  
Ph.D.

*Professors Emeritus:* T. Colbourn, Ph.D.; S.A.  
Leckie, Ph.D.; J.H. Shofner, Ph.D.

*Associate Professors:* C.E. Adams, Ph.D.; R.J.  
Beiler, Ph.D.; F.L. Gordon, Ph.D.; E. Walker,  
Ph.D.; V. White, Ph.D.; H. Zhang, Ph.D.

*Assistant Professors:* A.E. Foster, Ph.D.; G. Garcia,  
Ph.D.; P.L. Larson, Ph.D.; C.L. Lester, Ph.D.;  
A.H. Lyons, Ph.D.; J.M. Sacher, Ph.D.; V.  
Solonari, Ph.D.; J. Spencer Downing, Ph.D.

*Visiting Assistant Professors:* R. Cassanello, Ph.D.

## Modern Languages and Literatures

*Web address:* [www.cas.ucf.edu/forlang/](http://www.cas.ucf.edu/forlang/)

*Chair of the Department:* Paolo Giordano, Ph.D.

*Spanish MA Graduate Program Director:* Celestino Villanueva, CNH 523, (407) 823-5935.

*Spanish Graduate Program E-mail:* [spangrad@mail.ucf.edu](mailto:spangrad@mail.ucf.edu)

*TESOL MA Graduate Program Director:* Keith Folse, CNH 523, (407) 823-4555.

*TESOL Graduate Program E-mail:* [teslgrad@pegasus.cc.ucf.edu](mailto:teslgrad@pegasus.cc.ucf.edu)

*Professors Emeritus:* M. Del-Rio, Ph.D.; C.N. Micarelli, Ph.D.

*Professors:* J.B. Fernández, Ph.D., Dean, College of Arts and Humanities; P. Giordano, Ph.D.

*Associate Professors:* B.H. Decker, Ph.D.; H. Lopez-Cruz, Ph.D.; C. Stebbins, Ph.D., Associate Dean, College of Arts and Humanities; A. Villanueva, Ph.D.

*Assistant Professors:* J. Barbaret, Ph.D.; B. Celaya, Ph.D.; L. Ferri, Ph.D.; K. Folse, Ph.D.; K. Gervasi, Ph.D.; G. Haralampieva, Ph.D.; M.A. Leticee, M.A.; A. Negy, Ph.D.; K. Purmensky, Ph.D.; F. M. Taylor, Ph.D.

## Theatre

*Web address:* [www.theatre.ucf.edu](http://www.theatre.ucf.edu)

*Interim Chair of the Department:* Diane Chase, Ph.D.

*Associate Chair:* Joseph Rusnock

*MA, MFA Acting and MFA Design Graduate Program Director:* Julia Listengarten, University Tech Center 180, (407) 823-3858. *E-mail:* [jlisteng@mail.ucf.edu](mailto:jlisteng@mail.ucf.edu)

*Musical Theatre MFA Graduate Program Director:* Earl Weaver, University Tech Center 180, (407) 823-3638. *E-mail:* [weaver@mail.ucf.edu](mailto:weaver@mail.ucf.edu)

*Theatre for Young Audiences MFA Graduate Program Director:* Megan Alrutz, University Tech Center 180, (407) 896-7365 ext.235. *E-mail:* [malrutz@mail.ucf.edu](mailto:malrutz@mail.ucf.edu)

*Professor:* D. W. Seay, Ph.D.

*Associate Professors:* B. C. Boyd, M.F.A.; M. W. Brotherton, M.F.A.; S. R. Chicurel, D.M.A.; L. M. Harris, M.F.A.; K. H. Ingram, M.F.A.; P. F. Lartonoix, M.F.A.; J. Listengarten, Ph.D.; J. S. Rusnock, M.F.A.; H. Tan, M.F.A.; K. J. Tollefson, M.F.A.; B. T. Vernon, M.F.A.

*Assistant Professors:* M. Alrutz, Ph.D.; K. Becker, M.F.A.; J. C. Brown, M.F.A.; C. Niess, M.F.A.; J. J. Ruscella, M.F.A.; B. Scott, M.F.A.; J. W. Shafer, M.F.A.; E. Weaver, M.F.A.; V. Wood, M.F.A.; M. Wootton, M.F.A.; N. H. Wuerhmann, M.M.

*Instructor:* H. E. McDonald, M.F.A.

*Lecturers:* J. Siegfried, M.F.A.; S. St. Claire, Ph.D.

*Assistants in Theatre:* J.D. Helsinger, M.F.A.; Z. Stribling, M.F.A.; F. G. Flannery.

*Visiting Professors:* D.K. Lee, M.F.A.; D. M. Jones, M.F.A.

## Programs

### Doctor of Philosophy

- Texts and Technology

### Master of Science

- Interactive Entertainment Track

### Master of Arts

- English—Literature Track, Rhetoric and Composition Track and Technical Writing Track
- History—General and Public History Track
- Spanish
- Teaching English to Speakers of Other Languages (TESOL)
- Theatre

### Master of Fine Arts

- Creative Writing
- Film and Digital Media—Entrepreneurial Digital Cinema Track and Visual Language and Interactive Media Track
- Studio Art and the Computer
- Theatre—Acting Track, Design Track, Musical Theatre Track and Theatre for Young Audiences Track

## Accelerated Undergraduate to Graduate Programs

Undergraduate to graduate degree programs are a combined program with a bachelor's completed in four years and a master's completed in two years for a total of approximately a five-year BA/MA degree program.

- History

## Graduate Certificates

Cognitive Sciences. Jennifer Mundale, program coordinator, (CNH 411L); 407-823-5076; [jmundale@pegasus.cc.ucf.edu](mailto:jmundale@pegasus.cc.ucf.edu)

Contemporary Humanities. Bruce Janz, program coordinator, (CNH 411E); 407-823-5408; [janzb@mail.ucf.edu](mailto:janzb@mail.ucf.edu)

ESOL Endorsement K-12. Keith Folse, program coordinator, (CNH 512B); 407-823-4555; [kfolse@mail.ucf.edu](mailto:kfolse@mail.ucf.edu)

Gender Studies. Lisa Logan, program coordinator, (CNH 201); 407-823-2269; [lmlogan@mail.ucf.edu](mailto:lmlogan@mail.ucf.edu)

Professional Writing. Melody Bowdon, program coordinator, (CNH 307G); 407-823-6234; [mbowdon@pegasus.ucf.edu](mailto:mbowdon@pegasus.ucf.edu)

Teaching English as a Foreign Language (TEFL). Keith Folse, program coordinator, (CNH 512B); 407-823-4555; [kfolse@mail.ucf.edu](mailto:kfolse@mail.ucf.edu)

Theoretical and Applied Ethics. Nancy Stanlick, program coordinator, (CNH 411I); 407-823-5459; [stanlick@pegasus.cc.ucf.edu](mailto:stanlick@pegasus.cc.ucf.edu)

## General Requirements

The course work and research requirements of the programs are designed with the intent of offering students the opportunity for educational advancement and professional training. A research report, thesis, or dissertation is required in most of the programs and is an option in others. The General Graduate Record Examination is required for admissions consideration in all graduate programs. Meeting minimum UCF admission criteria does not guarantee program admission. Admission to graduate programs is based upon an evaluation of the applicant's abilities, past performance, recommendations, match of the program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing

the degree. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Each department is headed by a chair and the School of Film and Digital Media is headed by a director who reports to the dean of the college. A graduate program director or coordinator is designated for each graduate program and can provide advice on questions about admission and degree requirements. Consult the individual degree program listings for detailed descriptions of admission requirements, degree requirements, and courses.

## College of Business Administration

The College of Business Administration offers two certificate programs, six master's programs and two doctoral programs. All graduate programs in business administration are accredited by the Association to Advance Collegiate Schools of Business (AACSB). The six professional programs leading to the master's degree are: Master of Business Administration, Master of Sport Business Management, Master of Science in Management Information Systems, Master of Science in Accounting, Master of Science in Taxation and Master of Science in Economics. Also offered on the main campus is a full-time Doctor of Philosophy (Ph.D.) in Business Administration, and a Ph.D. in Economics with a special focus on Environmental and Natural Resource (ENR) Economics. Two certificate programs are offered in Entrepreneurship and Technology Commercialization.

The mission of the College of Business Administration at the University of Central Florida is to provide quality business education programs, at the undergraduate, graduate, and executive levels, to the citizens of the state of Florida and to selected clientele nationally and internationally. In delivering these programs, the college places primary emphasis on excellence in teaching and research with a strong commitment to developing mutually supportive relationships with the business community of central Florida.

In pursuit of its mission, the College of Business Administration affirms its commitment to the university's focus on excellence and accent on the individual. Furthermore, the college pledges to deliver innovative and progressive programs to its

clientele.

### College Administration

- T. L. Keon, Dean
- B. Braun, Associate Dean for Administration and Technology
- Jaishankar Ganesh, Associate Dean of Graduate Programs
- E. T. Ellis, Associate Dean of Undergraduate Programs

### Faculty

#### Kenneth G. Dixon School of Accounting

*Director of the School:* R.W. Roberts, Ph.D.,  
Burnett Eminent Scholar Chair

*Professors:* V. Arnold, Ph.D., Ernst & Young Professor; C. G. Avery, Ph.D.; D. D. Bandy, Ph.D.; T. G. Evans, Ph.D.; R. Roberts, Ph.D., Burnett Eminent Scholar Chair; S. Sutton, Ph.D., KPMG Professor

*Associate Professors:* D. Bobek, Ph.D.; P. Dwyer, Ph.D.; P. M. Goldwater, Ph.D.; W. L. Johnson, Ph.D.; A. J. Judd, Ph.D.; C. F. Kelliher, Ph.D.; P. B. Roush, Ph.D.; L. J. Savage, Ph.D.; J. K. Welch, Ph.D.

*Assistant Professors:* T. Benford, Ph.D.; J. Lacy, Ph.D.

#### Economics

*Chair of the Department:* W. Milon, Ph.D.

*Professors:* M. Caputo, Ph.D.; U. Chakravorty, Ph.D.; M. Dickie, Ph.D.; S. Gerking, Ph.D.; G. Harrison, Ph.D.; R. A. Hofler, Ph.D.; W. W. McHone, Ph.D.; J. W. Milon, Ph.D.; E. Rutstrom, Ph.D.

*Associate Professors:* B. M. Braun, Ph.D.; W. E. Gibbs, Ph.D.; D. Hosni, Ph.D.; T. L. Martin, Ph.D.; R. L. Pennington, Ph.D.; M. Soskin, Ph.D.; K. R. White, Ph.D.

*Assistant Professors:* D. Scrogin, Ph.D.; C. Yang, Ph.D.

*Instructors:* J. Baker, MAAE; T. Buhagiar, MAAE; D. Butterfield, Ph.D.; P. Euzent, M.A.; B. Moore, MAAE; R. Potter, MAAE; N. Underwood, Ph.D.

### Finance

*Chair of the Department:* A. K. Byrd, Ph.D.

*Professors:* D. F. Scott, Jr., Ph.D., Phillips-Schenk Chair in American Private Enterprise; S. D. Smith, Ph.D., SunTrust Chair of Banking

*Associate Professors:* R. Ajayi, Ph.D.; S. F. Borde, Ph.D.; A. K. Byrd, Ph.D.; J. M. Cheney, D.B.A.; Y. Choi, Ph.D.; M. Frye, Ph.D.; J. H. Gilkeson, Ph.D.; N. K. Modani, Ph.D.; H. Park, Ph.D.; P. Ramanlal, Ph.D.; C. Schnitzlein, Ph.D.; W. C. Weaver, Ph.D.; A. M. Whyte, Ph.D.

*Assistant Professors:* A. Anand, Ph.D.; H. Chen, Ph.D.; V. Gatchev, Ph.D.; R. Ragozzino, Ph.D.

*Instructors:* B. Dalrymple, Ph.D.; P. Gregg, MS, CPA; H. Singer, J.D.; R. Sturm, MST, CPA.

### Management

*Chair of the Department:* F. F. Jones, Ph.D.

*Professors:* M. Ambrose, Ph.D.; R. Folger, Ph.D.; R. C. Ford, Ph.D.; R. C. Huseman, Ph.D.; T. L. Keon, Ph.D., Dean of the College of Business Administration; M. Schminke, Ph.D.

*Associate Professors:* B. Barringer, Ph.D.; W. A. Bogumil, Jr., Ph.D.; C. M. Ford, Ph.D.; F. F. Jones, Ph.D.; M. Sarkar, Ph.D.

*Assistant Professors:* D. Mayer, Ph.D.; M. McDonald, Ph.D.; R. Piccolo, Ph.D.

*Lecturer:* W. Rockmore, Ph.D.

### Management Information Systems

*Chair of the Department:* P. H. Cheney, Ph.D.

*Professors:* P. H. Cheney, Ph.D.; J. Courtney, Ph.D.; J. J. Jiang, Ph.D.; W. Leigh, Ph.D.; C. Saunders, Ph.D.

*Associate Professors:* S. Goodman, Ph.D.; R. Hightower, Ph.D.; L. West, Ph.D.

*Assistant Professors:* M. Parikh, Ph.D.; C. VanSlyke, Ph.D.

*Instructors:* R. Szymanski

### Marketing

*Chair of the Department:* R. E. Michaels, Ph.D.

*Professors:* D. L. Davis, D.B.A.; R. Desiraju, Ph.D.; R. E. Michaels, Ph.D.; R. S. Rubin, Ph.D.

*Associate Professors:* J. Allen, DBA.; R. Echambadi, Ph.D.; J. Ganesh, Ph.D.

*Assistant Professors:* X. He, Ph.D.; A. Joshi, Ph.D.; J. Kim, Ph.D.; A. Krishnamoorthy, Ph.D.; H. Mao, Ph.D.; C. Massiah, Ph.D.; A. Stock, Ph.D.; W. Vanhouche, Ph.D.; K. Yoon, Ph.D.

*Instructor:* R. Borrieci, M.B.A.; C. Gundy, M.B.A.; N. Howatt, M.S.; S. Mayfield-Garcia, M.S.; K. Sooder, M.B.A.

Sports Business Management

*Professors:* C. Harrison, Ph.D.; R. Lapchick, Ph.D.; W. Sutton, Ph.D.

## Programs

### Doctor of Philosophy in Business Administration

- Accounting Track
- Finance Track
- Management Track
- Management Information Systems Track
- Marketing Track

### Doctor of Philosophy in Economics (Environmental and Natural Resource)

### Master of Science in Economics

### Master of Business Administration

- 33-Month Lockstep
- Executive M.B.A. Track
- Professional M.B.A. Track
- One-Year, Full-Time M.B.A. Track

### Master of Science in Accounting

### Master of Science in Management Information Systems

### Master of Science in Taxation

### Master of Sport Business Management

### Certificate in Entrepreneurship

### Certificate in Technology Commercialization

## Admission to Master's Programs

Before candidates will be considered for admission, **all** required application documents—application, official transcripts, GMAT test score (or GRE test score can be used for the programs in Economics and MSMIS only), essays, a resume, and three recommendations—must be received in the offices of UCF Graduate Studies by the admission deadline. MSA and MST do not require essays or recommendation letters. Admission to graduate study in the College of Business Administration is open to individuals with a baccalaureate degree in any discipline from a regionally accredited college or university. Thus, all graduate programs are open to graduates in education, engineering, arts, sciences, and other fields as well as business. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Admissions are restricted each semester to individuals showing high promise of success in postgraduate studies. Admission criteria include academic achievement as an upper-division undergraduate student and satisfactory performance on the GMAT. For the M.S. in Economics, and the MSMIS degrees only, scores on either the GRE or GMAT may be submitted. Both GMAT and GRE scores have a limit of five years. Other indicators of promise include the applicant's extracurricular activities, work experience, job responsibilities, and leadership experience. Foreign students whose native language is not English are required to achieve a score of at least 91 (Internet-based; or equivalent score on the computer or paper-based test) on the Test of English as a Foreign Language (TOEFL). The Test of Spoken English (TSE) may be required if deemed necessary by faculty recommendation. All foreign transcripts must be evaluated by an acceptable agency for bachelor degree equivalency.

Enrollment in graduate courses in the College of Business Administration is limited to students who have been accepted and classified with regular graduate status in the M.B.A. program, Master of Sport Business Management, M.S. in Management Information Systems, M.S. in Accounting, M.S. in Taxation, or M.S. in Economics, and to other students with regular graduate status elsewhere in the university. Graduate-level courses may not be



taken unless a student is accepted into a graduate program.

An applicant will not be considered for admission to any graduate program until an official score on the GMAT or GRE (and TOEFL, if appropriate) has been received in addition to transcripts showing proof of attainment of the bachelor's degree and transcripts from all colleges attended.

### Academic Standards

Regularly admitted graduate students in the College of Business Administration must maintain an overall 3.0 GPA (grades of "B" or better) in both their program of study and any foundation core courses. In the event this is not maintained, a graduate student shall be placed in an academic probationary status (see Policies, Academic Progress and Performance section). If a 3.0 GPA is then not obtained in the subsequent nine semester hours of course work, the graduate student will be dismissed from the program. Students in all graduate programs must achieve a minimum grade of "C" in all foundation and professional core courses. Further, if graduate students accumulate grades of "C" or lower or unresolved "I" grades in more than three foundation core courses, they will be dismissed from the program. If graduate students accumulate more than six hours of "C" or lower and/or unresolved "I" grades on course work in the professional core, then they will be dismissed from the graduate program. Grade forgiveness policy does not apply to any courses (graduate or undergraduate) taken by graduate students in the College of Business Administration.

### College of Education

Graduate programs in the College of Education are provided for students who have completed at least a baccalaureate degree. Both degree and nondegree programs may be planned for people in education-related positions in social and government agencies, business and industry, as well as for professional educators in private and public schools. Master of Education and Master of Arts degrees are awarded in many fields. Education Specialist degrees are offered in School Psychology, Education with a track in Curriculum Studies, and Educational Leadership. Doctor of Education degrees are available in Educational Leadership and Education with a track in Curriculum Studies. The Doctor of Philosophy in Education is available with seven tracks: Counselor Education, Elementary

Education, Exceptional Education, Hospitality Education, Instructional Technology, Mathematics Education and Communication Sciences and Disorders. The College of Education is accredited by NCATE (National Council for the Accreditation of Teacher Education). In addition, the School Psychology program is accredited by the National Association of School Psychologists (NASP), and the Counselor Education program is accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP). The Counselor Education program includes, Mental Health Counseling (M.A.), School of Counseling (M.A., M.Ed.), and Counselor Education and Supervision (Ph.D.).

### College Administration

- Sandra L. Robinson, Dean
- Jennifer M. Platt, Executive Associate Dean
- B. Grant Hayes, Associate Dean
- Rex Culp, Associate Dean

### Faculty

#### Educational Studies

*Chair of the Department:* K. L. Biraimah, Ph.D.

*Assistant to the Chair:* M. Musangali, Ph.D.

*Professors:* K. L. Biraimah, Ph.D.; M. S. Lue, Ph.D.

*Associate Professors:* K. W. Allen, Ph.D.; D. N. Boote, Ph.D.; L. C. Holt, Ed.D.; C. J. Hutchinson, Ed.D.; A. J. Miller, Ed.D.

*Assistant Professors:* D. Alvarez, Ph.D.; R. S. Hewitt, Ph.D.; B. H. Hoffman, Ph.D.; M. Gill, Ph.D.; M. P. O'Malley, Ed.D.; P. Stewart, Ph.D.

*Associate Graduate Faculty:* E. Short, Ph.D., Professor Emeritus, The Pennsylvania State University

*Associate Faculty:* D. Becker, Ph.D.; P. Koger, Ed.D.

*Visiting Assistant Professors:* A. B. Kochan, Ph.D.; M. Johnson, Ph.D.; J. Piro, Ed.D.

*Instructors:* G. I. Eriksson, Ph.D.; J. Luckett, Ed.D.

## Educational Research, Technology and Leadership

*Chair of the Department:* C. Katzenmeyer, Ph.D.

*Assistant to the Chair:* M. Spinella, Ph.D.

*Professors:* W. C. Bozeman, Ph.D.; W. Orwig, Ed.D.; G. Pawlas, Ph.D.; S. L. Robinson, Ph.D., Dean.

*Associate Professors:* R. Cintron, Ph.D.; G. Gunter, Ph.D.; A. Hirumi, Ph.D.; J. Lee, Ph.D.; B. Murray, Ph.D.; K. Murray, J.D., Ph.D.; S. Sivo, Ph.D.; R. Taylor, Ph.D.; L. Witta, Ph.D.

*Assistant Professors:* M. Alexander-Snow, Ph.D.; T. Atkinson, Ph.D.; H. Bai, Ed.D.; D. Hahs-Vaughn, Ph.D.

*Visiting Assistant Professors* M. Beverly, Ph.D.; W. Doherty, Ph.D.

*Instructors & Coordinators:* M. Miller, Ph.D.; J. McGee, Ed.D.; A. Scheick, Ph.D.

*Associate Graduate Faculty, Florida Gulf Coast University:* C. F. Carter, Ed.D.; T. C. Valesky, Ed.D.

*Associate Faculty:* L. Baldwin, Ph.D.; G. Perreault, M.Ed.

## Child, Family and Community Sciences

*Chair of the Department:* A. Culp, Ph.D.

*Assistant to the Chair:* R. Brice, Ph.D.

*Professors:* R. E. Culp, Ph.D., J.D.; A. M. Culp, Ph.D.; S. M. Martin, Ph.D.; J. M. Platt, Ed.D., Associate Dean; E. H. Robinson, Ph.D.; W. Wienke, Ed.D.; M. Young, Ph.D.

*Associate Professors:* C. R. Balado, Ed.D.; M. Blanes, Ph.D.; L. Cross, Ph.D.; A. Daire, Ph.D.; L. Dieker, Ph.D.; D. Ezell, Ph.D.; L. Hartle, Ph.D.; B. G. Hayes, Ph.D., Assistant Dean; R. Hines, Ph.D.; D. Jones, Ph.D.; M. Little, Ph.D.; G. Taub, Ph.D.

*Assistant Professors:* O. Edwards, Ed.D.; W. B. Hagedorn, Ph.D.; E. M. Kian, Ph.D.; G. Lambie, Ph.D.; J. Szente, Ph.D.

## Teaching and Learning Principles

*Chair of the Department:* Mike Hynes, Ph.D.

*Assistant to the Chair:* Lawrence Mione, Ed.D.

*Assistant to the Chair:* TBA

*Professors:* D. Baumbach, Ed.D.; T. Blair, Ph.D.; M. H. Hopkins, Ed.D.; A. R. Joels, Ph.D.; M. J. Palmer, Ed.D.; T. Brewer, Ph.D.

*Associate Professors:* P. Crawford, Ph.D.; J. Dixon, Ph.D., Associate Director of Lockheed Martin/UCF Academy; R. M. Everett, Ph.D.; P. Higginbotham, Ed.D.; J. Kaplan, Ph.D.; D. Mitchell, Ed.D.; J. Nutta, Ph.D.; S. E. Ortiz, Ed.D.; S. Roberts, Ed.D.; M. K. Romjue, Ph.D.; A. Sweeney, Ph.D.; K. Verkler, Ph.D.; K. Williams, Ph.D.; V. Zygoris-Coe, Ph.D.

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## Programs

### Doctoral Degrees

- Education (Ed.D.)
- Educational Leadership (Ed.D.)
- Education (Ph.D.)—Tracks: Communication Sciences and Disorders, Counselor Education, Elementary Education, Exceptional Education, Hospitality Education, Instructional Technology, Mathematics Education and Science Education

### Education Specialist Degrees

- Education
- Educational Leadership
- School Psychology—Tracks: School Counseling and School Psychology

### Master's Degrees

- Art Education—Track: Community College Teaching
- Career and Technical Education
- Counselor Education—Tracks: Mental Health Counseling and School Counseling
- Curriculum and Instruction
- Early Childhood Education
- Educational Leadership—Track: Student Personnel Administration in Higher Education

- Elementary Education—Track: Community College Teaching
- English Language Arts Education—Track: Community College Education
- Exceptional Student Education
- Instructional Technology—Tracks: E-Learning, Educational Media (Online Program), Educational Technology, and Instructional Systems
- K-8 Mathematics and Science Education
- Marriage and Family Therapy
- Mathematics Education—Tracks: Middle School Mathematics, Community College Teaching
- Music Education—Track: Community College Teaching
- Physical Education—Track: Sports and Fitness
- Reading Education
- Science Education—Tracks: Biology, Chemistry, Physics, Middle School Science, Community College Teaching
- Social Science Education—Track: Community College Teaching

### Graduate Certificates

- Autism Spectrum Disorders
- Career Counseling
- Coaching
- Community College Education
- E-learning Professional Development
- Foreign Language Education
- Gifted Education
- Global and Comparative Education
- Health and Wellness
- Initial Teacher Professional Preparation
- Instructional/Educational Technology
- Instructional Design for Simulations
- K-8 Mathematics and Science Education
- Marriage and Family Therapy
- Online Educational Media
- Play Therapy
- Pre-Kindergarten Handicapped Endorsement
- Professoriate
- Reading Education
- Special Education
- Sports Leadership
- Teaching Excellence
- Teaching Writing K-12
- Urban Education

### Doctoral Programs

The College of Education offers the Ph.D. in Education with tracks in Communication Sciences

and Disorders, Counselor Education, Elementary Education, Exceptional Education, Hospitality Education, Instructional Technology, and Mathematics Education. The Ph.D. in Education is a research-oriented degree appropriate for educators from school districts, businesses, industry, educational agencies, and other educational settings who need a strong research base in their careers. It is the intent of this program to be interdisciplinary, allowing flexibility for students who will work in research clusters and learning communities with faculty on education-related research. Programs of study can be designed for those educators who seek teaching positions in a research university or a research-oriented position in business and industry. (Please note that the previously offered Ph.D. in Curriculum and Instruction Program has been discontinued.)

Doctor of Education (Ed.D.) programs are offered in two areas. One is Educational Leadership for students who are interested in management and leadership positions in educational organizations. Professional experience and potential are important considerations for admission to the Educational Leadership Program. The second is Education with a track in Curriculum and Instruction, designed for those interested in teaching in a college of education, teaching a content field at the community college level, becoming a school district leader in curriculum and instruction, or performing instructional design tasks in military or business settings.

### Admission Policy

Each doctoral program in the College of Education has specific application deadlines. Refer to the program descriptions for these dates. Completed applications must be on campus by January 15 for fall admission and fellowship screening. Admitted students may begin course work during the first new semester after admission. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Pursuant to Florida Statute 1004.04 and State Board of Education Rule 6A-5.066, applicants to College of Education graduate programs that are state-approved initial teacher preparation programs must demonstrate mastery of general knowledge as a program admission requirement. To meet this requirement, applicants whose composite

quantitative-verbal GRE score is less than 1000 must pass all four parts of the College Level Academic Skills Test or General Knowledge Test of the Florida Teacher Certification Examination for program admission.

## Application

Completed application files must include: a completed UCF graduate application form, including transcripts from all previously attended post-secondary schools, three letters of recommendation (should include those that will provide professional and academic information), a professional resume, and a statement of professional goals. Other information may be requested after the file is started. An interview is normally requested of applicants as part of the review process. Admission decisions are made based on the total of information provided to the admission committee.

## Admission Requirements

Applicants must qualify for graduate admission to the university. The requirements include:

- An undergraduate GPA of 3.0 (on a 4.0 scale) on the last 60 attempted semesters hours
- A bachelor's degree from a regionally accredited or recognized international institution
- A competitive score on the General Graduate Record Examination (verbal/ quantitative scores combined). NOTE: GRE score of 1000 or higher (or passing score on all parts of the College Level Academic Skills Test or Florida Teacher Certification Examination General Knowledge Test) is required for admission to state-approved initial teacher certification programs.
- A score of 220 (computer-based test or equivalent score on the paper-based test) on the Test of English as a Foreign Language (TOEFL) if the applicant is an international student

Additionally, applicants for the doctoral degrees in the College of Education must

- Have completed at least three years of full-time teaching or comparable experience; and
- Be recommended for admission by the appropriate doctoral program admission committee. (Recommendations are based on compatibility of the applicant's goal statements and the particular doctoral program, the strength of the recommendation letters,

the applicant's past record of professional accomplishments, the applicant's apparent potential for academic success, and the applicant's perceived potential for professional success.)

NOTE: These programs are competitive and meeting minimum university requirements does not guarantee admission. Those applicants who do not meet admission criteria may appeal to the College of Education Graduate Standards and Curriculum Committee for consideration. Admittance in one doctoral program does not guarantee admittance in another. Each doctoral program reserves the right to review the applicant's files and interview applicants for admission.

## Transfer Credit

For master's degrees: The number of transfer credits allowed is generally limited to 9 credit hours. Graduate courses taken at UCF prior to admission to the master's program are considered to be transfer credits. For doctoral programs: The number of transfer credit hours applied to the course requirements for a doctoral degree may not exceed 30 semester hours. Transfer credit may include only graduate hours awarded by an accredited institution toward a master's degree and post-master's degree work. The transfer credit allowed will be determined on a case-by-case basis by the graduate adviser and graduate program director. Post-master's degree credit taken at UCF prior to admission to the program is considered to be transfer credit.

## Financial Support

Students interested in financial support through Education fellowship programs must have completed application files by the fall priority deadline. Fellowships are typically awarded in the previous spring for students enrolling for the first time in the fall semester of the next academic year. Graduate assistantships may be granted for those who apply by February 20 for the following academic year.

## Continuous Attendance

Doctoral students working on the dissertation must be continuously enrolled in at least three credit hours of dissertation research every semester until successfully defended. Unless students have requested leaves of absence for periods longer than three semesters, students will lose the option of

fulfilling degree requirements under earlier catalogs. To avoid problems associated with maintaining graduate status, doctoral students are encouraged to enroll each semester, including summers, and to file for leaves of absence for periods longer than three semesters.

### **Residency Requirement**

Each student shall complete at least two contiguous resident semesters in full-time graduate student status. "Full-time" for doctoral programs in Education is defined as being enrolled for a minimum of nine hours per semester.

### **Admission to Candidacy**

Before students can enroll in dissertation hours, they must apply for admission to candidacy. To be eligible for candidacy, students must have completed all degree course requirements, passed all candidacy examinations, and successfully presented a dissertation prospectus to their committee.

### **Status as Candidate**

Students must continue to enroll for at least three semester hours of dissertation credit each semester after attaining candidacy status until the oral defense of the dissertation has been successful. Post-candidacy enrollment is allowed for a maximum of four years, subject to the seven-year time limitation.

### **Time Limitation**

A student has seven years from the date of admission to the doctoral program to complete the dissertation. If the seven-year limit is exceeded, the candidacy examinations as well as course work may need to be repeated.

### **Dissertation**

Dissertations are required in all doctoral programs. College of Education candidates will follow the APA (American Psychological Association) guidelines.

### **Education Specialist Programs**

Education Specialist (Ed.S.) degree programs are offered in three areas: Education with a track in Curriculum Studies, for persons in teaching and other instruction/training leadership

positions; Educational Leadership, for those who are interested in decision-making positions in educational organizations; and School Psychology, for students preparing to enter the specialized fields of School Psychology or School Counseling.

Because the courses of the Ed.S. degree may differ from those of the Ed.D., credit earned in an Ed.S. degree program may not be automatically transferable to a doctoral degree program. When a recipient of an Ed.S. degree is accepted for a doctoral program, the respective doctoral advisory committee will determine the amount of applicable credit earned in the Ed.S. for the doctoral program. In any case, 30 semester hours is the maximum amount of credit transferable to a doctoral program of study from previously earned graduate degrees.

### **Admission Requirements**

Admission to the Education Specialist program requires:

- A master's degree from a regionally accredited institution (except in the case of School Psychology, which does not require a master's degree but does have other admission requirements including a minimum combined verbal and quantitative GRE score of 1000 or higher or passing score on all parts of the College Level Academic Skills Test or Florida Teacher Certification Examination General Knowledge Test) AND
- A competitive score on the General Graduate Record Examination (verbal and quantitative sections) AND
- A minimum score of 220 (computer-based test or equivalent score on the paper-based test) on the Test of English as a Foreign Language if the applicant is an international student AND
- Other criteria as required by the respective degree program area AND
- A recommendation from the respective advanced graduate program admission committee.

NOTE: Those applicants who do not meet the admission criteria may appeal to the respective program admission committee for consideration. A second GRE score is required, and at least one of the scores must exceed 900 for review by these committees.

### **Degree Requirements**

A program of study (i.e., required course work)

will be specified by the student's program area and approved by the College of Education. In addition, the student must

- Complete course requirements for the Ed.S. degree (36 hours beyond the master's);
- Complete a course of study that includes a minimum of 12 semester hours in the specialization area, 6 graduate-level hours in research/statistics, and additional requirements that are specified by the program area;
- Maintain an overall 3.0 GPA on all graduate work attempted;
- Pass all required examinations; and
- Satisfy all other academic standards that apply to master's students. (These standards must be met or exceeded by specialist students.)

### **Transfer of Credit**

A maximum of 9 semester hours earned in a master's degree may be applied to the program of study. Graduate program coordinators or program specialization advisers, with approval of the Dean of the College of Education, make transfer credit decisions.

Students entering the School Psychology program from the baccalaureate level may transfer in a maximum of 9 semester hours of graduate credit earned subsequently at a regionally accredited institution of higher education. Courses taken as an undergraduate student may not be used for transfer unless the credit was graduate level and not a part of the undergraduate degree program.

### **Time Limit and Continuous Attendance**

The student has seven years from the date of admission to the Education Specialist degree to complete the program. No courses taken since the entry date may be older than 7 years and be used in the program. The college reserves the right to revert the status of students who do not maintain continuous enrollment to nondegree-seeking. Students who are reverted to nondegree-seeking status must petition to be reinstated to the program.

### **Examinations**

There are appropriate culminating academic experiences for each of the program areas. The specific program area requirements are listed under the program descriptions.

## **Master's Programs**

Programs are offered in a wide variety of areas within the general field of education. Master of Education programs are open only to qualified students who have completed a baccalaureate degree and have completed course work for regular Florida State Teaching Certification. This degree is appropriate for the practicing educator who wishes to update and extend knowledge of their present teaching field.

Master of Arts programs leading to initial certification are open to qualified individuals who are seeking both a master's degree and a new teaching certification or to qualified students seeking a master's degree in a field not requiring state teaching certification. Students who are presently teaching with a valid Florida Teaching Certificate may add a teaching field to their certificate by completing a Master of Arts degree. Those students without previous certification and who are seeking initial certification in a teaching area may be required by the program area to complete an internship to complete the state-approved program. M.A. candidates must complete a portfolio as part of the requirements of an internship.

NOTE: All Master of Arts programs at UCF leading to initial certification are state-approved programs. Completion of the prescribed program results in the affixing of a state-approved program stamp to the transcript. This stamp ensures that certification will be issued by the Florida Department of Education in the indicated area. Failure to complete the prescribed state-approved program through petitions, waivers, or unauthorized course substitutions will be cause not to affix the stamp of approval on the transcript. While the student may graduate with a Master of Arts, a transcript without the stamp will be evaluated for certification on a course-by-course basis. UCF and the College of Education do not guarantee that any non-stamped program transcript will lead to certification by the Florida Department of Education.

### **Admission**

The Graduate Record Examination (GRE) is required of all graduate students. Minimal requirements for admission are:

- A grade point average (GPA) of 3.0 for the last 60 attempted semester hours of undergraduate

study and a competitive score on the verbal-quantitative sections of the GRE.

- A score of 220 (computer-based test or equivalent score on the paper-based test) on the Test of English as a Foreign Language (TOEFL) is required if the applicant is an international student.

The college requires passing scores on either the General Knowledge Test (GKT) or the College Level Academic Skills Test (CLAST scores prior to July 2002 acceptable) for admission to Teacher Preparation Programs for those applications with a GRE score of less than 1000, as mandated by the Florida legislature.

In addition, a student seeking a Master of Education degree must show evidence that all course work has been completed for the basic bachelor's level state of Florida teaching certificate. Master of Arts programs, available in some specialties, may be planned without the student's having previously completed certification courses.

Specific graduate programs within the College of Education may use socioeconomic status, commitment to work in low income neighborhoods, evidence of community or volunteer work, family educational background, first generation in college, overcoming hardships, or personal interviews as additional criteria for admission. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

### **Restricted Admission**

The College of Education has a separate restricted application process for those students who do not present at least a 3.0 grade point average in their last 60 attempted semester hours of undergraduate course work AND a competitive score on the combined verbal-quantitative sections of the Graduate Record Examination. The restricted deadline is earlier in the semester for all programs with the exception of School Psychology, Counselor Education, and the doctoral programs. To be considered for restricted admission in the College of Education, students must file an application for restricted status in the Education Student Services Office (ED 110; 407-823-3723) upon being denied regular admission. Department committees make recommendations to the College Graduate Standards and Curriculum Committee.

The following criteria are applied in evaluating applications:

- Ranking of undergraduate 60-hour grade point average
- Ranking of GRE score
- Contribution, current and projected, to the profession
- Number of years of professional experience
- Number of nondegree-seeking hours taken
- Grade point average on any nondegree-seeking work
- Recommendations by college faculty and other professionals.

Restricted students who do not maintain a 3.0 GPA during their first nine hours of enrollment will be reverted to nondegree-seeking status. Those who are accepted as restricted students by one program are not accepted into another, but must reapply for restricted admittance into another program.

### **Program of Study**

Students are officially assigned formal academic advisers upon admission to a College of Education graduate degree program. It is the student's responsibility to seek advisement and finalize a program of study early in the degree program. Students are advised to file a program of study within the first nine hours of their graduate study. The acceptability and application of nondegree/transfer hours toward a degree is contingent upon the recommendation of the academic adviser and is approved only after a program of study has been officially filed through all university channels.

Academic advisers are not assigned to individuals admitted as nondegree-seeking students. Nondegree-seeking students may seek information and general advisement in the Education Student Services Office (ED 110; 407-823-3723). Nondegree-seeking students seeking certification in the state of Florida and who have been initially certified elsewhere are not eligible for financial assistance from the university. In general, non-degree-seeking students cannot receive financial assistance unless enrolled for at least half-time and have not previously been certified. Students should check with the Office of Student Financial Assistance regarding their specific circumstances.

### **Performance Standards**

Minimum university-wide standards and regulations are applicable in addition to the specific College of

Education requirements and regulations described in this section. A "B" (3.0 GPA) must be maintained on all graduate work and no more than six hours of "C" may be earned and applied to the degree program. Unresolved "I" (incomplete) grades must be resolved according to university guidelines. In addition to the minimum university standards, College of Education students must maintain at least a 2.5 GPA in all co-requisite work prescribed in concert with a graduate degree program.

Students whose grade point average on degree work falls below 3.0 will be placed on probationary status for a nine semester-hour period of enrollment. During this time, the GPA must reach or exceed the 3.0 minimum to remain in the program.

### **Culminating Experience**

Prior to graduation, all students are required to successfully complete an academic culminating experience, which is planned and evaluated by each student's program area. Comprehensive examinations are the most common form of culminating experience. Failure on a comprehensive examination requires re-enrollment and reexamination during a subsequent semester. Two failures on the comprehensive examinations will result in a student being reverted from degree-seeking to non degree-seeking status. Students are required to be enrolled during the semester in which they take examinations to satisfy this requirement and must be enrolled the term they plan to graduate.

### **Thesis, Research Report, and Non-thesis Options**

In most programs, master's degree students in education, with adviser consultation, may select one of three options: Thesis, a research paper with a formal faculty committee and defense; Research Report, a research paper supervised by the student's adviser; or the non-thesis option, course substitution for the research papers. For specific options within programs and resultant minimum credit hour requirements, see individual program sections of this catalog or please consult the graduate program director for the degree sought.

### **College of Engineering and Computer Science**

The College of Engineering and Computer Science offers graduate programs leading to Master of

Science and Doctor of Philosophy degrees. Each department within the college offers options for a specialized education.

The College of Engineering and Computer Science has the following departments with graduate programs:

- Civil and Environmental Engineering
- School of Electrical Engineering and Computer Science
- Industrial Engineering and Management Systems
- Mechanical, Materials, and Aerospace Engineering

### **College Administration**

- Neal Gallagher, Ph.D., Dean
- Jamal Nayfeh, Ph.D., Associate Dean for Academic Affairs
- Debra Reinhart, Ph.D., Executive Associate Dean, Interim Associate Dean of Research

### **Faculty**

#### **Department of Civil and Environmental Engineering**

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*Associate Professors:* M. A. Aty, Ph.D., P.E.; M. B. Chopra, Ph.D., P.E.; J. D. Dietz, Ph.D., P.E.; S.C. Hagen, Ph.D.; F. N. Nnadi, Ph.D., P.E.; A. A. Randall, Ph.D., P.E.

*Assistant Professors:* N. Catbas, Ph.D.; L. Zhao, Ph.D.

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*Associate Professors:* N. da Vitoria Lobo, Ph.D.; M. Heinrich, Ph.D., Associate Director; T. Kasparis, Ph.D.; H. I. Klee, Ph.D.; S. D. Lang, Ph.D.; J. Leeson, Ph.D.; A. Orooji, Ph.D.; S. Pattanaik, Ph.D.; B. E. Petrasko, D. Eng.; S. M. Richie, Ph.D.; Z. J. Shen, Ph.D.; A. Weeks, Ph.D.; L. Wei, Ph.D.; D. A. Workman, Ph.D.; A. Wu, Ph.D.; T. Wu, Ph.D.

*Assistant Professors:* A. Behal, Ph.D.; N. Behdad, Ph.D.; J. Berrios, Ph.D.; L. Boloni, Ph.D.; M. Chatterjee, Ph.D.; J. Cheng, Ph.D.; H. Foroosh, Ph.D.; X. Gong, Ph.D.; M. G. Haralambous, D. Sc, P.E.; T. Kocak, Ph.D.; Joohan Lee, Ph.D.;

Jooheung Lee, Ph.D.; K. Stanley, Ph.D.; M. Tappen, Ph.D.; D. Turgut, Ph.D.; D. Turgut, Ph.D.; J. Wang, Ph.D.; P. Wocjan, Ph.D.; H. Zhou, Ph.D.; C. Zou, Ph.D.

*Lecturers:* N. Abdallah, Ph.D.; A. Guha, M.S.; M. Llewellyn, Ph.D.; E. Montagne, Ph.D.

*Professor Emeritus:* N. Tzannes, Ph.D.

*Affiliated Faculty:* H. Cho, Ph.D.; K. Coffey, Ph.D.; B. DeLoach, Ph.D.; A. Dogarui, Ph.D.; F. Hickernell, Ph.D.; J. Hickman, E. Johnson, Ph.D.; V. Kapoor, Ph.D.; A. Kar, Ph.D.; G. Li, Ph.D.; J.M. Moshell, Ph.D.; R. Shumaker, Ph.D.; M.J. Soileau, Ph.D.; P. Wa, Ph.D.; S. Watson, Ph.D.; S-T. Wu, Ph.D.

## Department of Industrial Engineering and Management Systems

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*Professors:* L. Crumpton-Young, Ph.D.; A.K. Elshennaway, Ph.D.; Y. A. Hosni, Ph.D., P.E.; L. C. Malone, Ph.D.; C. H. Reilly, Ph.D.; K. M. Stanney, Ph.D., University of Central Florida Trustee Chair.

*Associate Professors:* R. L. Armacost, D.Sc.; Mark Calabreses (visiting); R. L. Hoekstra, Ph.D.; T. G. Kotnour, Ph.D.; G. Lee, Ph.D., P.E.; P. R. McCauley-Bell, Ph.D.; M. Mollaghasemi, Ph.D.; M. A. Mullens, Ph.D.; J. Pet-Armacost, Ph.D.; M. D. Proctor, Ph.D.; L. Rabelo, Ph.D.; J. A. Sepúlveda, Ph.D., P.E.; K. E. Williams, Ph.D.

*Assistant Professors:* Renee Butler, Ph.D.; S. Furterer, Ph.D. (visiting); Christopher Geiger, Ph.D.; A. Tang, Ph.D.; Y. Wang, Ph.D.

*Professors Emeritus:* John Biegel, Ph.D.; George Schrader, Ph.D., P.E.; Gary Whitehouse, Ph.D.,

P.E., University Distinguished Professor and Provost Emeritus.

*Joint Appointees:* Subrato Chandra, Ph.D., P.E., Project Director, Florida Solar Energy Center; Randall Shumaker, Ph.D., P.E., Director of Institute of Simulation and Training

*Adjunct Faculty:* George Barcus, Ed.D.; E. J. Drown; Robert Long; Nabeel Yousef

## Department of Mechanical, Materials and Aerospace Engineering

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*Graduate Program Director:* C. Suryanarayana, ENGR-1, 307B, (407) 823-6662. E-mail: csuryana@mail.ucf.edu

*Professors:* P. J. Bishop, Ph.D., P.E., Vice Provost and Dean of Graduate Studies; R. H. Chen, Ph.D.; L. C. Chow, Ph.D.; J. Fenton, Ph.D.; O. Illegbusi, Ph.D.; J. Kapat, Sc.D.; A. J. Kassab, Ph.D.; R. Kumar, Ph.D., Chair; F. A. Moslehy, Ph.D., P.E.; J. F. Nayfeh, Ph.D., Associate Dean; D. W. Nicholson, Ph.D.; S. Seal, Ph.D.; C. Suryanarayana, Ph.D.

*Associate Professors:* Q. Chen, Ph.D.; L. P. Chew, Ph.D.; K. R. Coffey, Sc.D.; J. Fang, Ph.D.; R. W. Johnson, Ph.D., P.E.; K. C. Lin, Ph.D., P.E.; A. Minardi, Ph.D.; E. Petersen, Ph.D.; Y. Sohn, Ph.D.; R. Vaidyanathan, Ph.D.

*Assistant Professors:* L. An, Ph.D.; H.J. Cho, Ph.D.; A. P. Gordon, Ph.D.; S. Kalita, Ph.D.; C. Klemenzenz, Ph.D.; A. Leonessa, Ph.D.; N. Orlovskaya, Ph.D.

*Professors Emeritus:* B. Eno, Ph.D.; E. R. Hosler, Ph.D., P.E.; J. D. McBrayer, Sc.D., P.E.; W. F. Smith, Sc.D., P.E.

*Joint Appointees:* K. D. Belfield, Ph.D., Department of Chemistry; M. B. Chopra, Ph.D., Department of Civil and Environmental Engineering; N.

S. Dhere, Ph.D., Florida Solar Energy Center; E. Divo, Ph.D., Department of Engineering Technology; A. Kar, Ph.D., College of Optics and Photonics; W. Luo, Ph.D., Department of Physics, D.C. Malocha, Ph.D., Department of Electrical and Computer Engineering; N. Misconi, Ph.D., Department of Engineering Technology; K.B. Sundaram, Ph.D., Department of Electrical and Computer Engineering; K. Vajravelu, Ph.D., Department of Mathematics

*Adjunct Faculty:* J. Brandenburg, Ph.D., Florida Space Institute; B. Butler, Ph.D., Disney World; R. T. Galloway, Ph.D., Naval Air Warfare Center; M. McMeley, Ph.D., Lockheed-Martin Missiles and Fire Control; M. V. Swami, Ph.D., Florida Solar Energy Center; R. Zarda, Ph.D., Lockheed-Martin Missiles and Fire Control.

## Degree Programs

### Doctor of Philosophy

- Civil Engineering
- Computer Engineering
- Computer Science
- Electrical Engineering
- Environmental Engineering
- Industrial Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Modeling and Simulation

### Master of Science (M.S.)

- Engineering Management Track
- Environmental Engineering Sciences Track
- Human Engineering/Ergonomics Track
- Interactive Simulation and Training Systems Track
- Manufacturing Systems Engineering Track
- Operations Research Track
- Quality Engineering Track
- Simulation Modeling and Analysis Track
- Systems Engineering and Management Track

### Master of Science (M.S.)—Civil Engineering

- Structural and Geotechnical Engineering Track
- Transportation Engineering Track
- Water Resources Engineering Track

### Master of Science (M.S.)—Environmental Engineering

- Environmental Engineering Sciences Track

### Master of Science (M.S.)—Computer Science

**Master of Science in Aerospace Engineering (M.S.A.E.)**

- Space Systems Design and Engineering Track
- Thermofluid Aerodynamic Systems Design and Engineering Track

**Master of Science in Computer Engineering (M.S.Cp.E.)**

- Computer Networking Track
- Digital Systems Track
- Intelligent Systems Track
- Software Engineering Track

**Master of Science in Electrical Engineering (M.S.E.E.)**

- Communication Track
- Controls/Robotics Track
- Digital Signal Processing Track
- Electromagnetics Track
- Electronics/Power Electronics Track
- Electro-optics Track
- Solid State and Microelectronics Track
- VLSI Design Track

**Master of Science in Environmental Engineering (M.S.Env.E.)****Master of Science in Industrial Engineering (M.S.I.E.)****Master of Science in Materials Science and Engineering (M.S.M.S.E.)****Master of Science in Mechanical Engineering (M.S.M.E.)**

- Computer-Aided Mechanical Engineering Track
- Mechanical Systems Track
- Miniature Engineering Systems Track
- Professional Track
- Thermofluids Track

**Graduate Certificates****Civil Engineering**

- Structural Engineering
- Surface Water Modeling
- Transportation Engineering

**Computer Science**

- Digital Forensics

**Electrical Engineering**

- Communications Systems

- Electronic Circuits

**Environmental Engineering**

- Wastewater Treatment

**Industrial Engineering and Management Systems**

- Applied Operations Research
- Design for Usability
- Industrial Ergonomics and Safety
- Project Engineering
- Quality Assurance
- Systems Simulation
- Training Simulation

**Mechanical, Materials, and Aerospace Engineering**

- CAD/CAM Technology
- Computational Methods in Mechanics
- HVAC Engineering
- Launch/Spacecraft Vehicle Processing
- Materials Characterization
- Materials Failure Analysis

**College Admission Requirements**

**The College of Engineering and Computer Science requires that you fill out a pre-application form ([www.graduate.cecs.ucf.edu](http://www.graduate.cecs.ucf.edu)) before you complete the application for graduate admission.** Based upon the pre-application information, selected students will be invited to submit the university's online application for admission to graduate study. For these selected students, the College of Engineering and Computer Science will pay all application fees.

In addition to meeting the minimum university admission requirements, each applicant is required to satisfy college and department admission requirements. Specific department requirements are listed in respective departmental sections. Meeting the minimum admissions requirements does not automatically guarantee admission, as enrollment may be restricted by limited college or department resources. Supplemental information such as research/goal statements, resumes, work or internship experience may be considered by the graduate program directors in making admissions decisions. The college strongly encourages applications from minority and diverse populations; however race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

### **Master's Programs Admission Requirements**

- A minimum GPA of 3.0 during the last two years (60 hours) of attempted undergraduate degree work and a competitive score on the combined verbal and quantitative sections of the Graduate Record Exam (GRE).
- Applicants for master's programs must have bachelor's degrees and must present baccalaureate degree credentials appropriate to the specialized area of study that may include mathematics through differential equations for most programs. Consult with your program catalog description for specific math requirements.
- International students, except those who are from countries where English is the only official language or those who have earned a degree from an accredited American college or university, are required to submit a score of at least 220 (computer-based test; or equivalent score on the paper-based test) on the Test of English as a Foreign Language (TOEFL).

### **Doctoral Programs Admission Requirements**

- Each applicant is expected to meet the departmental admission requirements, including submission of an application for graduate admission with resume, goals statement, and three letters of Recommendation.
- On the decision of the department's graduate admissions committee, selected outstanding applicants may be considered for direct entrance to the doctoral program from the bachelor's degree. Students selected for this are expected to meet and exceed all master's program admission requirements. These applicants must successfully complete the Ph.D. Qualifying Examination upon completion of their required course work in their program of study.
- International students, except those who are from countries where English is the only official language or those who have earned a degree from an accredited American college or university, are required to submit a score of at least 220 (computer-based test; or equivalent score on the paper-based test) on the Test of English as a Foreign Language (TOEFL).

### **College Degree Requirements**

### **Master's Degree Requirements, Thesis Option**

- A minimum of thirty semester hours of approved course work including six hours of thesis credits is required.
- No more than six hours of thesis credits will be applied toward degree requirements.
- Continued enrollment in three hours of thesis once six hours of thesis credits have been completed and all course work has been satisfied, and until the final thesis has been received by the College of Graduate Studies.
- At least 15 credit hours must be from 6000-level courses (except for Computer Science).
- A maximum of 9 semester hours of graduate credit may be transferred into the program from UCF non-degree-seeking status or regionally accredited institutions. Only grades of "B-" or better can be transferred.
- A maximum of 6 credits of 4000-level courses may be applied toward a master's degree provided at least 30 credits are 5000 level or higher. No 3000-level courses are acceptable.
- A maximum of 6 semester hours of Independent Study and/or Directed Research, Internship or Practicum may be used toward the degree.
- A minimum "B" (3.0) average must be maintained in the program of study and no more than two "C" (C+, C, C-) grades are allowed.
- A written thesis and final oral defense are required.

### **Master's Thesis Committee**

- The Dean, through the Chairs, is responsible for committee formation, additions, and deletions. The thesis committee will consist of a minimum of three members. All committee members should hold a doctoral degree and be in fields related to the thesis topic. At least two members must be department faculty (one to serve as chair). Off-campus experts, joint faculty members, adjunct faculty, and other university faculty members may serve as the third person in the committee. Program areas may further specify committee membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.
- In unusual cases, with approval from the department Chair, two professors may chair

the committee jointly. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs. Particular programs may have more stringent requirements.

- All members vote on acceptance or rejection of the thesis proposal and the final thesis. The thesis proposal and final thesis must be approved by a majority of the advisory committee

### **Master's Degree Requirements, Nonthesis Option**

Most departments within the College of Engineering and Computer Science offer a 30-semester-hour, nonthesis option intended primarily for part-time students. The program requirements are the same as for the thesis option except that the thesis requirement is replaced by 6 credit hours of course work. An end-of-program comprehensive examination, oral or written, is required.

### **Doctoral Degree Requirements**

- The Industrial Engineering Management Systems program requires a minimum of 81 semester hours beyond the baccalaureate degree, including 24 semester hours of dissertation credits.
- The Mechanical, Materials and Aerospace Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering and School of Computer Science programs require a minimum of 72 semester hours beyond the baccalaureate degree, including 15 semester hours of dissertation credits (except Civil and Environmental Engineering, where 18 semester hours of dissertation credits are required.)
- Continued enrollment in three credit hours of Dissertation (XXX 7980) once the course work requirements and minimum hours of dissertation are satisfied.
- At least 6 semester hours of course work taken at UCF must be outside the student's area of specialization (except Computer Science), and no more than a combined total of 12 hours of independent study and/or directed research may be used to satisfy degree requirements.
- Up to 36 semester hours of credit, including a maximum of 6 credits of thesis may be transferred into the doctoral program. The transfer credits may consist of a maximum of 6 hours of 4000-level work, no 3000-level

courses, and no courses with grades less than "B-".

- A minimum "B" (3.0) average must be maintained in the program of study and no more than two "C" (C+, C, C-) grades are allowed.
- The student must successfully complete a Ph.D. Qualifying Examination conducted by the department. A student is normally given only one opportunity to pass the examination, but a second attempt may be approved by the department. The examination is normally taken within the first year of study beyond the master's degree.
- Students must pass the Candidacy Examination by submitting a proposal for research and getting approval prior to enrolling in dissertation hours.
- A written dissertation and final oral defense are required.

### **Doctoral Dissertation Committee**

- The Dean, through the Chairs, is responsible for committee formation, additions, and deletions. The doctoral committee must consist of a minimum of five members: three must be faculty members from within the student's department, and one must be at large from outside the department or school. The committee Chair must be a member of the department graduate faculty approved to direct dissertations. Joint faculty members may serve as department-faculty committee members. Adjunct faculty and off-campus experts may serve as the outside-the-department person in the committee. Program areas may further specify committee membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.
- In unusual cases, with approval from the program Chair, two professors may chair the committee jointly. Joint faculty members may serve as committee co-chairs, but off-campus experts and adjunct faculty may not serve as committee co-chairs. Particular programs may have more stringent requirements.
- All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

## Accelerated Undergraduate and Graduate Program

Some College of Engineering and Computer Science departments offer an integrated BS/MS degree program that allows students of high academic standing to complete an MS degree at an accelerated pace. The generic rule for students in this program is that they will be allowed to use nine hours of intermediate level (5000-level) graduate courses with a grade of "B-" or higher toward fulfillment of both the BS and MS degree requirements. Interested students should contact the department Assistant Chair or Graduate Coordinator if they have questions about this program.

## Florida Engineering Education Delivery System

Florida Engineering Education Delivery System (FEEDS) is a Florida distance learning system whereby graduate-level engineering courses are delivered via video-streaming to cooperating university centers and selected industrial sites. Most graduate courses offered each semester are available through FEEDS. A student taking courses through FEEDS must meet the same requirements as a student on campus and will earn the same credit as if attending on campus. Courses delivered by the system may contribute to graduate degrees in engineering.

An off-campus student in industry need not be enrolled in a graduate degree program in order to take a FEEDS course. Such students should apply online for non-degree-seeking status. However, students who intend to seek admission to a graduate program should be aware that no more than 9 credit hours of courses may be transferred from non-degree-seeking status into a degree-seeking program. Certain courses may have the requirement that the student come to the main campus for exams or laboratory participation.

For information concerning FEEDS, consult the UCF-FEEDS (<http://feeds.cecs.ucf.edu/>) catalog (published each semester) or contact the Director of UCF-FEEDS at (407) 823-2481.

## College of Health and Public Affairs

Drawing strength from its diversity, the College of Health and Public Affairs fosters excellence in graduate education, research and community service in health and public affairs, social and justice

services, and basic and applied life sciences. The college offers two doctoral programs, six master's programs and 16 certificate programs all of which are designed to be responsive to both community and global needs.

The college's mission is to develop the intellectual capabilities of its students through its commitment to broad-based community partnerships, focused research, professional development and training opportunities enabling graduates to prosper in a diverse, challenging and increasingly globally competitive work environment.

The college strives to provide graduate education that exceeds national standards while meeting the research and service needs of the local community. Departments and schools within the college provide professional education, emphasizing the relationship between policy, practice and the importance of research. By focusing on the development of critical thinking and problem-solving skills, students receive an education that prepares them for a lifetime of professional and personal achievement.

The College of Health and Public Affairs Office of Graduate Studies is dedicated exclusively to the support of graduate education in the college. Its mission is to assist departments and graduate program coordinators in providing high quality education to graduate students by facilitating leadership, curriculum development and graduate support in the college. It serves as a liaison between the programs in the college and the university's College of Graduate Studies and serves the needs of graduate students by providing a centralized source for support and advisement, record keeping, registration and graduation.

The college strongly encourages applications from minority and diverse populations. Race, national origin and gender are not used in the evaluation of students for admission into graduate and professional programs.

## College Administration

- J. Dorner, Interim Dean
- M. Rogers, Assistant Dean
- S. Holmes, Associate Dean
- P. Kirby, Associate Dean
- T. Wan, Associate Dean

## Faculty

## Communication Sciences and Disorders

*Chair of the Department:* R. J. Lieberman, Ph.D.

*Professors:* C. Nye, Ph.D.; D. Ratusnik, Ph.D.; J. Ryalls, Ph.D.; W. Secord, Ph.D.

*Associate Professors:* A. Brice, Ph.D.; C. Carson, Ph.D.; K. Rivers, Ph.D.; L. Rosa-Luga, Ed.D.; M. Vanryckeghem, Ph.D.

*Assistant Professors:* B. Ruddy, Ph.D.; J. Kent-Walsh, Ph.D.; J. Schwartz, Ph.D.; H. Utt, Ph.D.

*Instructors:* A. Barrett, M.A.; J. Di Napoli, M.A.; G. Drelinger, M.S.; C. Harvey, Ed.D.; J. Hostetker, M.A.; C. Parsons, M.A.; M. Riess, Au.D.; J. Whiteside, Ph.D.

### **Criminal Justice and Legal Studies**

*Interim Chair of the Department:* P. Griset, Ph.D.

*Professors:* B. Bohm, Ph.D.; D. Fabianic, Ph.D.; R. Surette, Ph.D.

*Associate Professors:* B. Applegate, Ph.D.; C. Bast, J.D.; P. Griset, Ph.D.; S. Holmes, Ph.D.; M. Lanier, Ph.D.; K. Lucken, Ph.D.; S. Mahan, Ph.D.; L. Ponte, Ph.D.; K. Reynolds, Ph.D.; L. Ross, Ph.D.; J. Sanborn, Ph.D.; R. Watkins, Ph.D.

*Assistant Professors:* S. Myers, Ph.D.; E. Paoline, Ph.D.; D. Slaughter, J.D.; R. Watkins; R. Wolf, Ed.D.; R. Wood, Ph.D.

*LS Internship Coordinator:* K. Cook, J.D., Instructor

*CJ Internship Coordinator:* M. Eastep, Ph.D., Instructor

*Instructors:* R. Cherry, J.D.; S. Craig, Ph.D.; J. Flagg, J.D.; M. Flint, M.S.; R. Ford, Ph.D.; P. Kirby, J.D.; A. Milon, J.D.; A. Novogroski, M.S.; J. Randall, M.S.; M. Ruiz, J.D.; C. Russo, M.S.; J. Scott, J.D.; M. Winton, Ph.D.

*Executive in Residence:* D. Ross, J.D.

### **Health Professions**

*Chair of the Department:* D. M. Jacobs, Ph.D., Professor

*Professors:* T. Angelopoulos, Ph.D.; M. Fottler, Ph.D.; A. Liberman, Ph.D.; T. Wan, Ph.D.

*Associate Professors:* S. Douglass, M.S.; T.

Edwards, Ed.D., RT(R); J. S. Lytle, M.S., M.P.H.; D. Oetjen, Ph.D.; T. Rotarius, Ph.D., M.B.A.; L. T. Worrell, M.P.H.; G. Smith, P.T., Ph.D.; L. Unruh, R.N., Ph.D.

*Assistant Professors:* J. Ludy, Ed.D.; K. Lee, Ph.D.; D. Malvey, Ph.D.; D. Segal, Ph.D.; A. Trujillo, Ph.D.; N. Zhang, Ph.D.

*Instructors:* A. Bertetta, M.A.; T. Falen, M.S.; S. Gosnell, M.S., R.T., (R) (CT) (AM) (MR); W. Hanney, DPT; M. McDonough, M.S., R.R.T.; A. Noblin; J. Pitts, M.S.; M. Salter, M.A.; K. Schellhase, M.Ed.; R. Wagner, M.S.P.T.; P. Welker, M.A., RT(R) (CT)

*Executive in Residence:* C. Pierce, M.G.A.

### **Public Administration**

*Chair:* M. Feldheim, Ph.D., Professor

*Professors:* P. Colby, Ph.D.; K. Liou, Ph.D.

*Associate Professors:* M. Feldheim, Ph.D.; J. Jurie, Ph.D.; W. Lawther, Ph.D.; X. Wang, Ph.D.

*Assistant Professors:* N. Kapucu, Ph.D.; R. Korosec, Ph.D.

*Instructor:* M. Rogers, M.P.A. (Assistant Dean); M. Collins, Ph.D.; R. Morin, M.P.A.

### **Public Affairs—Ph.D. Program**

*Director:* T. Wan, Ph.D.

*Chairs:* P. Griset, Ph.D., Professor; D.M. Jacobs, Ph.D., Professor; J.D. Leuner, Ph.D., Professor; J. Ranneau, Ph.D., Professor; M. A. Feldheim, Ph.D., Associate Professor

*Professors:* K. Adams, Ph.D.; M. Fottler, Ph.D.; A. Liberman, Ph.D.; K. Liou, D.P.A.; L. Maritn, Ph.D.; R. Surette, Ph.D.; M. Van Hook, Ph.D.; T. Wan, Ph.D.

*Associate Professors:* B. Applegate, Ph.D.; E. Brown, Ph.D.; J. Byers, Ph.D.; M. A. Feldman, Ph.D.; S. Holmes, Ph.D.; W. Lawther, Ph.D.; K. Reynolds, Ph.D.; X. Wang, Ph.D.

*Assistant Professors:* R. Korosec, Ph.D.; A. Trujillo, Ph.D.

### **School of Social Work**

*Director:* J. Ronneau

*Associate Professors:* E. Abel, Ph.D.; C. Green, Ph.D.; A. Leon, Ph.D.; P. Maiden Ph.D.; B. Turnage, Ph.D.

*Assistant Professors:* J. Allgood, Ph.D.; D. Gammonley, Ph.D.; M.B. Harris, Ph.D.; S. Lawrence, Ph.D.

*Instructors:* J. Davis, M.S.W.; L. Davis, M.S.W.; G. Jacinto, Ph.D.; R. Kohn, M.S.W.; M. Rothenberg, M.S.W.; M. Tingley-Winner, M.S.W.

## Degree Programs

### Doctor of Philosophy in Public Affairs

- Criminal Justice
- Health Services
- Public Administration
- Social Work

### Doctor of Physical Therapy

### Master of Nonprofit Management

### Master of Science

- Criminal Justice
- Health Sciences: Health Services Administration
- Health Sciences: Clinical and Lifestyle Sciences
- Physical Therapy

### Master of Arts in Communication Sciences and Disorders

### Master of Public Administration

### Master of Social Work

### Graduate Certificates

- Addictions
- Child Language Disorders
- Children's Services
- Corrections Leadership
- Crime Analysis
- Juvenile Justice Leadership
- Marriage and Family Therapy
- Medical Speech-Language Pathology
- Multicultural/Multilingual Speech-Language Pathology
- Nonprofit Management
- Police Leadership
- Public Administration
- School Social Work

- Social Work Administration
- Urban and Regional Planning
- Victims Assistance

## College of Nursing

The College of Nursing is the 12th college to be established at the university. It was established as a Department of Nursing and graduated its first class in 1981. The college has achieved prominence as an innovator in nursing education, responding to a changing population with complex health care needs. The faculty of the college values access to education and embrace opportunities to utilize advanced technology, innovation and creativity to provide graduates with the highest quality education at the baccalaureate, master's and doctoral levels.

Today's challenging health care environment provides unique opportunities for nursing. Nurses are needed more than ever to provide evidence-based patient care, serve in leadership roles, teach, engage in research, and in influence policy.

The mission of the College of Nursing is to provide excellence in nursing education, research and service to develop clinicians, leaders and scholars who promote the health of diverse populations at the local, state, national and international levels.

This mission is accomplished by:

- Focusing on vulnerable populations, innovative technology and health systems and policy
- Creating interdisciplinary and community partnerships
- Providing multi-modal, multi-site access for career advancement and professional development

## College Administration

*Dean:* J. D. Leuner, Ph.D., RN, Professor

## Faculty

*Professors:* J. Byers, Ph.D., RN, FAAN; A. Bushy, Ph.D., RN, CS, FAAN; K. Dennis, Ph.D., RN, FAAN; K. Dow, Ph.D., RN, FAAN; M. L. Sole, Ph.D., RN, CCNS, FAAN; D. Wink, Ed.D., ARNP

*Associate Professors:* J. Dorner, M.N., RN; J. Kijek, Ph.D., RN; L. Powell, Ph.D., RN; J. Ruland, Ph.D., RN

*Assistant Professors:* D. Andrews, Ph.D., RN; P.



Ark, Ph.D., RN; C. Blackwell, Ph. D., ARNP;  
M. Covelli, Ph.D., RN; L. Henning, Ed.D., RN;  
B. Mayer, Ph.D., ARNP; P. Robinson, Ph.D.,  
ARNP; E. Rash, Ph.D., ARNP; S. Talbert, Ph.D.,  
RN

*Visiting Assistant Professors:* P. Desmaris, Ph.D.,  
RN

## Degree Programs

### Doctor of Philosophy in Nursing

### Doctor of Philosophy in Nursing Practice

### Master of Science in Nursing

- Adult, Family, or Pediatric Nurse Practitioner
- Leadership and Management
- Clinical Nurse Specialist
- Nurse Educator
- Clinical Nurse Leader

### Graduate Certificates

- Adult Nurse Practitioner (post-master's)
- Clinical Nurse Specialist (post-master's)
- Family Nurse Practitioner (post-master's)
- Nursing Education
- Pediatric Nurse Practitioner (post-master's)

## College of Optics and Photonics

UCF's College of Optics and Photonics is one of the world's leading graduate institutions in optics and photonics education and research. The college offers a comprehensive interdisciplinary graduate program covering all aspects of optics, photonics, and lasers leading to master's and doctoral degrees in Optics. The Center for Research and Education in Optics and Lasers (CREOL) is integrated into the school as its research arm. The college has twenty-four full time faculty members and more than one hundred graduate students. It is housed in a state-of-the-art 82,000-sq. ft. building dedicated to optics research and education.

Faculty members from the College of Optics and Photonics are also the primary resource for the optical physics option in the M.S. and Ph.D. program in Physics and the electro-optics option in the M.S. and Ph.D. programs in Electrical Engineering. These two program options are offered in partnership with academic departments. The faculty participate in undergraduate and graduate teaching in the Physics, Electrical Engineering and Computer Science (EECS), Mechanical, Materials,

and Aerospace Engineering (MMAE), and Chemistry departments.

## College Administration

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David J. Hagan, Associate Professor and Associate  
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*Web address:* [www.creol.ucf.edu](http://www.creol.ucf.edu)

## Faculty

- Michael Bass, Emeritus Professor of Optics
- Glenn Boreman, Professor of Optics and EECS
- Bruce Chai, Professor of Optics, Physics and EECS and MMAE
- Demetrios N. Christodoulides, PREP Professor of Optics
- Peter Delfyett, Professor of Optics, EECS and Physics
- Dennis Deppe, FPCE Chair of Nanophotonics and Professor of Optics
- Aristide Dogariu, Professor of Optics
- David Hagan, Professor of Optics and Physics
- Aravinda Kar, Professor of Optics and MMAEM/li>
- Guifang Li, Professor of Optics, Physics and EECS
- M. G. "Jim" Moharam, Professor of Optics and EECS
- Martin Richardson, Northrop Grumman Chair, Professor of Optics, Physics and EECS
- Nabeel Riza, Professor of Optics and EECS
- George Stegeman, Cobb Family Chair and Professor of Optics, Physics and EECS
- William Silfvast, Emeritus Professor of Optics
- M. J. Soileau, Professor of Optics, EECS and Physics and VP for Research
- Eric Van Stryland, Professor of Optics, Physics and EECS
- Boris Zel'dovich, Professor of Optics and Physics
- Shin-Tson Wu, Provost's Distinguished Professor of Optics
- James Harvey, Associate Professor of Optics and EECS
- Patrick LiKamWa, Associate Professor of Optics and EECS
- Eric G. Johnson, Associate Professor of Optics
- Jannick Rolland, Associate Professor of Optics, EECS and Computer Science

- Pieter Kik, Assistant Professor of Optics
- Stephen Kuebler, Assistant Professor of Chemistry and Optics
- Winston Schoenfeld, Assistant Professor of Optics

### Research Faculty

- Leonid Glebov, Associate Research Scientist

### Joint Appointees

- Larry Andrews, Professor of Mathematics, EECS and Optics
- Kevin Belfield, Professor of Chemistry and Optics
- Luis Chow, Professor of MMAE and Optics
- Robert Peale, Associate Professor of Physics, EECS, and Optics
- Ronald Phillips, Professor of EECS, Mathematics and Optics
- Mubarak Shah, Professor of Computer Science and Optics
- Alfonse Shulte, Associate Professor of Physics and Optics
- Florencio Hernandez, Assistant Professor of Chemistry and Optics

### Programs

The College of Optics and Photonics offers master's (M.S.) and doctoral (Ph.D.) degree programs in optics for qualified applicants holding undergraduate degrees in optics, engineering, physics, or closely related fields.

The college offers more than twenty-five graduate courses in optics, with courses ranging from optical science to optical engineering. Thesis and dissertation research span the spectrum from basic science to prototype development. Current research areas include: linear and nonlinear guided-wave optics and devices, high speed photonic telecommunications, solid state laser development, nonlinear optics, laser-induced damage, quantum-well optoelectronics, photonic information processing, infrared systems, optical diagnostics, optical system design, image analysis, virtual reality, medical imaging, diffractive optics, optical crystal growth and characterization, high intensity lasers, x-ray optics, EUV sources, optical glasses, laser materials processing, free-electron lasers, and light matter interaction. These research programs are supported by research grants and contracts from numerous federal and state agencies and industry.

### Fellowships and Research Assistantships

College of Optics and Photonics/CREOL Fellowships, Litton Fellowships, NSF IGERT Fellowships, and graduate research assistantships, as well as other university awards, are available to qualified students. The stipend ranges from \$17,000 to \$25,000 per calendar year. Full tuition (both resident and nonresident portions), estimated at \$13,500 per year, is provided for students receiving graduate fellowships and research assistantships. Applications received after February 1, may not be considered. For more information about financial support available for graduate students, contact the College of Optics and Photonics (gradprog@mail.ucf.edu or www.creol.ucf.edu/) and UCF Graduate Studies (gradfellowship@mail.ucf.edu or www.graduate.ucf.edu).

### Rosen College of Hospitality Management

The hospitality industry currently represents the second largest employer in the United States and is a major part of the rapidly growing services sector of the economy. Because of its unique location in the premier tourist destination in the world, the Rosen College of Hospitality Management is ideally situated to prepare students for managerial careers in the hospitality industry. Whether the student is interested in entering lodging, food service, travel and tourism, financial management and technology, theme parks, vacation ownership resorts, or conventions and destination services management, the Orlando and central Florida area offers extraordinary opportunities. It is the destination for over 50 million tourists each year, has over 500 hotels with 115,000 rooms, 5,300 restaurants, and 95 theme parks and attractions. The industry employs nearly a million people in the state of Florida and many are in the central Florida area.

The educational mission of the college is to provide students with the knowledge, skills, and ability to identify opportunities and challenges in the hospitality industry, and to apply creative decision-making techniques in responding to those opportunities.

The degree is designed to prepare students for a broad range of managerial roles across the hospitality industry. It provides both academic preparation and practical experiences that students will need to enter and succeed in a hospitality

management career. Students also have the opportunity to experience the real-world hospitality work environment through extensive contact with leading hospitality managers in the central Florida area.

The college also houses the Dick Pope Sr. Institute for Tourism Studies, which was created and funded by the travel and tourism industry in central Florida. The institute conducts research and gathers information that helps the Orlando-area hospitality industry better understand and serve its many guests from around the world.

The Center for Multi-Unit Restaurant Management and the Darden Eminent Scholar Chair in Restaurant Management provides a unique focus on corporate restaurant management. Students have access through the Center to leading restaurant industry executives. This academic unit is an integral part of the Rosen College of Hospitality Management.

### College Administration

- Abraham Pizam, Dean, Rosen College of Hospitality Management, 9907 Universal Blvd, Suite 231H, Orlando FL 32819, (407) 903-8900
- Stephen LeBruto, Associate Dean, Rosen School of Hospitality Management, 9907 Universal Blvd, Suite 231F, Orlando FL 32819, (407) 903-8015

### Faculty

- Deborah Breiter, Ph.D.
- Po-Ju Chen, Ph.D.
- Robertico Croes, Ph.D.
- Robin DiPietro, Ph.D.
- William Fisher, Ph.D.
- Tadayuki Hara, Ph.D.
- Wilfried Iskat, Ph.D.
- Frank Juge, Ph.D.
- Hyung-il Jung, Ph.D.
- Tammie Kaufman, Ph.D.
- Stephen Lebruto, Ed.D., Associate Dean
- Ady Milman, Ph.D.
- Christopher Muller, Ph.D.
- Sandra Naipaul, Ph.D.
- Fevzi Okumus, Ph.D.
- Abraham Pizam, Ph.D., Dean
- Paul Rompf, Ph.D.
- Michael Scantlebury, Ph.D.
- Denver E. Severt, Ph.D.
- Dana V. Tesone, Ph.D.
- Randall S. Upchurch, Ph.D.
- Raymond Wang, Ph.D.

### Distinctive Benefits

- Access to the many hospitality organizations that serve one of the premier tourist destinations in the world.
- Extensive ties with the top leadership of the Orlando area hospitality industry.
- Scholarships made available through the generous support of the industry.
- A faculty committed to continuously improving their knowledge of the hospitality industry as well as their ability to teach that knowledge to their students.
- Work experience that provides students with "hands-on" experiences in the hospitality industry.
- Outstanding opportunities for internships.
- A modern food production laboratory and teaching restaurant completely equipped to provide students with experience in food preparation.
- American Resort Development Association (ARDA) Professorship of Resort Development.
- Central Florida Hotel and Lodging Association (CFHLA) Professorship of Convention and Conference Management.
- Hospitality Financial and Technology Professionals (HFTP) Professorship of Hospitality Financial Management and Technology.

### General Requirements

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. Please be sure to submit all requested material by the established deadline(s).

Admission to graduate study in the Rosen College of Hospitality Management is open to individuals with a bachelor's degree in any discipline from a regionally accredited college or university. Admission decisions will not be based on race, gender or ethnicity.

Admission is restricted each semester to individuals showing high promise of success in postgraduate studies. In addition to the requirements noted below, other indicators of promise include the applicant's extracurricular activities, work experience, job responsibilities, and leadership experience, which will be considered in making admissions decisions.

## College of Sciences

The College of Sciences consists of nine academic departments and one school, which offer graduate degree programs in Anthropology, Biology, Chemistry, Communication, Forensic Sciences, Mathematics, Physics, Political Science, Psychology, Sociology and Statistics. The College of Sciences also supports interdisciplinary programs in Biomolecular Science and Modeling and Simulation.

The mission of the College of Sciences Office of Graduate Services is to provide students, staff, and faculty with quality service and support to promote graduate education. This office is available as a resource to students and administrators from recruitment to degree completion; enhancing intellectual development and encouraging excellence in every student and graduate program.

The office:

- Advises graduate students in cooperation with programs;
- Provides advisement that is responsible, appropriate, and offered with confidence and integrity;
- Serves as a liaison between the university College of Graduate Studies and programs;
- Helps staff and faculty administer and develop graduate programs; and
- Oversees graduate education in the college to maintain academic standards and uphold UCF's graduate policies and regulations.

Student performance in graduate programs is monitored by the Graduate Services Office and a program of study GPA of 3.000 or better is required of all students.

Questions concerning university and college graduate policies affecting Sciences graduate students should be directed to the Office of Graduate Services in the College of Sciences: CSB 250  
(407) 823-6131  
cosgrad@mail.ucf.edu

## College Administration

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*Graduate web address:*  
[www.graduate.cos.ucf.edu](http://www.graduate.cos.ucf.edu)

The College of Sciences Dean's Office consists of the following:

- P. Panousis, Dean
- M. Johnson, Associate Dean
- J. McGuire, Associate Dean
- H. Sweet, Associate Dean

## Anthropology

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*Anthropology M.A. Graduate Program Director:*  
Tosha Dupras, Ph.D., PH 403, (407) 823-2227.

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*Associate Professors:* T. Dupras, Ph.D.; R. Howard, Ph.D.; E. Zorn, Ph.D.

*Assistant Professors:* S. Barber, Ph.D.; T. Matejowsky, Ph.D.; M. McIntyre, Ph.D.; J. Schultz, Ph.D. Ph.D.; J. Walker, Ph.D.

*Instructors:* V. Geiger, Ph.D.; G. Long, M.A.; P. Sinelli

## Biology

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*Professors:* D. Borst, Ph.D.; C.R. Hinkle, Ph.D.; A. Morrison-Shetlar, Ph.D., Dean of Undergraduate Studies; R.F. Noss, Ph.D.; J.A. Osborne, Ph.D.; H.C. Sweet, Ph.D., Associate Dean College of Sciences; J.F. Weishampel, Ph.D.; G. A. J. Worthy, Ph.D.

*Associate Professors:* J.E. Fauth, Ph.D.; D.G. Jenkins, Ph.D.; C. Parkinson, Ph.D.; M. Quigley, Ph.D.; L.H. Von Kalm, Ph.D.; L.J. Walters, Ph.D.; J. Waterman, Ph.D.

*Assistant Professors:* C. Calestani, Ph.D.; W. Crampton, Ph.D.; E. Hoffman, Ph.D.; J. Nadeau, Ph.D.; P. Quintana-Ascencio, Ph.D.; B. Von Holle, Ph.D.

*Instructors:* F.T. Logiudice, M.S.; W. Sotero, Ph.D.; P.S. Thomas, M.S.; R. Vajravelu, Ph.D.

*Courtesy Appointments:* K.S. Beach, Ph.D.; T. Bettinger, Ph.D.; J.K. Carlson, Ph.D.; C.B. Cook, Ph.D.; C.L. de la Rosal, Ph.D.; D.E. DeFreese, Ph.D.; M. Deyrup, Ph.D.; T.L. Dupras, Ph.D.; L.H. Herbst, Ph.D.; J. Drake, Ph.D.; R.O. Flamm, Ph.D.; S. Fullerton, B.S.; J. Mellen, Ph.D.; E. Menges, Ph.D.; E.J. Nolan, D.V.M.; D.K. Odell, Ph.D.; J. Ogden, Ph.D.; P.C.H. Pritchard, Ph.D.; W. Redfoot, M.S.; M.A. Stamper, D.V.M.; E.V. Valdes, Ph.D.; C.J. Wheaton, Ph.D.; B.E. Witherington, Ph.D.

## Chemistry

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*Forensic Science M.S.—Biochemistry Graduate Program Director:* Jack Ballantyne, Ph.D., CH 223, (407) 823-0163.

*Forensic Science M.S.—Forensic Analysis Graduate Program Director:* Michael Sigman, Ph.D., CH 328, (407) 823-2120.

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*Forensic Science Web address:* <http://reach.ucf.edu/~forensic>

*Computer Forensics Graduate Certificate Program Director:* Sheau-Dong Lang, CSB 203, (407) 823-2474. *Email:* [Lang@cs.ucf.edu](mailto:Lang@cs.ucf.edu)

*Emeritus Professors:* G. Baker, Ph.D.; G.N. Cunninghamman, Ph.D.; G. Hertel, Ph.D.; F.E. Juge, Ph.D.; B.C. Madsen, Ph.D.; G. Mattson, Ph.D.; W. McGee, Ph.D.

*Professors:* K.D. Belfield, Ph.D.; C.A. Clausen, Ph.D.; B.G. Fookes, Ph.D.; M.D. Hampton, Ph.D.; D.H. Miles, Ph.D.; O. Phanstiel, Ph.D.

*Associate Professors:* J. Ballantyne, Ph.D.; A. Campiglia, Ph.D.; S.R. Elsheimer, Ph.D.; C.L. Geiger, Ph.D.; Q. Huo, Ph.D.; F.B. Kujawa, Ph.D.; M.E. Sigman, Ph.D.

*Assistant Professors:* R. Blair, Ph.D.; D.J. Diaz, Ph.D.; A.J. Gesquiere, Ph.D.; F.E. Hernandez, Ph.D.; R. Igarashi, Ph.D.; S. Kuebler, Ph.D.; Y. Liao, Ph.D.; A.E. Masunov, Ph.D.; J.M. Perez, Ph.D.; S. Santra, Ph.D.; T. Selby, Ph.D.; L. Zhai, Ph.D.; S. Zou, Ph.D.

*Courtesy Appointments:* M.V. Bondar, Ph.D.

## Nicholson School of Communication

*Web address:* <http://communication.cos.ucf.edu/>

*Director of the School:* Mary Alice Shaver, Ph.D.

*Communication M.A. Graduate Program Director:* Burt Pryor, COMM 248, (407) 823-5670.

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*Emeritus:* M.D. Meeske, Ph.D. (Professor); T. O'Keef, Ph.D. (Professor); K.P. Taylor, Ph.D. (Professor); E. Wycoff, Ph.D. (Associate Professor)

*Professors:* R.H. Davis, Ph.D.; F.E. Fedler, Ph.D.; B. Pryor, Ph.D.; M. Shaver, Ph.D.; R.F. Smith, M.A.

*Associate Professors:* G.M. Bagley, M.A.; R.L. Barfield, Ph.D.; J.F. Butler, Ph.D.; D.E. DeLorme, Ph.D.; W.J. Hall, Ed.D.; J. Maunez-Cuadra, Ph.D.; M.C. Santana, Ph.D.

*Assistant Professors:* K. Akita, Ph.D.; T. Brown, Ph.D.; S.J. Collins, Ph.D.; R.E. Costain, Ph.D.; S.O. Hastings, Ph.D.; J. Katt, Ph.D.; R. Kenney, Ph.D.; J. Malala, Ed.D.; D. Shaver, Ph.D.; H.W. Weger, Ph.D.

*Instructors:* C. Bledsoe, M.A.; R. Brunson, M.A.; K. Depowski, M.A.; M. Dusseau, R. Graham, Ph.D.; C. Hanlon, M.A.; S. Hodgson, Ph.D.; S. Ihde, M.A.; J. McCain, M.A.; S. Neel, M.A.; S. Rice, M.A.; R. Sheehy, J. Sublett, M.A.; M. Wagner, M.S.; K. Workman, M.A.; D. Young, M.F.A.

*Lecturers:* T.O. Morgan, Ph.D.

## Mathematics

*Web address:* [www.math.ucf.edu/](http://www.math.ucf.edu/)

*Chair:* Piotr Mikusinski, Ph.D.

*Applied Mathematics M.S. and Mathematics Ph.D. Graduate Program Director:* Xin Li, MAP 207, (407) 823-5984.

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*Professors Emeritus:* L. Armstrong, Ph.D.; R. Brigham, Ph.D.; H. Sherwood, Ph.D.; M. Taylor, Ph.D.

*Professors:* L.C. Andrews, Ph.D.; J.R. Cannon, Ph.D.; S.R. Choudhury, Ph.D.; M. Ismail, Ph.D.; D. Kaup, Ph.D., Provost's Distinguished Research Professor; X. Li, Ph.D.; P. Mikusinski, Ph.D.; R.N. Mohapatra, Ph.D.; M.Z. Nashed, Ph.D.; M. Pensky, Ph.D.; J. Ren, Ph.D.; G.D. Richardson, Ph.D.; D. Rollins, Ph.D.; B.K. Shivamoggi, Ph.D.; K. Vajravelu, Ph.D.; J. Yong, Ph.D.

*Associate Professors:* J.M. Anthony, Ph.D.; J. Brennan, Ph.D.; R.M. Caron, Ph.D.; D. Han, Ph.D.; A. Katsevich, Ph.D.; H.M. Martin, Ph.D.; C.M. Schober, Ph.D.; A. Tovbis, Ph.D.; C.Y. Young, Ph.D.; Y. Zhao, Ph.D.

*Assistant Professors:* D. Dutkay, Ph.D.; J. Lee, Ph.D.; M-J. Ou, Ph.D.; Y. Qi, Ph.D.; M. Reid, Ph.D.; Z. Song, Ph.D.; Q. Sun, Ph.D.; J. Swanson, Ph.D.; A. Tamasan, Ph.D.

*Instructors:* M. Capursi, Ph.D.; L. Dunlop-Pyle, Ph.D.; B.J. Griffiths, M.S.; P. Higgins, M.S.; T. Muhs, M.S.

*Joint Appointees:* T. Clarke, Ph.D., Associate Faculty; R. Dutton, Ph.D., Computer Science; A.J. Kassab, Ph.D., Engineering; D.W. Nicholson, Ph.D., Engineering; R.L. Phillips, Ph.D., Engineering; M. Shah, Ph.D., Computer Science

## Physics

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*Physics M.S. and Ph.D. Graduate Program*

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*Professors Emeritus:* J. Brennan, Ph.D.; R. Llewellyn, Ph.D.

*Professors:* S.K. Bose, Ph.D.; H. Campins, Ph.D.; L. Chow, Ph.D.; M.D. Johnson, Ph.D., Assistant Dean of Graduate Studies, College of Sciences; W. Lou, Ph.D.; R.E. Peale, Ph.D.; T. Rahman, Ph.D.; H.P. Saha, Ph.D.; A. Schulte, Ph.D.; B.P. Tonner, Ph.D.

*Associate Professors:* A. Bhattacharya, Ph.D.; G. Braunstein, Ph.D.; D. Britt, Ph.D.; L. Chernyak, Ph.D.; A. Kara, Ph.D.; E. Martin, Ph.D.; E. Mucciolo, Ph.D.; S. Stolbov, Ph.D.

*Assistant Professors:* J. Colwell, Ph.D.; E. del Barco, Ph.D.; C. Efthimiou, Ph.D.; Y. Fernandez, Ph.D.; J. Harrington, Ph.D.; H. Heinrich, Ph.D.; M. Ishigami, Ph.D.; V. Kokoouline, Ph.D.; M. Leuenberger, Ph.D.; B. Roldan Cuenya, Ph.D.; P. Schelling, Ph.D.

*Affiliate Faculty:* M. Bass, Ph.D., Optics; G. Boreman, Optics; B.H.T. Chai, Ph.D.; K. Coffey, MMAE; P. delfyett, Ph.D., Optics; D.J. Hagan, Ph.D., Optics; M. Hickey, Physics, Embry Riddle Aeronautical University; J.J. Hickman, Ph.D., Director of Nanoscience Technology Center; A. Kar, Ph.D., Optics; P. Kik, Optics; G. Li, Ph.D., Optics; M.C. Richardson, Ph.D., Optics; G. Sellars, Optics; S. Shivamoggi, Ph.D., Mathematics; C. Siders, Optics; W.T. Silfvast, Ph.D., Optics; M.J. Soileau, Ph.D., Optics and Vice President for Research; G.I. Stegeman, Ph.D., Cobb-Hooker Eminent Scholar Chair of Optical and Laser Sciences and Engineering; E.W. Van Stryland, Optics; B. Zel'dovich, Ph.D., Optics

## Political Science

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*Professors:* T. Fine, Ph.D.; K. Hamman, Ph.D.; R. Handberg, Ph.D.; W. Morales, Ph.D.; P.H. Pollock, Ph.D.

*Associate Professors:* M. Dupuis, Ph.D., Assistant Dean for the Honor's College; A. Jewett, Ph.D.; D. Kiel, Ph.D.; J. Knuckey, Ph.D.; D.N. Lanier, J.D.; H. Sadri, Ph.D.; E. Vittes, Ph.D., Associate Dean and Director of Academic Services; B. Wilson, Ph.D.

*Assistant Professors:* A. Conroy, Ph.D.; C. Dolan, Ph.D.; D. Houghton, Ph.D.; P. Jacques, Ph.D.; H-M. Jaeger, Ph.D.; M. Kim, Ph.D.; B. Kinsey, Ph.D.; Q. Li, Ph.D.; S. Schraunfnagel, Ph.D.; K. Young, Ph.D.

## Psychology

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*Associate Chair:* Terri Hernandez, Ph.D.

*Clinical Psychology Ph.D. Graduate Program*  
*Director:* Deborah Beidel, PSY 250, (407) 823-3908.

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*Professors:* D. Beidel, Ph.D.; J. Cassisi, Ph.D.; R.L. Dipboye, Ph.D.; R.D. Gilson, Ph.D.; T. Hickey, Ph.D., Provost; J.C. Hitt, Ph.D., President; P.A. Hancock, Ph.D., Distinguished Research Professor; J.M. McGuire, Ph.D., Associate Dean College of Sciences; M. Mouloua, Ph.D.; R. Pritchard, Ph.D.; M.D. Rapport, Ph.D.; E.J. Rinalducci, Ph.D.; E. Salas, Ph.D., Trustee Chair; A.Y. Wang, Ph.D., Dean Honors College

*Associate Professors:* S. Berman, Ph.D.; M.E. Dunn; S.T. Dunn; R.D. Fisher, Ph.D.; B.A. Fritzsche, Ph.D.; B.J. Jensen, Ph.D., Director Eastern Region Area Campuses; F. Jentsch, Ph.D., Director Team Performance Laboratory; C. Negy, Ph.D.; K. Renk, Ph.D.; V. Sims, Ph.D.; J.A. Smither, Ph.D.; W. Wooten, Ph.D.

*Assistant Professors:* J. Bedwell, Ph.D.; L. DeChurch; M. Lavooy, Ph.D.; H. Le, Ph.D.; K. Smith-Jentch, Ph.D.; J. Szalma, Ph.D.

*Instructors:* C. Cox, M.A.; T. Hernandez, M.A., Associate Chair; K. Mottarella, Psy.D.; P. Reynoso, Ph.D.; S. Whitten, Ph.D.

*Lecturers:* C. Azimi, Ph.D.; J. Brophy, Ph.D.; M. Chin, Ph.D.; H. Fouty, Ph.D.; S. Ghaisinejad, Ph.D.; A. Janowsky, Ph.D.; M. Kennerley, Ph.D.; R. Kennerley, Ph.D.; D. McConnell, Ph.D.; E. Murdoch, Ph.D.; C. Sager, Ph.D.; W. S. Saunders, Psy.D.; S. Simpson, Ph.D.

## Sociology

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*Professors Emeritus:* B. Wright, Ph.D.

*Professors:* P. Canan, Ph.D.; J. Corzine, Ph.D.; E. Grauerholz, Ph.D.; J.D. Wright, Ph.D.

*Associate Professors:* I.J. Cook, Ph.D.; T. Dietz, Ph.D.; D.A. Gay, Ph.D.; L. Huff-Corzine, Ph.D., Assistant Vice President Academic Affairs; J. Jasinski, Ph.D.; J.P. Lynxwiler, Ph.D.; B. Marshall, Ph.D.; J. Morris, Ph.D.; E. Mustaine, Ph.D.

*Assistant Professors:* N. Barret, Ph.D.; J.S. Carter, Ph.D.; J. Ford, Ph.D.; W. Goldstein, Ph.D.; F. Rivera, Ph.D.; E. Sikorska-Simmons, Ph.D.

*Instructors:* L. Moore, M.A.

Statistics and Actuarial Science

*Web address:* <http://statistics.cos.ucf.edu>

*Interim Chair of the Department:* David Nickerson, Ph.D.

*Statistics M.S. Graduate Program Director:* James R. Schott, Ph.D., CCII 205, (407) 823-2797.

*Graduate Program E-mail:* [statgrad@pegasus.cc.ucf.edu](mailto:statgrad@pegasus.cc.ucf.edu)

*Professors Emeritus:* A. Dutton, Ph.D.; B. Ostle, Ph.D., P. Somerville, Ph.D.

*Professors:* M.E. Johnson, Ph.D.; J.R. Schott, Ph.D.; M. Wang, Ph.D.

*Associate Professors:* D. Nickerson, Ph.D.; X. Su, Ph.D.; N. Uddin, Ph.D.

*Assistant Professors:* R. Carta, Ph.D.; G. Gau, Ph.D.; Z. Han, Ph.D.; E. Maboudou-Tchao; M. Modisett, Ph.D.; L. Ni, Ph.D.

*Instructors:* C.E. Cutchins, M.S.; J. Pepe, M.S.; S.C. Schott, M.S.

## Programs

### Doctor of Philosophy

- Biomolecular Sciences
- Chemistry
- Conservation Biology--Ecology and Organismal Track and Applied Conservation Biology Track
- Mathematics
- Modeling and Simulation
- Physics
- Psychology—Applied Experimental and Human Factors Psychology Track, Clinical Psychology Track, and Industrial and Organizational Psychology Track
- Sociology

### Master of Science

- Biology
- Forensic Science—Forensic Biochemistry Track and Forensic Analysis Track
- Industrial Chemistry
- Industrial and Organizational Psychology
- Mathematical Science—General and Industrial Mathematics Track
- Modeling and Simulation
- Physics
- Statistical Computing—General, Actuarial Science Track and Data Mining Track

### Master of Arts

- Anthropology—Archaeological Investigations in Forensics and Human Adaptations Track, Cultural Competence in the Professions Track, and Maya Studies Track
- Clinical Psychology
- Communication—Interpersonal Track and Mass Communication Track
- Political Science—Environmental Politics Track, International Studies Track, Political Analysis and Policy Track
- Sociology, Applied—General and Domestic Violence Track

### Graduate Certificates

- Applied Mathematics
- Computer Forensics
- Conservation Biology
- Domestic Violence
- Maya Studies
- SAS Data Mining

### General Requirements

The course work and research requirements of the programs are designed with the intent of offering students the opportunity for educational advancement and professional training. A research report, thesis, or dissertation is required in most of the programs and is an option in others. The General Graduate Record Examination is required for admissions consideration in all graduate programs. Meeting minimum UCF admission criteria does not guarantee program admission. Admission to graduate programs is based upon an evaluation of the applicant's abilities, past performance, recommendations, match of the program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree. The college strongly encourages applications from minority and diverse populations.



Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Each department is headed by a chair and the School of Communication is headed by a director who reports to the dean of the college. A graduate program director or coordinator is designated for each graduate program and can provide advice on questions about admission and degree requirements. Consult the individual degree program listings for detailed descriptions of admission requirements, degree requirements, and courses.

## Modeling and Simulation Program

### Faculty

- Mohamed A. Abdel-Aty, Civil and Environmental Engineering
- Ibrahim Ahmad, Statistics and Actuarial Science
- Haitham M. Al-Deek, Civil and Environmental Engineering
- Robert Armacost, Industrial Engineering and Management Systems
- Christian Bauer, Electrical and Computer Engineering
- Joseph S. Berrios, Electrical and Computer Engineering
- Clint Bowers, Psychology
- Shawn Burke, Institute for Simulation and Training
- John R. Cannon, Mathematics
- Jan Cannon Bowers, Institute for Simulation and Training
- Robert C. Brigham, Mathematics
- S. Roy Choudhury, Mathematics
- Thomas Clarke, Institute for Simulation and Training
- C. David Cooper, Civil and Environmental Engineering
- Lesia Crumpton-Young, Industrial Engineering and Management Systems
- Steve Fiore, Psychology and the Institute for Simulation and Training
- Michael Georgiopoulos, Electrical and Computer Engineering
- Ian Gibson, Digital Media
- Richard Gilson, Psychology
- Avelino A. Gonzalez, Electrical and Computer Engineering
- Peter Hancock, Psychology
- Charles Hughes, Computer Science
- Bala Jaganathan, Institute for Simulation and Training
- Mortaza Jamshidian, Statistics and Actuarial Science
- Mark E. Johnson, Statistics and Actuarial Science
- Michael Johnson, Physics
- David Kaup, Mathematics and the Institute for Simulation and Training
- Robert Kenny, Digital Media
- J. Peter Kincaid, Institute for Simulation and Training
- Harold Klee, Electrical Engineering and Computer Science
- Sheau-Dong Lang, Computer Science
- Xin Li, Mathematics
- Kuo-Chi (Kurt) Lin, Institute for Simulation & Training
- Mansooreh Mollaghasemi, Industrial Engineering and Management Systems
- J. Michael Moshell, Digital Media and Computer Graphics
- Mustapha Mouloua, Psychology
- Swami Muthusamy, Florida Solar Energy Center
- David M. Nickerson, Statistics and Actuarial Science
- Gary Orwig, Education
- Marianna Pensky, Mathematics and Statistics and Actuarial Science
- Julia Pet-Armacost, Industrial Engineering and Management Systems
- Michael Proctor, Industrial Engineering and Management Systems
- Essam Radwan, Civil and Environmental Engineering
- Charles Reilly, Industrial Engineering and Management Systems
- Edward Rinalducci, Psychology
- Jannick Rolland, Center for Research and Education in Optics and Lasers and Engineering and Computer Science
- David Rollins, Mathematics
- Eduardo Salas, Psychology and the Institute for Simulation and Training
- Guy Schiavone, Computer Engineering and the Institute for Simulation and Training
- James R. Schott, Statistics and Actuarial Science
- Jose Sepulveda, Industrial Engineering and Management Systems
- Randall Shumaker, Institute for Simulation and Training
- Valerie Sims, Psychology

- Janan Smither, Psychology
- Kay Stanney, Industrial Engineering and Management Systems
- Chris Stapleton, Institute for Simulation and Training
- Xiaogang Su, Statistics and Actuarial Science
- Alex Tovbis, Mathematics
- Nizam Uddin, Statistics and Actuarial Science
- Morgan C. Wang, Statistics and Actuarial Science
- John Weishampel, Biology
- Gary Whitehouse, Industrial Engineering and Management Systems
- Kent Williams, Industrial Engineering and Management Systems
- Jeff Wirth, Digital Media
- Huaxin You, Statistics and Actuarial Science
- Ying Zhang, Statistics and Actuarial Science
- Luis Rabelo, Industrial Engineering and Management Systems
- Brian Goldiez, Institute for Simulation and Training
- James Coutney, Management Information Systems
- Atsusi Hirumi, Instructional Technology/Media
- Christopher Geiger, Industrial Engineering and Management Systems
- James Szalma, Psychology

## SPECIAL ACADEMIC PROGRAMS

- ◇ Center for Applied Human Factors in Aviation (CAHFA)
- ◇ Experiential Learning
- ◇ Center for Economic Education
- ◇ Dick Pope, Sr. Institute for Tourism Studies
- ◇ Division of Continuing Education
- ◇ Executive Development Center
- ◇ Florida Institute of Government at the University of Central Florida
- ◇ Florida Space Institute (FSI)
- ◇ Institute of Statistics and Data Mining
- ◇ Institute for Technical Documentation
- ◇ Oak Ridge Associated Universities (ORAU)
- ◇ Office of International Studies
- ◇ Small Business Development Center (SBDC)

### Center for Applied Human Factors in Aviation (CAHFA)

*Director and Chief Scientist:* Dr. Mustapha Mouloua, (407) 823-2216

The Center for Applied Human Factors in Aviation (CAHFA) has as its mission the enhancement of safety in the nation's airspace system through applied human factors research, systems design, and training strategies. Chartered in 1990, CAHFA is a research consortium established between UCF and Charter partner Embry-Riddle Aeronautical University, Daytona Beach, Florida. CAHFA's professional staff maintains offices on both campuses. The complimentary strengths of the two universities are combined to create a research resource that is without peer for solving aeronautical human factors problems. CAHFA research initiatives are targeted to significantly reduce human factors related accidents and incidents by determining the efficacy of and by developing strategies for achieving improvements in human performance.

### Experiential Learning

*Director:* Dr. Sheri Dressler, HPH 208, (407) 823-2667  
*Web address:* [www.coop.ucf.edu/](http://www.coop.ucf.edu/)

The office of Experiential Learning develops and supports experiential learning opportunities to provide real-world work experience for UCF students. This usually takes the form of Cooperative Education experiences, internships and service-learning. Cooperative Education (Co-op) is an academic program that allows students to apply classroom theory in practical work settings and gain personal, academic and work skills over multiple semesters. The mission of the program is: 1) to assure that all UCF students have quality experiential learning opportunities before they graduate; and 2) to create meaningful and productive educational partnerships with academic departments and employers locally, nationally, and internationally.

Co-op students participate for multiple terms in structured, progressively responsible, paid work assignments in an industry that is structured for learning and directly related to their major or career goal. They alternate periods of work and study, either by alternating full-time semesters of work and school, or working part time while studying full time. Co-op provides a means for students to test career goals, improve academic performance, apply classroom content in real-world settings, develop discipline-related personal and professional skills, generate income, and increase prospects for full-time employment upon graduation.

Experiential Learning also supports internships in collaboration with academic departments. Internships are major-related work experiences that provide similar benefits to co-op opportunities, but generally are one term in length and occur toward the end of a student's academic program.

Service-Learning is a teaching method that uses community involvement to apply theories or skills being taught in a course. Service-learning furthers the learning objectives of the academic course, addresses the needs of the community, and requires students to reflect on their activity in order to gain an appreciation for the relationship between civics and academics.

### **Center for Economic Education**

*Director:* Dr. Robert L. Pennington, BA2-303B,  
(407) 823-2640

*Web address:* [www.bus.ucf.edu/cee/](http://www.bus.ucf.edu/cee/)

The Center for Economic Education strives to increase public knowledge of economic principles and their applications in daily life. Researchers at the Center develop, collect, and distribute economic educational materials. They also consult with and provide instruction to area schools (K-12), community colleges, and community organizations. Instruction focuses on the principles of economics and their use in making rational economic decisions. Affiliated with the National Council on Economic Education, the Center also conducts research in economic education.

### **Dick Pope, Sr. Institute for Tourism Studies**

*Director:* Dr. Abraham Pizam, RCH 231H, (407)  
903-8010

The mission of the Dick Pope Sr. Institute for Tourism Studies is to improve the quality of the tourism product and increase the benefits of tourism for the industry, the state, and the local community. The Institute is involved in a variety of research and public awareness projects and educational programs.

The Institute's research includes the collection, development, and dissemination of information relevant to the tourism and hospitality industry in the areas of marketing, consumer behavior and visitor satisfaction, feasibility, economic, motivation, and forecasting. Some of the Institute's

patrons include tourism promotion agencies at the state and local levels; tourism development commissions; professional associations; and private enterprises such as attractions, hotels, motels, food-service establishments, ground and air transportation companies, travel agencies and tour operators, and other related businesses. The Institute devotes significant efforts to educating the public about the tourism industry in Florida and internationally, and about the industry's contribution to the social and economic welfare of the general public.

### **Division of Continuing Education**

*Assistant Vice President and Director:* Dr. J. Patrick Wagner, University Tech Center, Suite 390  
(407) 882-0260 or toll free (866) 232-5834  
*Web address:* [www.ce.ucf.edu](http://www.ce.ucf.edu)

The Division of Continuing Education at UCF is the unit within Academic Affairs that coordinates, in collaboration with the colleges, all UCF continuing education activity. Programs include non credit courses and programs including conferences, institutes, short courses, workshops, seminars, and camps. Many of these programs are awarded Continuing Education Units (CEUs), when managed through the Division.

### **Off-Campus Credit Programs**

(407) 882-0260

*Web address:* [www.ce.ucf.edu/sacs/occp.asp](http://www.ce.ucf.edu/sacs/occp.asp)

This unit of the Division of Continuing Education provides support for UCF's colleges and academic departments that schedule courses and degree programs off campus at various area businesses and governmental agencies. Registration may be conducted on-site or via the web for convenience of the participants. Registration for off-campus or open enrollment courses **does not** constitute admission to the university. Students interested in applying for such courses as credit toward graduate certificate or degree programs must complete application for admission to the university as a nondegree (postbaccalaureate) or regular, degree-seeking student. These applications are available online at [www.graduate.ucf.edu/gradonlineapp/](http://www.graduate.ucf.edu/gradonlineapp/).

### **Center for Multilingual Multicultural Studies**

*Director:* Myrna Creasman, Bldg 81,  
(407) 823-5515

*Web address:* [www.cmms.ucf.edu/news.php](http://www.cmms.ucf.edu/news.php)

Using contemporary teaching methodology and computer-assisted instruction, the Center for Multilingual Multicultural Studies provides English language instruction for international students. Four levels of instruction are offered, ranging from beginning to advanced, and special attention is given to preparing students for academic course work in their specialized fields of study. Full-time students enrolled at the advanced level may elect to take courses as non-degree-seeking students while enrolled in the Intensive English program. Students are required to take an entry placement test to determine their level of proficiency. Student (F-1) visas are extended to qualified applicants. The Center also offers English for Special Purposes for international business personnel.

The Center for Multilingual Multicultural Studies at UCF is accredited by the Commission on English Language Program Accreditation (CEA) and agrees to uphold the standards for English Language Programs.

### **Executive Development Center**

*Director:* Dr. Jai Ganesh, (407) 823-3153

The University of Central Florida College of Business Administration is proud to serve as a partner in executive education to the local, state, national, and international business communities. The Executive Development Center was established to provide leading executive education programs to both individuals and organizations.

The Center helps professionals from all industries become more dynamic leaders, more effective managers, and more valuable team members. Corporations benefit from participating in executive education programs by developing more productive and resourceful workforces that can meet the challenges of today's changing marketplace and tomorrow's opportunities.

The Center serves as a valuable resource in executive training and development by offering programs that address critical issues for managers and business leaders. These programs are offered in a variety of formats suitable for any individual or corporation through:

- Conference services
- Customized corporate programs
- Executive MBA Program

- Professional MBA Program
- Public enrollment programs
- International seminars and exchange programs

The UCF Executive Development Center has a strong commitment to the business community. Both small and large organizations find our programs to be contemporary, challenging, and effective.

### **Florida Institute of Government at the University of Central Florida**

*Director:* Marilyn Crotty, (407) 317-7745

The Institute of Government, an affiliate of the Florida Institute of Government, is part of the College of Health and Public Affairs and provides training and technical assistance to state and local government, governmental associations, and non-profit organizations. Training workshops, certification programs, conferences, seminars, applied research projects, citizen surveys, strategic planning, and organizational development programs are among the services offered by the Institute.

### **Florida Space Institute (FSI)**

*Acting Director:* Dr. Jaydeep Mukherjee, FSI, Kennedy Space Center, FL 32899, (321) 452-4301

E-mail: [fsiccas@mail.ucf.edu](mailto:fsiccas@mail.ucf.edu)

Web address: <http://fsi.ucf.edu>

The Florida Space Institute (FSI) offers a unique approach to space education and research. Recognizing the substantial investment in launch facilities and human resources in central Florida, the institute merges industry, education, and research in a real-world environment. Created by a formal agreement among Brevard Community College, Embry Riddle Aeronautical University, Florida Institute of Technology, NASA-sponsored Florida Space Grant Consortium, Florida Space Authority (FSA), and the University of Central Florida, FSI brings a permanent academic presence to the space center. As the "gateway to the universe" FSI provides space education and research to undergraduate and graduate students at the USAF Cape Canaveral Air Station.

FSI research involves undergraduate and graduate students in real space problems within the existing space industry environment of the space center. This environment permits students and faculty to

interact with space center engineers and to use the facilities of the space center. FSI research projects are primarily conducted in its facilities at the Cape Canaveral Air Force Station. Other facilities at Kennedy Space Center are used as needed. Research projects conducted by the FSI university/college partners on their respective campuses are considered "normal" proprietary projects of that particular university/college even though the project may be space related.

### **Institute of Statistics and Data Mining**

*Associate Director:* Nizam Uddin, (407) 823-2692  
*Web address:* <http://statistics.cos.ucf.edu/consultingnew.htm>

The Institute of Statistics and Data Mining provides statistical consulting support to graduate students, staff and faculty members in all stages of their research projects. The Institute's services include, but are not limited to, design of experiments and surveys, determination of sample sizes, formulation of hypotheses, selection of appropriate analysis using a variety of software packages, interpretation and evaluation of statistical results, preparation of statistical reports, and writing statistical methods and data analyses sections of research grant proposals as well as data management through the data mining lab. The Institute's faculty members are available to work as co-investigators or statistical consultants into clients' grant proposals. The Institute also provides statistical support to various government agencies and private organizations. Visit the website for a brief description of consulting activities of the Institute and research expertise of faculty members. The Institute offers one free consulting session to Ph.D. graduate students. The consulting service is available to faculty members working on funded projects for a modest fee.

### **Institute for Technical Documentation**

*Director:* Karla Saari Kitalong, CNH 307E, (407) 823-6257

The Institute for Technical Documentation offers a variety of services for client companies, including developing original technical documentation, translating documentation written in other languages, and providing seminars to assist clients

in writing their own documentation. The Institute also provides seminars on writing more effective e-mail, memos, letters, policies and procedures, manuals, and reports. Experienced faculty, established facilities, and strong rapport with local industry enable the Institute to assist in a wide variety of documentation projects and services.

### **Oak Ridge Associated Universities (ORAU)**

*President and ORAU Councilor for University of Central Florida:* John C. Hitt  
*ORAU Corporate Secretary:* Monnie E. Champion, (865) 579-3306  
*Web address:* [www.orau.org](http://www.orau.org)

Since 1989, students and faculty of the University of Central Florida have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 91 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Throughout the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *ORISE Catalog of Education and Training Programs*, which is available at <http://www.orau.gov/orise/educ.htm>.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances

among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research and support programs as well as services to chief research officers.

## Office of International Studies

*Assistant Vice President for International and Interdisciplinary Studies:* Dr. Diane Z. Chase,  
Research Pavilion, Suite 395, (407) 882-2300  
Web address: [www.international.ucf.edu](http://www.international.ucf.edu)

The Office of International Studies (OIS) is a University level office that serves as a clearinghouse for all international programs and coordinates such programs within the University. The mission of the OIS is to create an environment that facilitates the identification, development, promotion, coordination, and support of high quality international activities related to the academic mission of UCF. The on-going development of the international dimension at UCF will be realized through the implementation of goals and objectives related to the curriculum, faculty development, policies and planning, academic support, students, the community, funding, and external agencies.

Central to the global mission at UCF is an ongoing program of international grants and development projects. The OIS secures, through external funding agencies, the resources necessary for faculty and curriculum development, joint research projects, and partnership programs.

## Small Business Development Center (SBDC)

*Interim Director:* Eunice Choi, 315 E. Robinson St.  
Suite 100, (407) 420-4850

The Small Business Development Center (SBDC) is part of a statewide organization designed to promote economic development by responding to the needs of the small business community. The SBDC, as part of the College of Business Administration at the University of Central Florida, is responsible for a geographic area including Orange, Osceola, Lake, Citrus, Volusia, Flagler, and Sumter counties. Regional centers located at Daytona Beach Community College, Brevard Community College, and Seminole Community College assist small

business in those areas. Assistance is provided through workshops and individual counseling in the following areas:

- Accounting
- Finance
- Marketing
- Operations
- New Venture Planning
- Technical Assistance

## ABOUT THE GRADUATE CATALOG

- ◇ Graduate Catalog Revision
- ◇ Archiving of the Graduate Catalog

The Graduate Catalog is published by the College of Graduate Studies and is the authoritative source for information regarding UCF graduate degree and certificate programs, admission requirements, and graduate policies and procedures for the academic year of publication. Beginning with the 2002-2003 Graduate Catalog, the catalog is published solely online and the online version is the official source of graduate information.

## Graduate Catalog Revision

In collaboration with the colleges and schools, the College of Graduate Studies revises the catalog each year and in May or June publishes the new catalog for the coming academic year (e.g., the 2008-2009 graduate catalog applies to Summer 2008, Fall 2008, and Spring 2009). The Admission, Policies, Academic Programs, and Courses sections are considered the UCF graduate curriculum record and are archived as published for each academic year. These sections serve as key resources throughout a student's graduate study.

As new degree and certificate programs are approved, they may be added to the current graduate catalog. Each addition will include a statement at the beginning of the program information describing the effective date of the new program. Other sections of the catalog may be updated throughout the year to add or refresh information, including the UCF Opportunity, About UCF, Admissions and Registration, and Financial Information. Check the **What's New** section for important additions to the catalog during the academic year.

## Archiving of the Graduate Catalog

The College of Graduate Studies ([www.graduate.ucf.edu](http://www.graduate.ucf.edu) and [www.graduate.ucf.edu/catalog](http://www.graduate.ucf.edu/catalog)) and UCF Home ([www.ucf.edu/catalog](http://www.ucf.edu/catalog)) provide public access to archived copies of the online graduate catalog.

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# College of Graduate Studies

- ◇ Mission Statement
- ◇ College of Graduate Studies Administration
- ◇ Office of Graduate Admissions and Student Services
- ◇ Office of Graduate Financial Assistance and Publications
- ◇ Office of Graduate Recruiting
- ◇ Graduate Council
- ◇ College Graduate Coordinators
- ◇ Graduate Program Directors

The College of Graduate Studies is responsible for providing leadership and vision for graduate education at the University of Central Florida. Program quality, graduate admissions, recruiting, enrollment management, student services and records, financial support, policies, appeals, program development and review, benchmarking, and completion of graduate degrees are important concerns of the College.

Working in conjunction with the Faculty Senate Committees and the college and graduate program coordinators, UCF Graduate Studies is responsible for developing university-wide graduate plans and policies, coordinating graduate activities, distributing tuition support and fellowships to the colleges, facilitating the adoption of new graduate programs, coordinating the recruitment of graduate applicants, and admitting graduate students to the university. Students apply to the university through the Office of Graduate Admissions and Student Services. Admission decisions are made by the colleges, schools and departments. Any policy questions about graduate issues should be directed to the College of Graduate Studies or the Graduate Council. Questions about operational procedures should be directed to individual college or graduate program coordinators or to the College of Graduate

Studies.

## MISSION STATEMENT

**The UCF College of Graduate Studies provides leadership and services to create high-quality learning environments for graduate students.**

### About Our Mission

UCF Graduate Studies is an advocate for graduate education, working to mobilize and arrange the resources needed for enrollment and program growth. We track and analyze emerging trends and changes in graduate education, both nationally and with our peer institutions, and provide support and guidance for interdisciplinary and cooperative programs. We are mindful of the need to retain the academic values of the graduate programs while acting as a partner in the social and economic well being of the community and state.

We collaborate with the faculty to develop policies and best practices that further the high academic standards and excellence of our graduate programs. We are client-centered, focused on providing the information and services that students need to enhance their experience with UCF and that faculty and staff need to effectively carry out their responsibilities to students. Cooperation with colleges, graduate programs, institutes and centers, administrative offices, and support services is emphasized to provide an excellent experience for our graduate students from inquiry to graduation.

Through its primary activities, programs and services, UCF Graduate Studies contributes to program development and growth, enrollment management and recruiting, enhanced infrastructure and technological support for our graduate students and programs, and quality student support services for a diverse and talented graduate student population.

## COLLEGE OF GRADUATE STUDIES ADMINISTRATION

Vice Provost and Dean	Patricia J. Bishop
Senior Associate Dean	Max Poole
Associate Dean	Michael Stern
Executive Director, Graduate Studies and International Services Center	Tracy R. Jones
Director, International Services Center	Nataly Chandia

Director, Office of Graduate Financial Assistance and Publications	Debra Winter
Associate Director, Student Services and Records	Dore M. Carter
Associate Director, Graduate Admissions	Barbara Rodriguez
Assistant Director, Graduate Recruiting	Nicole Marsh

## Office of Graduate Admissions and Student Services

The Office of Graduate Admissions and Student Services guides students through the graduate application and admissions processes for those enrolled in graduate degree and certificate programs and students taking graduate courses in a nondegree status.

This office also works with the graduate programs, colleges, and graduate students, and provides academic services to current students from the time they are admitted until they graduate. The mission of our student services office is to enhance the quality and visibility of graduate education at UCF and to facilitate the academic success of our graduate students.

## Office of Graduate Financial Assistance and Publications

Graduate Financial Assistance assists students in applying for fellowships and in identifying other sources of financial support for graduate study. This office also oversees graduate tuition support, financial processing for fellowships, and processing of Graduate Teaching contracts and assessments. The Thesis and Dissertation office assists graduate students through format review and final submission of their thesis and dissertation documents. This office also develops and maintains the Graduate Catalog, websites, and other published materials for the College of Graduate Studies and International Services Center.

## Office of Graduate Recruiting

UCF Graduate Studies develops and implements a university recruiting plan. It also provides the colleges and programs with guidance, resources, and assistance in regard to the recruitment of graduate students. The focus of these efforts is to help meet university goals related to enrollment

management and the achievement of a diverse and talented graduate student population.

In addition, this office supports the Recruiting and Retention Enhancement Program that awards individual graduate programs the opportunity to develop recruiting plans and to implement them.

## GRADUATE COUNCIL

The Graduate Council is a standing committee of the Faculty Senate and reports to the Senate on graduate policy and curriculum matters. The Graduate Council deals with policy issues and standards for the university. New graduate program requests, changes to existing graduate programs, additions, deletions and modifications to graduate courses, and new policies or changes to existing graduate policies are initiated and reviewed by the Graduate Council. New graduate program requests require final approval by the Board of Trustees, and approval for doctoral programs is required from the Florida Board of Governors. The Graduate Council has three subcommittees that examine and formulate policies and procedures, hear petitions for variances from graduate programs, college, or university requirements, and review new graduate program requests, changes to existing graduate programs, additions, deletions and modifications to graduate courses, among other matters. Each subcommittee consists of four senate members and at least three non-senate members.

## Duties of the Graduate Council

1. Reviews and recommends university-wide graduate policies and standards.
2. Reviews all new proposals for planning and implementation of graduate programs, including deletion of existing programs.
3. Reviews all matters referred by the Graduate Council subcommittees.
4. Transmits its recommendations to the Faculty Senate Steering Committee, which normally submits these recommendations to the College of Graduate Studies on behalf of the Provost.

## Policy Subcommittee

1. Examines existing policies and procedures and recommends new policies and procedures with regard to graduate education, including but not



limited to policies and procedures affecting admissions, academic progress, and financial support for graduate students.

2. Reviews all matters referred by the Graduate Council.
3. Transmits its recommendations to the Faculty Senate Steering Committee.

### **Appeals and Awards Subcommittee**

1. Hears petitions for variances from graduate program, college, or university requirements for graduate nondegree, certificate, or degree program students at the university or applicants to graduate programs. A student petition is considered when the department and college have reviewed the request and denied the petition or when the student is requesting an exception to university policies or regulations. Applicant petitions are considered upon request of the applicant when the program has reviewed an appeal of an admissions decision and denied admission.
2. Recommends approval or denial of appeals or petitions to the Vice Provost and Dean of Graduate Studies, who will notify the student, department, and college of the action.
3. Hears all requests from graduate program coordinators for exceptions to graduate policies and procedures.
4. Reviews nominees for the University Excellence in Graduate Teaching and makes recommendations to the Vice Provost and Dean of Graduate Studies.
5. Reviews nominees for the Award for Excellence by a Graduate Teaching Assistant, the Award for Excellence in Graduate Student Teaching, the Award for Outstanding Master's Thesis, and the Award for Outstanding Dissertation.
6. Monitors graduate program quality and makes recommendations to the Graduate Council.
7. Reviews all matters referred by the Graduate Council.

### **Graduate Curriculum Subcommittee**

1. Reviews curricular issues related to graduate

education.

2. Reviews proposals for new graduate programs and deletion of existing programs.
3. Reviews proposals for changes to existing graduate programs (such as hours, thesis/non-thesis options) and makes recommendations to the Vice Provost and Dean of Graduate Studies.
4. Reviews proposals for new tracks or options to existing graduate programs and deletions of tracks or options, and makes recommendations to the Vice Provost and Dean of Graduate Studies.
5. Reviews proposals for new graduate certificate programs and the deletion of existing certificate programs and makes recommendations to the Vice Provost and Dean of Graduate Studies.
6. Reviews all requests for additions, revisions, and deletions of graduate and special topics courses and makes recommendations to the Vice Provost and Dean of Graduate Studies.
7. Reviews all matters referred by the Graduate Council.

## **COLLEGE GRADUATE COORDINATORS**

College graduate coordinators are appointed by the respective college Deans (or Directors of Schools with graduate academic programs) to work with the College of Graduate Studies. The primary responsibilities of the college graduate coordinators are to identify opportunities for graduate education, communicate the college vision of graduate education to faculty, staff, students, and the university, coordinate and represent college graduate concerns to others, conduct studies that ensure program quality and standards in the college and report this information to the university, assist with program reviews, and prepare an annual report to the College of Graduate Studies on college graduate activities.

College of Arts and Humanities—Lynn Hepner  
 College of Business Administration—Dr. Djehane Hosni  
 College of Education—Dr. B. Grant Hayes  
 College of Engineering and Computer Science—Dr. Jamal Nayfeh  
 College of Health and Public Affairs—Dr.

Stephen Holmes  
 College of Medicine—Dr. Steven Ebert  
 College of Nursing—Dr. Jean Kijek  
 Rosen College of Hospitality Management—Dr. Paul Rompf  
 College of Optics and Photonics—Dr. David Hagan  
 College of Sciences—Dr. Michael Johnson  
 Interdisciplinary Studies—Dr. Michael Hampton

## GRADUATE PROGRAM DIRECTORS

The graduate program directors are appointed by the respective department Chairs (or Directors of other units with graduate academic programs) to work with the college and university personnel in furtherance of graduate education. Under the direction of their department chair, they are primarily responsible for recruiting graduate students and responding to inquiries; providing for student services such as mentoring, career development opportunities, and student orientations; providing for office space for graduate assistants; informing students and faculty of student completion rates; informing students and faculty of financial support available to graduate assistants; ensuring program standards in their department; and preparing an annual report to the colleges on their activities.

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## Research

- ◇ Overview
- ◇ UCF Research
- ◇ Centers and Institutes

### OVERVIEW

Research includes work in and across multiple disciplines such as optics and lasers, modeling and simulation, materials science, energy, biomolecular science, neuroscience, nanoscience, computer science, forensic science, education/distributed learning, and business operations including human factors and entrepreneurship.

The university has focused its technical development on key institutes and centers that include the Institute for Simulation and Training, Center for Research and Education in Optics and

Lasers, Florida Photonics Center of Excellence, Florida Solar Energy Center, Advanced Materials Processing and Analysis Center, Biomolecular Science Center, and the Nanoscience Technology Center.

UCF is delivering on its promise of becoming America's leading partnership university through relationships on local, national and international levels. A significant amount of the sponsored research UCF generates annually is provided by industry along Florida's High-Tech corridor from Tampa/St. Petersburg through Orlando to Daytona/Melbourne. UCF keeps regional, state, national, and international needs in the forefront when recruiting top students, faculty and staff, and developing the infrastructure to achieve global prominence in selected areas of research.

For more information, visit [www.research.ucf.edu](http://www.research.ucf.edu).

## UCF RESEARCH

### Research Strengths

As a leading metropolitan research university, UCF has built research strengths in a variety of areas including education, photonics, engineering, simulation, computer science, alternative energy, and the emerging areas of nanoscience and life sciences, in order to become a catalyst for the region's high-tech development. A strong spirit of collaboration has made UCF an attractive partner for many central Florida high-tech businesses that, in turn, have provided UCF students with real-world experiences.

"Industry-university partnerships are the key to the creation and growth of knowledge-based, wealth producing, and high-tech businesses," says M. J. Soileau, UCF Vice President for Research and Commercialization.

### Research and Employment Opportunities

Students can find research and employment opportunities through UCF or many of the 21,000 high-tech companies doing business in the Central Florida High-Tech Corridor. As one of the region's largest high-tech employers, UCF employs hundreds of B.S. through Ph.D. scientists and engineers. Sponsored research activities result in millions of new dollars for the local economy (\$121.4 million in extramural research funding

in 2007) and helps attract, retain and grow high-tech companies in the region. Through UCF's highly successful Technology Incubator, graduate students can work with start-up companies or bring their own innovations to market. The Central Florida Research Park, located adjacent to the UCF Orlando campus, is a hotbed for sponsored research, industrial partnerships, internships and employment opportunities for UCF students and graduates. The university's Office of Research and Commercialization fosters the creation of intellectual capital that can solve today's pressing problems, improve quality of life, and provide an engine for economic growth.

Students are the foundation of UCF's commitment to enhancing central Florida's high-tech base. By focusing on providing the best undergraduate education in Florida, particularly in science and engineering; investing in selected areas of research and graduate studies; and attracting leading students and scholars to UCF's research centers of excellence (in optics and photonics, materials science and engineering, computer science and engineering, simulation and training, biomolecular sciences, alternative energy, etc.), UCF aims to take technology to the next level of knowledge and application. Research teams of faculty, students, and research staff generate the kind of "disruptive technology" that results in new products, new companies, and highly trained new research scientists.

## CENTERS AND INSTITUTES

- ◇ College of Optics and Photonics/CREOL/  
Florida Photonics Center of Excellence
- ◇ Institute for Simulation and Training
- ◇ Florida Solar Energy Center
- ◇ Biomedical Sciences Center
- ◇ Advanced Materials Processing and Analysis  
Center
- ◇ Nanoscience Technology Center
- ◇ Central Florida Research Park
- ◇ Office of Research and Commercialization

The University of Central Florida has several nationally and internationally recognized research centers and institutes that offer students the opportunity to work hands-on with experienced researchers. Other organized research units complement the activities of academic departments and engage graduate students in instructional and research roles. For more information regarding the university's centers, institutes, and other organized

programs of research, visit [www.research.ucf.edu](http://www.research.ucf.edu).

## CREOL/FPCE

### Funding in 2007 | \$16.2 million

The College of Optics and Photonics/CREOL/FPCE (Florida Photonics Center of Excellence) provides high quality education in optical science and engineering, conducts scholarly fundamental and applied research, and aids in the development of technology-based industries in Florida and throughout the nation. In 2006 the state awarded UCF \$4.5 million to establish the Florida Photonics Center of Excellence Laser Technology Initiative to complement the Florida Photonics Center of Excellence at the College of Optics and Photonics/CREOL. Research activities include:

- Diffractive and holographic optics
- Image analysis and understanding
- IR systems and technology
- Laser system development
- Laser-aided materials processing
- Liquid crystal optics
- Nonlinear optics
- Optical glass sciences
- Optoelectronics
- Nanophotonics
- Photonic information processing systems
- Remote sensing, laser radar and atmospheric propagation
- Theory of light matter interaction
- Virtual reality and medical imaging
- Biophotonics
- X-Ray sources and technology

**Director:** Eric Van Stryland  
[www.creol.ucf.edu](http://www.creol.ucf.edu)  
 407-823-6800

## IST

### Funding in 2007 | \$14.2 million

The Institute for Simulation and Training (IST) is an internationally recognized research institute that focuses on advancing modeling and simulation technology and increasing the understanding of simulation's role in training and education. Research activities include:

- Multi-resolution simulation
- Mixed reality simulation
- Connectivity
- Computer generated forces
- Virtual environments

- Computer graphics
- Terrain databases
- Low-cost graphics
- Training and education
- Augmented reality
- New simulation environments
- Medical applications
- Public safety simulation
- Parallel computing
- Information systems technology
- Robotics and machine cognition

**Director:** Randall Shumaker

[www.ist.ucf.edu](http://www.ist.ucf.edu)

407-882-1300

## FSEC

**Funding in 2007 | \$6.6 million**

Located at UCF Cocoa, the Florida Solar Energy Center (FSEC) is the largest and most active state-supported renewable energy and energy efficiency research and training organization in the United States. FSEC researches and develops energy technologies to reduce Florida's use of energy and enhance its economy and environment, and educates the public, practitioners, and students on the results of the research. Research activities include:

- Solar thermal systems
- Photovoltaic systems, applications and cells
- Energy efficiency and building science
- Indoor air quality
- Advanced HVAC systems
- Hydrogen energy from renewable resources
- Pollutant detoxification
- Energy-Efficient Industrialized Housing
- Cost-Effective Solar Program for Utilities/ ESCOs
- Energy-Efficient New Homes Program

**Director:** James Fenton

[www.fsec.ucf.edu](http://www.fsec.ucf.edu)

321-638-1000

## Biomedical Sciences Center

**Funding in 2007 | \$7.7 million**

The Biomolecular Science Center emphasizes development of biomedical technology. Research activities include:

- Molecular and genomic basis of diseases
- Advanced fluorescence microscopy
- Allergy

- Antithrombotics
- Arthritis
- Bionanotechnology in therapeutics
- Cancer
- Cardiovascular diseases/ischemic heart disease
- Cell signal transduction
- Crohn's disease
- Developmental genetics
- Giardia
- High-yield recombinant protein production using plants as bioreactors
- Kidney ischemia
- Image analysis
- Inflammation
- Magnetic force microscopy
- Malaria
- Mechanisms of cell death
- Mechanisms of gene expression control
- Molecular immunology
- Neuron guidance damage and repair
- Photoactivated drugs
- Raman spectral microscopy
- Reproduction
- Synthesis of antimetabolites
- Thalassemia
- Transcription factors and proteomics
- Tuberculosis
- Uptake and delivery of drugs
- Vaccines

**Director:** Pappachan Kolattukudy

[www.biomed.ucf.edu/index.php?tg=articles&idx=More&topics=17&article=12](http://www.biomed.ucf.edu/index.php?tg=articles&idx=More&topics=17&article=12)

407-823-1206

## AMPAC

**Funding in 2007 | \$2.4 million**

The Advanced Materials Processing and Analysis Center (AMPAC) excels in the development, processing, and characterization of advanced materials, including structural, electronic, optical and nanomaterials. The overall mission of the Center is to advance fundamental and applied multidisciplinary research in materials through combining resources of UCF and local industries. AMPAC is home to the Materials Characterization Facility (MCF), a facility with state-of-the-art surface and materials characterization equipment and the newly-commissioned Advanced Microfabrication Facility (AMF), for processing of Micro Electromechanical systems, miniaturized systems, devices and thin films. In 2003, two AMPAC researchers received the prestigious

Faculty Early Career Development award from the National Science Foundation, the first time two scholars from one unit have concurrently won.

Research activities include:

- High temperature materials and coatings
- Micro and nano fabrication
- Nanomaterials, synthesis and consolidation
- MEMS and smart materials
- Multi-scale mechanical property characterization
- Atomic scale characterization of materials
- Chemical mechanical polishing (CMP)
- Acoustic wave devices
- Microelectronics materials processing and device characterization

**Interim Director:** Louis Chow  
 pegasus.cc.ucf.edu/~ampac/  
 407-882-1455

## Nanoscience Technology Center

**Funding in 2007 | \$2.3 million**

Research activities include:

- Microfluids
- Controlled cell attachment/growth via surface chemistry
- *In vitro* modeling of spinal reflex arc
- Neuronal networks to model physiology
- Patterned neuronal networks for robotics
- Engineered cardiac myocyte hybrid systems
- MEMS and NEMS
- Materials synthesis and characterization
- Neuronal cell patterning
- Cell-based biosensors for drug discovery/toxin detection
- High throughput drug screening

**Interim Director:** Debra Reinhart  
 www.nanoscience.ucf.edu  
 407-882-1578

## Central Florida Research Park

**The thousand-acre Central Florida Research Park, affiliated with UCF, is ranked among the top ten research parks in the nation.**

UCF is in the company of North Carolina's Research Triangle and Stanford University in California at the pinnacle of research parks, says Research Park Executive Director Joe Wallace. "Whether by the number of acres, by the number of buildings, the number of companies or employees,

we're always in the top ten, by whatever criteria used," he notes.

Today, the 1,027 acre campus-like office park is home to about 106 companies, 9,500 employees, many of them students and UCF graduates, and elements of the U.S. Army, Navy and Marines, as well as university departments and projects. Although the park's foundation is U.S. military simulation and training research, the door is open to any other enterprise which can enhance UCF and the area's economic development through partnerships with the university and research park.

UCF's Institute for Simulation and Training, Central Florida Technology Development Center, the National Center for Forensic Science, Crime Mapping and Data Management and Public Safety Research centers are in the Research Park, along with the Naval Air Warfare Center Training Systems Division and other joint missions with government entities.

On the private side, Siemens/Westinghouse, AT&T Wireless, Silicon Graphics, Hewitt Associates and others operate in the park. The University Tech Center serves as an "incubator" transition site, where private industries develop and produce products and services based on university research.

## Office of Research & Commercialization

### Research

UCF's research enterprise plays an important role in Florida's emergence as a technological and economic leader in the twenty-first century.

Since its inception as Florida Technological University, UCF has attracted scholars whose curiosity about the world around them has resulted in new inventions that have benefited the citizens of central Florida, the state and beyond in countless ways.

### Building a Leading Research Institution

Research awards have risen steadily over the years to 2006's record \$104.4 million, leading UCF into the ranks of major research institutions. UCF's dedicated faculty, students and staff continue to expand the quality, depth and breadth of research programs conducted at the university.

## Research & Commercialization

The new economy encourages the rapid progression of discoveries from the laboratory to the marketplace, and UCF is a national leader in this area. The success of the UCF Technology Incubator, the establishment of the National Entrepreneur Center, the Orange County Venture Lab, and the Technology Entrepreneurship Center all illustrate UCF's commitment to innovation-based economic development in the region.

## Student Research

Graduate education and research go hand-in-hand. The great discoveries of the twenty-first century will come from the creative efforts of university faculty working closely with bright and motivated graduate students. Graduate students, particular those pursuing doctoral degrees, broaden the knowledge base of their disciplines. UCF undergraduates, through the Undergraduate Research Initiative, work one-on-one with Florida faculty on selected research projects.

The university's graduate programs have produced generations of professionals in a wide variety of disciplines, many of whom have risen to positions of prominence in our state, the nation and the world.

## Vice President for Research & Commercialization:

M. J. Soileau  
www.research.ucf.edu  
407-823-5538

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# Admission and Registration

- ◇ Overview
- ◇ U.S. Citizens and Resident Aliens
- ◇ International Students
- ◇ Information for All Applicants
- ◇ Registration
- ◇ Records

## OVERVIEW

The UCF College of Graduate Studies coordinates the admission process with program directors and the deans of the colleges to admit prospective

students to graduate study. The College of Graduate Studies also admits students who are applying as nondegree-seeking students.

In order to enroll in graduate classes, students must have obtained a baccalaureate or higher degree, prior to the start of the term for which the student is admitted, from a regionally accredited U.S. institution or from a recognized foreign institution. Students without a baccalaureate or higher degree from a regionally accredited U.S. institution or a recognized foreign institution are not admitted to graduate degree programs, graduate certificate programs, or graduate nondegree status. The College of Business Administration requires that all degrees must have been earned from a regionally accredited institution.

## Admission to the University

The admission process begins with the receipt of the Online Graduate Application for Admission along with all supporting documents. In order to be considered for admission to a graduate program, the following information must be submitted and on file in the UCF College of Graduate Studies by the stated application deadline: application, residency, and any required supporting documents specified by the program. These documents become part of UCF's files and will not be returned to or copied for the applicant. All documents, aside from transcripts and test scores, must be submitted together with the online application. Transcripts and test scores must be official.

For specific program information, refer to the appropriate department descriptions in the Graduate Programs section of this catalog. Program application deadlines are listed for each graduate program. Some programs require a pre-application and may require additional documents as part of this process.

**NOTE:** All programs require that all admission documents (application form, residency form, recommendations, essay/personal statement, resume) be submitted online simultaneously by the stated application deadline. Official test scores must be sent directly from ETS/Pearson Vue to the UCF College of Graduate Studies (institution code 5233 for GRE and TOEFL; institution code RZT-HT-58 for GMAT). Official transcripts should be sealed in an envelope by the registrar of the former institution and sent directly to the UCF College of Graduate Studies, P.O. Box 160112, Millican Hall 230,

Orlando, FL 32816-0112.

Once the online application and all supporting documents are received, the UCF College of Graduate Studies will send you an e-mail notifying you of its receipt. Actual processing of the application, however, is not initiated until the application fee and other required materials are received in the UCF College of Graduate Studies. The College of Engineering and Computer Science and the College of Optics and Photonics require pre-application to their programs prior to beginning the university application process. Please refer to the graduate program's admissions information in order to become familiar with the procedures specific to each program.

When all application information has been received by the stated deadline and processed by our office, the appropriate graduate program reviews it in order to make an admission recommendation. Acceptance into a graduate program will be granted by the UCF College of Graduate Studies.

Nondegree-seeking applicants will receive notice of acceptance to the university and registration information from the UCF College of Graduate Studies. Admission as a nondegree student does not constitute admission to a graduate program.

### **Readmission to the University**

A regularly admitted student who has not been registered for three consecutive semesters must apply for readmission to the same graduate program through the UCF College of Graduate Studies. Students can complete the online admission application. All supporting documentation should be submitted online as well. An application processing fee is required. Please refer to the Graduate Programs section to ensure that you have not missed the deadline for your program. Readmissions are not guaranteed.

### **Reactivation of Your Application**

Applicants that are not granted admission for a specific term must complete a new online application if they wish to be considered for a new term/program. Those applicants that are admitted but do not enroll in their first term will also need to complete a new online application if they wish to be considered for a new term or program. An application fee is required. Supporting documents such as resumes, essays and letters of

recommendation should be resubmitted online if more than 12 months have elapsed since the last application. GRE/GMAT scores received will remain on file and are valid for 5 years from the test date; TOEFL/IELTS scores received will remain on file and are valid for 2 years from the test date. Transcripts received by our office will never expire. Please refer to the Graduate Programs section to ensure that you have not missed the deadline for your program. Reactivations are not guaranteed.

## **U.S. CITIZENS AND RESIDENT ALIENS**

The application for admission to a graduate program is submitted electronically through the online application. The College of Engineering and Computer Science and the College of Optics and Photonics require a pre-application to their programs prior to beginning the university application process. The College of Engineering and Computer Science pre-application is located at [www.graduate.cecs.ucf.edu](http://www.graduate.cecs.ucf.edu), and the College of Optics and Photonics pre-application is located at <http://www.creol.ucf.edu/Academics/Prospective/PreApplication/>.

U.S. citizens and resident aliens in the United States must submit the following application materials directly to the UCF College of Graduate Studies:

Graduate Application for Admission (electronically signed and submitted by the applicant).

Residency Classification form (submit with online application).

A \$30 nonrefundable application fee is required of all applicants for each application submitted.

One official transcript (in a sealed envelope) from each college/university attended. **For UCF students applying to UCF graduate programs:** You do not need to request transcripts of your UCF course work. The UCF College of Graduate Studies will request those transcripts internally.

Graduate Record Examination scores (GRE) or General Management Admission Test (GMAT) scores for doctoral applicants and for those applying to master's programs that require an admissions test. These scores must be sent directly to UCF by the testing agency.

Test of English as a Foreign Language (TOEFL)

scores or International English Language Testing System (IELTS) scores sent directly to UCF, if an applicant is from a country where English is not the only official language, or when an applicant's degree is not from an accredited U.S. institution, or if an applicant did not earn a degree in a country where English is the only official language or a university where English is the only official language of instruction.

Recommendations, if required by the program (complete this section of the online application).

Immunization Form\*

Resume, essay, or other materials if required by the program (must be submitted as part of the online application).

**Some programs may require interviews, portfolios, or other material. Official application materials (or duplicate copies) should not be submitted directly to the graduate programs as it will delay the processing of the application. All official application materials, with the exception of test scores and transcripts must be submitted online. The UCF College of Graduate Studies must receive the application and all supporting documents by the stated application deadline.**

\*To expedite processing of materials, download and print the Immunization Form from the online application. Send the completed form to the address specified on the form. This form is not used in making an admission decision. However, you will not be allowed to enroll at UCF without submitting the Immunization Form.

## Nondegree-seeking Students

If you are interested in taking graduate courses at UCF for personal or professional enhancement or to prepare for possible admission to a graduate program, you may enroll as a nondegree-seeking student. An online application must be submitted. If you are applying as a nondegree student, you must submit the following application materials:

Graduate Application for Admission (electronically signed and submitted by the applicant).

Residency Classification form (submit with online application).

A \$30 non-refundable application fee is required of all applicants for each application submitted.

One official transcript (in a sealed envelope) showing an earned bachelor's degree from a regionally accredited institution. **For UCF students applying as nondegree-seeking:** You do not need to request transcripts of your UCF course work. The UCF College of Graduate Studies will request those transcripts internally.

Immunization Form\*

The UCF College of Graduate Studies must receive the application and all supporting documents electronically by the stated application deadline.

Please note that nondegree admission or admission to a graduate certificate program at UCF does not guarantee admission to graduate status in a degree program. If admitted to graduate status in a degree program, no more than 9 credit hours taken as nondegree seeking will be allowed to be transferred. International students are not eligible for nondegree status unless they hold an eligible visa. Students taking online courses from their home country are eligible to be nondegree-seeking since they do not require a visa.

In general, nondegree-seeking students are not eligible for financial aid, assistantships, fellowships, or tuition support, although it is best to check with the Office of Student Financial Assistance for specific details. Nondegree-seeking students must be enrolled in 12 credit hours or more to be considered in full-time status.

\* To expedite processing of materials, download and print the Immunization Form from the online application. Send the completed form to the address specified on the form. This form is not used in making an admission decision. However, you will not be allowed to enroll at UCF without submitting the Immunization Form.

## Transient Students

Students attending UCF for a term from another institution where they are receiving their degree are classified as transient students. Transient students can apply online as a Nondegree-seeking student. An online application must be submitted. Required documents for transient students are:

Graduate Application for Admission (electronically signed and submitted by the applicant; select "Nondegree (General)").



A \$30 non-refundable application fee is required of all applicants for each application submitted.

Residency Classification form (submit with online application).

A letter from your home institution stating that you are in good academic standing and that the institution will accept the transfer of the hours or an official transcript (in a sealed envelope) showing an earned bachelor's degree from a regionally accredited institution.

#### Immunization Form\*

The UCF College of Graduate Studies must receive the application and all supporting documents electronically by the stated application deadline.

\*To expedite processing of materials, download and print the Immunization Form from the online application. Send the completed form to the address specified on the form. This form is not used in making an admission decision. However, you will not be allowed to enroll at UCF without submitting the Immunization Form.

## Certificate Students

If you are interested in taking graduate courses at UCF in a specialized or interdisciplinary area, you may enroll in one of our many graduate certificate programs. In order to apply to a certificate program, complete the online application. The following application materials are required:

Graduate Application for Admission (electronically signed and submitted by the applicant).

A \$30 non-refundable application fee is required of all applicants for each application submitted.

Residency Classification form (submit with online application).

One official transcript (in a sealed envelope) showing an earned bachelor's degree from a regionally accredited institution. **For UCF students applying for a certificate:** You do not need to request transcripts of your UCF course work. The UCF College of Graduate Studies will request those transcripts internally.

#### Immunization Form\*

The UCF College of Graduate Studies must receive the application and all supporting documents

electronically by the stated application deadline.

If you are a regular graduate student in a graduate degree program and wish to supplement your degree with a graduate certificate, you may do so by completing the online application indicating the certificate program. In order to complete a graduate certificate program, a student must apply and be admitted to a specific graduate certificate program. International students on an F-1 visa will not be accepted solely into a certificate program unless they are concurrently enrolled in the Intensive English Language Program at UCF or are attending UCF as a transient student and hold an I-20 from an approved institution.

Students who choose to pursue both a degree and a professional certificate must sustain normal academic progress toward the degree program.

\*To expedite processing of materials, download and print the Immunization Form from the online application. Send the completed form to the address specified on the form. This form is not used in making an admission decision. However, you will not be allowed to enroll at UCF without submitting the Immunization Form.

## INTERNATIONAL STUDENTS

The application for admission to a graduate program is submitted electronically through the online application. The College of Engineering and Computer Science (pre-application) and the College of Optics and Photonics (pre-application) require that you fill out a pre-application form before you complete the university application for graduate admission. If you are not a U.S. citizen or resident alien, you must submit the following application materials:

Graduate Application for Admission (electronically signed and submitted by the applicant by the stated application deadline).

A \$30 non-refundable application fee, paid as a check or money order in U.S. currency drawn on a U.S. bank and made payable to the University of Central Florida, is required of all applicants for each application submitted. No application fee is required for the pre-application form required by the College of Engineering and Computer Science or the College of Optics and Photonics.

One official transcript (in a sealed envelope) showing a bachelor's degree earned at a regionally

accredited U.S. institution or from a recognized foreign institution, accompanied by an official certification of degree, with date awarded. If a student has attended more than one college or university, separate transcripts must be submitted.

Residency Classification form (submit with online application)

The university conducts a complete assessment of all required credential documents (official transcript(s) and official certification of degree) submitted by the student, including the record of all academic course work. Excluding all master's programs in the College of Business Administration and the Rosen College of Hospitality Management and those master's programs that do not require a GRE (or GMAT), the university will evaluate all credentials for international students who have received their degree at a college or university outside of the United States. Additional information is available in the Transcripts Evaluation section on this webpage.

Graduate Record Examination scores (GRE) or General Management Admission Test (GMAT) scores for doctoral applicants and for those applying to master's programs that require an admissions test. These scores must be sent directly to UCF by the testing agency.

Test of English as a Foreign Language (TOEFL) scores or International English Language Testing System (IELTS) scores sent directly to UCF, if an applicant is from a country where English is not the only official language, or when an applicant's degree is not from an accredited U.S. institution, or if an applicant did not earn a degree in a country where English is the only official language or a university where English is the only official language of instruction.

Financial Statement with a letter indicating commitment (from your parents, government, or others) to financially support your education.

Recommendations, if required by the program (complete this section of the online application).

Immunization Form\*

Resume, essay, or other material, if required by the program (must be submitted as part of the online application).

**Some programs may require interviews,**

**portfolios, or other materials. Official application materials (or duplicate copies) should not be submitted directly to the graduate programs as it will delay the processing of the application. All official application materials, with the exception of test scores and transcripts, must be submitted online. The UCF College of Graduate Studies must receive the application and all supporting documents by the stated application deadline.**

\* To expedite processing of materials, download and print the Immunization Form from the online application. Send the completed form to the address specified on the form. This form is not used in making an admission decision. However, you will not be allowed to enroll at UCF without submitting the Immunization Form.

## International Student Policies

UCF adheres to the principle that the university is primarily a community of scholars, both national and international, in pursuit of knowledge, and active in teaching, studying, and doing research. The presence of international students on the campus contributes substantially to the quality of the educational experience for everyone. It can bring to the classroom learning environment unique viewpoints and perceptions that would otherwise be lost. Effective personal contact across cultures can reduce errors in understanding one another's problems and foster a climate of international peace and cooperation among people of the world today.

Only students with a complete application package will receive e-mail updates and consideration from the UCF College of Graduate Studies. To expedite the application process, international applicants should submit all documents (application, test scores, letters of recommendation, transcripts, etc.) under the same name, preferably the name as it is listed on the official passport. Upon receiving an application, the UCF College of Graduate Studies assigns a student identification number (for example, 828-XX-XXXX). This number should be included whenever possible in all correspondence.

International students are not eligible for nondegree/certificate status unless they hold an eligible visa. Additional information regarding immigration processes and transition to the UCF community is available from the International Services Center.

International applicants are encouraged to begin the application process early. Also, international

applicants should ensure all supporting documents, including those required to issue an I-20, are received by the stated application deadline. Only official documentation is accepted and it is the student's responsibility to submit all documents by the application deadline. The application status available online at my.ucf.edu is the most current and accurate information available.

## Official Transcripts

All applicants for graduate admission must provide one official transcript (in a sealed envelope) showing a bachelor's degree earned at a regionally accredited U.S. institution or an internationally recognized institution and an official diploma/degree certificate, with date awarded. If a student has attended more than one college or university, separate transcripts must be submitted for each institution. To be official, transcripts and diploma/degree certificate must bear the original seal or signature of the school's registrar or of the appropriate school official or office. To ensure the timely evaluation of academic credentials, applicants should submit all transcripts, accompanied by diploma/degree certificate, at the time of application and by the stated application deadline.

## Transcript Evaluation

### Evaluation Policy

The university conducts a complete assessment of all required credential documents (official transcripts and official certification of degrees) submitted by the student, including the record of all academic course work. Excluding all master's programs not requiring a standardized admissions test, and those master's programs in the College of Business Administration and the Rosen College of Hospitality Management, the university will evaluate all credentials for international students who have received their degree at a college or university outside of the United States. Additional information regarding specific application requirements and credentials processing for those master's programs not requiring a standardized admissions test, and for all master's programs in the College of Business Administration and the Rosen College of Hospitality Management is given below.

The university does not consider documents certified by a notary public or commissioner of oaths to be official.

Photocopies of certified documents are not acceptable. Course work completed at one institution but listed on the record of a second institution is not acceptable. A separate copy of the record from the first institution is required.

If these documents are written in a language other than English, a certified translation in English must be provided together with the original language records. Any translated record should be a literal and not an interpretive translation. Acceptable English translations may be provided by sworn court-approved translators, qualified translators working within university foreign language departments, and from reputable translation agencies. We recommend the services of University Language Services (ULS) and Josef Silny and Associates, Inc. for certified translations. If a student is missing any documentation, or other required information, an evaluator will contact the student by e-mail to request the additional documentation/information. In the case that a student is missing documentation/information, the evaluation process will be placed on hold until the university has received all necessary documentation. All students are advised to submit all required documentation as early as possible so as to not to delay the evaluation process.

In the event that the university receives documentation that is questionable, or suspicious in any way, the university will verify authenticity with the issuing institution. If an institution must be contacted for verification, the evaluation process will be placed on hold until the university has received all necessary information.

### Equivalency Information

All applicants for graduate study at the University of Central Florida must hold a U.S. Bachelor's degree, or its equivalent, from a regionally accredited or governmentally recognized institution of higher learning. This is a minimum requirement for admission to a graduate program at UCF. For a list of some country-specific information on foreign degree equivalents and required documentation, please visit Sample Country Requirements.

### **Applicants to master's programs not requiring a standardized admissions test, and master's programs in the College of Business Administration and Rosen College of Hospitality Management**

In addition to official transcripts and certification of degrees, a course-by-course credential evaluation is required of all students who have attended a college/

university outside the United States. Credential evaluations are accepted from World Education Services (WES) or Josef Silny and Associates, Inc. only. All documents required by World Education Services (WES) or Josef Silny and Associates, Inc., must be submitted directly by the applicants. The university is not responsible for forwarding any documents received by our office to World Education Services (WES) or Josef Silny and Associates, Inc.

## Resources for International Transcript Evaluations

UCF accepts transcript evaluations from the following two agencies only:

World Education Services, Inc.  
PO Box 01-5060, Miami, FL 33101  
Telephone: 306-358-6688  
Fax: 305-358-4411  
www.wes.org

Josef Silny and Associates, Inc.  
International Education Consultants  
PO Box 248233, Coral Gables, FL 33124  
Telephone: 305-273-1616  
Fax: 305-273-1338  
www.jsilny.com

## Documents Needed to Issue an I-20

Refer to the International Services Center (ISC) website for information on policies and documents needed to issue an I-20. All documents needed to issue an I-20 must be received by the stated application deadline.

For additional questions about documents required for I-20 issuance, you may contact the UCF International Services Center by e-mail (isc@mail.ucf.edu) or by telephone (407)823-2337.

## International Application Deadlines

Complete applications (all required documents) for all graduate programs must be received electronically by the date listed below to be considered for admission for that semester. Failure to meet these deadlines may prevent admission as a regular graduate student for the term. **Please refer to the Graduate Programs section in this catalog for programs that have earlier deadlines for international applicants.** The following dates are university application deadlines for international students (students from abroad).

**Fall admission:** January 15  
**Spring admission:** July 1  
**Summer admission:** November 1

The following dates are university application deadlines for international transfer students (transfers from U.S. schools).

**Fall admission:** March 1  
**Spring admission:** September 1  
**Summer admission:** December 15

In addition, students who wish to be considered for fellowships or assistantships must have a complete application package by January 15 (or the designated Fall Priority date for their program).

## Test of English as a Foreign Language

International students, except those who are from countries where English is the only official language, those who have earned a degree from a regionally accredited US college or university, or those who have earned a degree from a country where English is the only official language or a university at which English is the only official language of instruction, are required to submit a score on the Test of English as a Foreign Language (TOEFL) or IELTS before they can be admitted to the university. Students who are non-native speakers of English (and do not have a degree from a U.S. institution) must pass the SPEAK exam administered by the UCF Center for Multilingual Multicultural Studies before they will be permitted to teach as a Graduate Teaching Associate or Graduate Teaching Assistant.

A TOEFL computer-based score of 220 or 80 on the internet-based TOEFL (or equivalent score on the paper-based test) or 6.5 on the IELTS is required unless otherwise specified by the program. The list below includes programs that have determined a minimum required TOEFL or IELTS score higher than the university requirement.

Program	TOEFL (Paper)	TOEFL (Computer)	TOEFL (iBT)	IELTS
<b>College of Arts and Humanities</b>				
English	577	233	91	7
History	577	233	91	7
<b>College of Sciences</b>				
Biology	573	230	89	7

Program	TOEFL (Paper)	TOEFL (Computer)	TOEFL (iBT)	IELTS
College of Business Adm.	577	233	91	7

## International Student Mandatory Health and Accident Insurance

Each international student accepted for admission must, prior to registration, submit proof of compliance with the Board of Education's mandatory health and accident insurance. There are no exceptions made for submitting this proof. Written proof of insurance must be provided to the Student Health Services Center and must be valid at all times. Cancellation of the policy or stoppage of the premium will result in administrative withdrawal from all classes. If an insurance carrier from outside of the United States issues the insurance, a notarized statement, in English, must be provided attesting to meeting the minimum coverage mandated by the state of Florida.

If an insurance carrier from outside of the United States issues the insurance, a notarized statement, in English, must be provided attesting to meeting the minimum coverage mandated by the state of Florida.

For additional information regarding student health insurance, contact Student Health Services.

## Tax Obligations

The Internal Revenue Service (IRS) is the U.S. government institution that oversees the withholding and filing of taxes. International students are not always exempt from income taxes in the United States. To determine your tax obligations, students should visit the IRS website.

Upon arrival at UCF, international students will be required to apply for a Social Security Number (SSN) or Individual Taxpayer Identification Number (ITIN) and provide this number to the Registrar's Office at UCF. The International Services Center will help international students complete the paperwork required for their visa and SSN or ITIN.

International students who will have graduate assistantships will not be allowed to begin work until the department or program submits the valid SSN and assistantship paperwork to UCF Human Resources.

International students who are to receive tuition support or fellowships must provide a valid SSN to the Registrar's Office before payment processing can occur. Those with fellowships must also complete additional paperwork with the UCF Finance and Accounting Office. Deferments for tuition and fellowship awards will be placed on the student's account, but payment cannot occur until all required paperwork is completed and the valid SSN has been provided to the Registrar's Office.

## Employment of International Students

International students must have their I-20 authorized by the International Services Center for any on-campus or off-campus employment. Approved on-campus employment must be validated by presenting all immigration documents and Social Security Number to the UCF Human Resources (HR) Department. International students are not allowed to start employment until they present receipt of Social Security Card application or Social Security Number issued to them by the Social Security Administration.

For detailed information on employment and taxation, visit the websites of UCF Human Resources and UCF Finance and Accounting.

## INFORMATION FOR ALL APPLICANTS

### Application Forms

The application for admission to a graduate program is submitted electronically through the online application. A nonrefundable application fee is required of each applicant for each application submitted.

### Reactivation

A student who has submitted an application for admission to the UCF College of Graduate Studies, but never attended, may reactivate the original application within a year by completing a new online application. Reactivation is the process by which students can apply and be considered for admission without having to resubmit all supporting materials (as long as it is within a year of the original application). An application fee is required. Admission is *not* guaranteed by applying for reactivation. If a student applies and does not

attend, application files are destroyed after one year. When reactivating an application, please check program deadlines and requirements to ensure that all requirements are met. To reactivate your file or apply for readmission, complete the online application by the stated application deadline for your program.

## Official Transcripts

To be granted admission to UCF in graduate or nondegree status, all applicants must request official transcripts (in a sealed envelope) from their previous institution showing a baccalaureate degree and their grades in all work attempted while registered as an undergraduate student OR while registered as an upper-division undergraduate student (normally based on the last sixty attempted semester hours). Transcripts must be mailed directly from the previous institution to the UCF College of Graduate Studies **For UCF students applying to UCF graduate programs:** You do not need to request transcripts of your UCF course work. The UCF College of Graduate Studies will produce those transcripts internally. If grades were transferred from other schools in the last 60 semester hours, official transcripts from those schools also must be obtained and included. If applying to Business, Social Work, or Psychology, all transcripts from all colleges attended are required. Final acceptance into degree-seeking graduate status is not granted unless an applicant's official transcripts and necessary official test scores are on file so that they can be evaluated for admission.

## Graduate Examinations

All students who wish to be admitted in regular degree-seeking status to a doctoral program or wish to be considered for university-wide fellowships must also submit an official GRE General Test score (or an official GMAT score as required). Some master's level programs may also require the GRE or GMAT for admission. Some programs may also require the GRE subject test before admission into graduate student status. Official copies must be forwarded directly from the Educational Testing Service (ETS) or Pearson Vue to the UCF College of Graduate Studies (Institution Code 5233 for GRE and TOEFL and RZT-HT-58 for GMAT) and be on file by the stated application deadline. UCF recommends that any individual contemplating class work beyond the bachelor's degree take the

GRE or GMAT at the earliest possible date to avoid problems associated with a delay of acceptance into a graduate program. The GMAT exam is computerized. Registration is available by phone at 1-800-717-GMAT or by visiting their website at [www.mba.com](http://www.mba.com). The GRE is also available in a computerized format. Registration for the GRE is available at 1-800-GRE-CALL or by visiting their website at [www.ets.org](http://www.ets.org). Test scores are usually available in four to six weeks. Preparatory courses are offered through UCF's Division of Continuing Education (407) 882-0260, or [www.ce.ucf.edu](http://www.ce.ucf.edu).

Pearson Vue and the Educational Testing Service's policy are to report scores only until September 30 following the fifth anniversary of the test date. In other words, test scores are only valid for five years. If ETS/Pearson Vue cannot provide an official copy, students will need to repeat the GRE or GMAT and have an official score reported to the UCF College of Graduate Studies.

Test of English as a Foreign Language (TOEFL) scores are only valid from ETS for two years. Registration for the TOEFL is available by visiting the ETS website at [www.ets.org](http://www.ets.org). Registration for the International English Language Testing System (IELTS) is available by visiting their website at [www.ielts.org](http://www.ielts.org).

## Medical History Report

All new students must furnish medical history reports on the approved university health form before registration will be allowed. The Immunization Form is available from the UCF Student Health Services. This form should be completed and mailed to the address on the form. Immunizations and diagnostic procedures may be required of students by the university prior to any registration. University requirements for vaccinations or immunizations may be waived upon receipt of appropriate documentation from the student that the waiver is requested on the basis of religious grounds or on the recommendation of a university physician.

Where physician examinations or certificates are required, they must be signed by a doctor of medicine or by a doctor of osteopathy. The university reserves the right to refuse registration to any student whose health record or report of medical examination indicates the existence of a condition that may be harmful to members of the university community.

## Validity of Submitted Documents

If the university finds that an applicant has made a false or fraudulent statement or a deliberate omission on the application, residency affidavit, health report, or any accompanying document or statement, that applicant will be denied admission. If the student is enrolled when such fraud is discovered, the student may be immediately withdrawn (with no refund), denied further enrollment, and invalidated on credit and any degree based on such credit. International students may face deportation. Actions for this type of offense are handled administratively by the Division of Student Development and Enrollment Services after notification to the alleged violator and hearing by that office.

## Deadline for Supporting Documents

If the program has a specific deadline, the application and all supporting documents must be received electronically by that deadline (see the Graduate Programs section in this catalog). For all other programs and nondegree applicants, the application and all supporting admissions documents should be received by the UCF College of Graduate Studies no later than July 15 for fall admission, December 1 for spring admission, or April 15 for summer admission. For international applicants, all supporting application documents should be received by the UCF College of Graduate Studies and all documents required to issue an I-20 be received by the International Service Center no later than January 15 for Fall admission, July 1 for Spring admission, and November 1 for Summer admission. In some cases, applicants may be allowed to register on a temporary basis (without all records), assuming it can be determined from available records or consultation with the students that they appear admissible. Failure to submit records by mid-term of the first semester will result in registration holds for all succeeding terms. Transcripts should be sealed in an envelope by the registrar of the former institution and mailed directly to the UCF College of Graduate Studies.

## Change of Major

When students wish to change their major or college, after having applied to a graduate program, they must file a new online application and submit supporting documentation for their intended new program at the UCF College of Graduate

Studies and pay the application fee. The program coordinator of the new program will then decide whether to admit the student.

## Second Master's Degree

Individuals seeking a second master's degree must file a separate online application and application fee for that program and complete the normal UCF master's degree application requirements for the second degree.

Up to nine semester hours from a completed master's program at UCF or any other institution may be transferred into a second master's program if the courses are not more than seven years old when the second degree is completed.

## Admission Decisions

After receiving all official transcripts, standardized test information, and other documents required by the program, the degree program will make an admission decision. Admission to graduate status can be in one of seven categories: regular, conditional, provisional, provisional/restricted, provisional/conditional, restricted, or restricted/conditional status. Applicants should contact the program directly for admission decision information.

## Admission Classifications

### Graduate Status—Regular

All students who wish to be admitted in regular degree-seeking status or nondegree-seeking status must submit a final, official transcript from a regionally accredited US institution or its equivalent from a foreign institution. All students who wish to be admitted in regular degree-seeking status to a doctoral program or wish to be considered for university-wide fellowships must also submit an official GRE General Test score or an official GMAT score as required. The minimum university requirements for admission to regular graduate status are listed below. Individual graduate programs may specify additional requirements.

- A bachelor's degree from a regionally accredited U.S. institution or its equivalent from a foreign institution and a GPA of 3.0 or more (on a 4.0 maximum) in all work attempted while registered as an undergraduate student OR while registered as an upper-division undergraduate student (normally based

on the last sixty attempted semester hours);  
OR, a graduate degree or professional degree or equivalent from a regionally accredited U.S. institution or its equivalent from a foreign institution in a field related to the discipline of the program to which the student is applying.

- Students applying to doctoral programs must submit a competitive score on the General Test of the Graduate Record Examination or a competitive score on the Graduate Management Admission Test (as required) or an equivalent score on an equivalent measure approved by the graduate program and the university.
- Students applying to doctoral programs must also submit three letters of recommendation, a resume or curriculum vita, and a written essay.
- A student must be accepted by the program director offering the particular degree program sought and the College of Graduate Studies. Graduate programs are encouraged to have more restrictive admission requirements than the minimum university requirements. Program requirements may be based on other factors such as work experience, research interests of the prospective student, evidence of extracurricular or community work, personal interviews, or other factors specified by the program.
- International students must demonstrate their proficiency in the English language. International students, except those who are from countries where English is the only official language, those who have earned a degree from a regionally accredited US college or university, or those who have earned a degree from a country where English is the only official language or a university at which English is the only official language of instruction, are required to submit a score on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) before they can be admitted to the university. A computer-based TOEFL score of 220 or 80 on the internet-based TOEFL (or equivalent score on the paper-based test) or 6.5 on the IELTS is required unless otherwise specified by the program.
- International students applying to master's programs that do not require a GRE or GMAT, must submit a course-by-course evaluation of their official transcripts from a credential evaluation service recommended by UCF. This course-by-course evaluation must show a GPA that is equivalent to a 3.0 from an earned

degree that is equivalent to a U.S. bachelor's degree.

### **Graduate Status—Conditional**

A student who meets the minimum university requirements for regular admission (as listed above) but has not submitted all required documents may be admitted conditionally upon recommendation of the program director to which admission is sought and the College of Graduate Studies. Conditions must be met by mid-term of the first semester or the student will be prevented from registering for future semester classes.

### **Graduate Status—Restricted**

Even though minimum university requirements are met, a graduate program may attach restrictions to the admission of an applicant, such as higher GPA requirements, completing a standardized test, completing certain prerequisite courses, maintaining a certain GPA in the first few hours of a graduate program, etc. Students may be denied admission to regular graduate status if the restrictions are not met.

Students who have a graduate GPA less than 3.0 in a degree program at UCF and are admitted into a new degree program will be admitted into the new program in restricted status

### **Graduate Status—Provisional**

A student who does not fulfill the minimum university requirements for regular admission (as listed above) may be admitted provisionally upon recommendation of the program director to which admission is sought and the College of Graduate Studies.

Provisional students may be admitted to regular status following satisfactory completion of nine semester hours, in the graduate program and upon recommendation by the program director and Vice Provost and Dean of the College of Graduate Studies.

### **Graduate Status—Restricted/ Conditional**

Even though minimum university requirements are met, a program may attach restrictions to the admission of an applicant, such as higher GPA requirements, completing a standardized test,



completing certain prerequisite courses, maintaining a certain GPA in the first few hours of a graduate program, etc. Students may be denied admission to regular graduate status if the restrictions are not met. The student also has not submitted all required documents for admission. All required documents for admission must be submitted by mid-term of the first semester or the student will be prevented from registering for future semester classes.

### **Graduate Status—Provisional/Restricted**

A student who does not fulfill the minimum university requirements for regular admission (as listed above) and has not met the graduate program's specific requirements may be admitted in provisional/restricted status upon recommendation of the program director to which admission is sought and the College of Graduate Studies. A graduate program may attach restrictions to the admission of an applicant, such as higher GPA requirements, completing a standardized test, completing certain prerequisite courses, maintaining a certain GPA in the first few hours of a graduate program, etc.

Provisional/restricted students may be admitted to regular status following satisfactory completion of nine semester hours, in the graduate program and upon recommendation by the program director and Vice Provost and Dean of the College of Graduate Studies AND satisfactory completion of the graduate program's restrictions. Students may be denied admission to regular graduate status if the graduate program's restrictions are not met.

### **Graduate Status—Provisional/Conditional**

A student who does not fulfill the minimum university requirements for regular admission (as listed above) and has not submitted all required documents for admission may be admitted in provisional/conditional status upon recommendation of the program director to which admission is sought and the College of Graduate Studies.

Provisional/conditional students may be admitted to regular status following satisfactory completion of nine semester hours, in the graduate program and upon recommendation by the program director and Vice Provost and Dean of the College of Graduate Studies AND the submission of all required documents for admission. All required documents for admission must be submitted by mid-term of the

first semester or the student will be prevented from registering for future semester classes.

### **Nondegree-seeking Status**

Students are generally placed in this category at their request. International students are not eligible for nondegree status unless they hold an eligible visa status.

A student may elect to remain in nondegree status for various reasons (e.g., requirements in a graduate program at another institution, personal improvement, meeting job requirements, and removing academic deficiencies). While in nondegree status, students are allowed to take graduate courses, in some departments, on a space-available basis. Nondegree students may also enroll in specific graduate certificate programs. Not all departments accept nondegree students and the procedures for enrollment into graduate-level classes vary with each department. **Students should check with the individual departments or colleges before submitting an application and attempting to register.**

All students who take graduate-level course work while in nondegree status should be aware of the limit of 9 semester hours of graduate-level course work that can be transferred into a graduate degree program if a student is granted graduate status. Students who enroll in graduate-level course work in nondegree-seeking status will be placed on hold until they have signed and submitted a Nine-Hour Hold Release Form. Please visit the UCF College of Graduate Studies (Millican Hall 230) or your graduate program office to sign a Nine-Hour Hold Release Form.

In general, Nondegree-seeking students are not eligible for financial aid, assistantships, fellowships, or tuition support, although it is best to check with the Office of Student Financial Assistance for specific details.

### **Graduate Certificate Status**

Nondegree-seeking students or regular graduate students in a graduate degree program may enroll in one of UCF's graduate certificate programs. In all cases, certificate students must have earned a baccalaureate or higher degree, or equivalent, from a regionally accredited university. Unless they are also enrolled in a regular degree program, graduate certificate students are treated as nondegree seeking

students. Students who pursue both a degree and a professional certificate must sustain normal academic progress toward the degree program. International students on an F-1 visa are not accepted solely into a certificate program unless they are concurrently enrolled in the Intensive English Language Program at UCF or are attending UCF as a transient student and hold an I-20 from an approved institution.

## Nondegree to Regular Graduate Status

Nondegree students wishing to apply to a degree program must also file a new online application and application fee for that degree program. The new online application and all supporting documents must be submitted by the stated application deadline for the degree program. Students who have been admitted in provisional status in a degree program must file a new application if they wish to be accepted by a graduate program different from the program to which they were provisionally admitted.

## Appeals

According to state and university regulations, students who are not accepted by a program but who meet the University minimum standards for admission to graduate status are permitted to appeal that decision. The appeal procedure consists of the student writing a letter within thirty days of the date of denial to the program director indicating the desire to appeal and the reasons for the appeal. The program director may ask the department or program graduate committee to examine the necessary information and recommend a response to the appeal. The program director will recommend an admission action to the department chair.

Should the department chair deny the appeal, and there are new circumstances, facts, or other matters that the student feels warrants consideration, the student may request further consideration from the graduate college by writing a letter to the Vice Provost and Dean of the College of Graduate Studies indicating the desire to appeal further and the reasons why an appeal is sought. The Vice Provost and Dean of the Graduate College may ask the Graduate Council to examine the necessary information and recommend a response to the appeal. The decision of the Vice Provost and Dean of the College of Graduate Studies is final.

## REGISTRATION

UCF has instituted a new registration option that allows students to enroll for the entire upcoming academic year (3 semesters). This improves a student's ability to plan for upcoming terms and allows students more opportunity to make any necessary adjustments to registration. It is important for students to register for courses they plan to complete and fulfill requirements within their degree plan. Students are not required to register for all three terms during their initial appointment but the upcoming academic year will be available. For additional information regarding Multiple Term Registration (MTR), please visit the Registrar's Office webpage.

During each academic semester, registration is held for all new, currently enrolled, degree-seeking, and nondegree-seeking students for the following term. Registration sessions consist of Registration and Late Registration (held during the first week of classes each term).

Multiple term registration begins following midterm of the spring semester for the following summer, fall, and spring terms. Class listings are available only online through the Class Schedule Search at my.ucf.edu. The dates and times for each registration period are included in the Academic Calendar.

**Note: Newly admitted students (degree or nondegree) must register for classes in their first term in order to remain active. New students that do not enroll in classes in their first term will have their file inactivated and all future registration dropped. Once their file is inactivated, they will need to apply for reactivation by completing a new online application. Please refer to the Reactivation section above for more information about reactivating your application.**

## Online Registration

Registration is available over the web using the myUCF system at my.ucf.edu, and in the college advising offices.

## PID (Personal Identification Number)

Students obtain the Personal IDentification Number (PID) on their first login to myUCF at my.ucf.edu. The initial login will use a default password.

Following instructions, students choose a new password and reminder clue.

### **Schedule Web Guide**

The *Schedule Web Guide* is published online once a year by the Registrar's Office. The *Schedule Web Guide* provides the official "Academic Calendar" and describes the policies and procedures governing registration each term. The *Schedule Web Guide* is available on the Registrar's Office website.

### **Immunization Form**

All new first-term graduate students must have Immunization Forms completed before they are allowed to register at UCF. Holds placed on registration will be removed once the forms are received. Forms may be obtained on the UCF Student Health Services website.

### **Continuing Graduate Students**

Continuing graduate students register through myUCF or after the assigned appointment day and time, which can be found in myUCF. All continuing students should register early. For graduate students with fellowships or assistantships, failure to register early may result in delays in receiving assistantship paychecks and sometimes result in the loss of tuition waivers. Continuing graduate students registering for internship, independent study, thesis or dissertation hours, or research report hours must fill out a Registration Agreement form obtained from their adviser or department office. The college graduate office will normally register students into these courses.

### **Enrollment of International Students**

International students are required to seek advisement from the International Services Center (ISC) to ensure that their enrollment status meets full-time status in compliance with USCIS regulations. Students must obtain advisement from ISC before dropping or withdrawing from courses that would affect their enrollment status.

### **Nondegree-seeking Students**

Before registering, all Nondegree seeking students should check with the departments where they want to take courses in order to learn what is required for registration by that department. Certain classes are restricted, and it is best to find this out first. In the

College of Education, Nondegree-seeking students can ONLY register for 5000- and 6000-level classes. In the College of Business Administration, Nondegree-seeking students cannot register for graduate courses without prior approval. The College of Engineering and Computer Science will only allow Nondegree-seeking students to register with special approval from the program director. Nondegree seeking students who want to register for College of Arts and Humanities, College of Health and Public Affairs, College of Optics and Photonics, College of Sciences or Rosen College of Hospitality Management courses should check with the individual programs for more detailed information.

Nondegree seeking students must be registered for 12 hours to be considered full-time. Nondegree seeking students who already have certification elsewhere (i.e., from a College of Education in another state) are not eligible to receive financial aid. In general, Nondegree seeking students are not eligible for financial aid, assistantships, fellowships, or tuition support, although it is best to check with the Office of Student Financial Assistance for specific details.

Only up to nine hours taken in Nondegree-seeking status may be used toward a graduate degree and only upon approval from the academic advisor. Students who enroll in graduate-level course work in nondegree-seeking status will be placed on hold until they have signed and submitted a Nine-Hour Hold Release form.

### **Holds**

A hold (negative service indicator) may be placed on a student's records, transcripts, grades, diplomas or registration due to financial or other obligations to the University. Satisfaction and clearance of the hold is required before a release can be given. Students may check for holds on the myUCF system at my.ucf.edu. To obtain an immediate release for financial holds, payment to the Cashier's Office must be made either in cash, credit card, cashier's check, or money order.

To release College of Graduate Studies holds, the students must provide the outstanding document(s) to complete their records.

Students who are placed on nine-hour holds must sign a Nine-Hour Hold Release form provided by the College of Graduate Studies in order to release

the registration hold. This is to ensure that students are aware of the UCF policy that no more than 9 credit hours taken in post baccalaureate, nondegree seeking status are allowed in a graduate program of study should they be admitted in the future.

Please visit the UCF College of Graduate Studies (Millican Hall 230) or your college/graduate program office to sign a Nine-Hour Hold Release Form.

## **Audit Registration**

Audit students are those who desire to attend class(es) without receiving academic credit. Regular tuition and fees are assessed for audit registration. See “Tuition and Fees” for more information about the cost of auditing classes at UCF. Audit registration is on a space-available basis at the assigned time of Registration or at any time during Late Registration and Add/Drop when Late Registration fees will apply. Audit requests for students who register prior to this time will be denied. Students may not change to audit status after Late Registration and Add/Drop, but must remain in the course or withdraw through normal withdrawal procedures. New students must be accepted for admission. Audit forms, available on the Registrar’s Office website and in the Registrar’s and college advising offices, must be signed by the instructor and presented to the Registrar’s Office at the time of registration.

## **Senior Citizen Audit**

Senior citizens (60 years of age or older) who have been residents of the State of Florida for at least one year as of the first day of classes may enroll tuition free as audit students (i.e., no academic credit) on a space-available basis. Forms to be completed include the “Residency Affidavit,” the “Student Health History,” and the “Senior Citizen Audit Application” and “Senior Citizen Audit Registration Form.” These forms are available in the Registrar’s Office (Millican Hall 161) or at the Registrar’s Office website. It is necessary to complete the required forms during the last hours of registration as noted in the Academic Calendar. Direct student expenses after the completion of registration include the campus ID card, vehicle registration, and textbooks.

## **State Employee Registration**

State of Florida employee enrollment into courses

for which the employee will seek a tuition waiver will occur on a space-available only basis on the last day of registration each term at the time specified on the Academic Calendar. For waiver eligibility and application information, see the “Tuition Support” section.

## **UCF Employee Registration**

UCF employee enrollment into courses for which the employee will seek a tuition waiver will occur on a space-available only basis on the last day of registration each term at the time specified on the Academic Calendar. For waiver eligibility and application information, see the “Tuition Support” section.

## **State Tuition Exemption Program (STEP) (National Guard) Registration**

State Tuition Exemption Program (STEP-National Guard) students register on a space-available basis only. Registration is on a space-available basis during the last hours of registration as noted in the Academic Calendar. STEP students must present a “Certification” letter to the Student Accounts Office (MH 107) to receive waiver of eligible fees. Registration before the time specified in the Academic Calendar will result in the student being assessed regular fees. The tuition fee waiver cannot be used for courses that require increased costs, including, but not limited to courses offered through the Division of Continuing Education, independent study, supervised research, supervised teaching labs, thesis hours, dissertation, internships, co-ops, practicum, or applied, individualized instruction in music, art, or dance. Eligible members of the active Florida National Guard may receive a waiver of 50% of tuition and material and supply fees.

## **Fee Payments**

All graduate students must pay their tuition and fees by the published fee payment deadline. If a department or college has not recorded tuition support by then, students must pay all tuition and fees. If a department or college has waived partial tuition and it is recorded, then students must pay the remainder of the tuition owed and all of the fees by the published deadline. It is important for graduate students to register early to provide the department or college enough time to record tuition support.

## Fee Invoices

The “Fee Invoice” is your verification of registration. You are not assured of being registered for any class until you print out your Fee Invoice/Schedule. Your fee invoice lists your fees and the classes in which you are registered. Please print a new invoice if you drop or add classes so that the invoice will reflect changes in your fees. Newly admitted students should review their Fee Invoice carefully. If a “non-resident” rate is added to your bill and you believe this is in error, please contact the UCF College of Graduate Studies as soon as possible. For information on Florida Residency for Tuition Purposes please visit the “Financial Information” section of this catalog. If you wish to pay your fees by credit card, press the “ePay fees” button, which will take you to the UCF online credit card payment system. Be sure to have your current address on file (see “Address and E-mail Changes,” below).

You may print your “Fee Invoice” through myUCF at my.ucf.edu under the Student Accounts menu or at UCF Kiosks.

## Mandatory Health Information

In order for a student to register, the State University System of Florida requires:

- All students born AFTER 1956 to present documented proof of immunity to measles (rubeola).
- All students UNDER the age of 40 to present documented proof of immunity to rubella (German measles).
- All students (REGARDLESS OF AGE) to submit a signed medical history form. Distance learning students who will never come to UCF or an area campus are only required to submit the medical history form.

Students are not allowed to register without proper health information documentation. Please refer to the immunization form for specific details of requirements and acceptable documentation. If you have questions, contact the Immunization Coordinator, UCF Student Health Services (phone: 1-800-613-8544; fax: 407-823-3135; e-mail: pwagner@mail.ucf.edu. Office hours for UCF Student Health Services are Monday-Friday, 8:00 a.m. to 8:00 p.m., and Saturday, 10:00 a.m. to 5:00 p.m. (Holiday hours are 8:00 a.m. to 5:00 p.m.) Visit the UCF Student Health Services website for additional information.

## Name Changes

To change the legal name maintained on the student’s official UCF record, the student must submit a completed “Change of Name” form and supporting documentation to the appropriate UCF office. Attach to the form a copy of a legal name change document (e.g., marriage certificate, divorce decree, etc.). Undergraduate students must submit the form to the Registrar’s Office (Millican Hall 161). Graduate students must submit the form to the UCF College of Graduate Studies (Millican Hall 230). Current UCF employees and students who have been UCF employees within twelve months of the date the name change is requested must submit the form to the Human Resources Office (12565 Research Parkway). The “Change of Name” form is available from the Registrar’s Office website or in Millican Hall 161.

## Address and E-Mail Changes

To communicate in a more expedient manner, UCF uses e-mail as the primary means of notifying students of important university business and information dealing with registration, deadlines, financial assistance, scholarships, tuition and fees, etc., as described in Student Responsibility for University Communication in this catalog.

If the student’s address changes, it is the student’s responsibility to make the appropriate changes to the address through myUCF at my.ucf.edu or at any of the kiosks located on campus. Address and e-mail changes also can be made by submitting a Change of Address form or by writing the Registrar’s Office, P.O. Box 160114, Orlando, FL 32816-0114 or fax to 407-648-5022. Written requests must be signed and the student number provided. Address changes can also be made by writing the UCF College of Graduate Studies, University of Central Florida, P.O. Box 160112, Millican Hall 230, Orlando, FL 32816-0112 or fax to 407-823-6442.

## Transcript Requests

**For UCF students applying to UCF graduate programs:** You do not need to request transcripts of your UCF course work. The UCF College of Graduate Studies will request those transcripts internally.

Requests for official UCF transcripts are made through the Registrar’s Office (in person, by mail, or by fax). “Transcript Request Forms” are also

available on the Registrar's Office website. A student's academic record can be released only upon written authorization signed by the student. Telephone and e-mail requests are not accepted. Transcripts cannot be released if the student is on hold due to a financial obligation to the university. Transcript requests must include the student's signature, full name, identification number, and the name and complete address of the person(s) or organizations to whom transcripts are to be sent. If final grades or degree statement are needed, indicate that the transcript request is to be held until all requested data are posted.

A \$10 per transcript charge is assessed for each transcript request. Payment for official transcripts is required at the time of request and may be satisfied by cash, check or money order (made payable to UCF), credit card, or UCF Card. Requests received by mail must be accompanied by a check, money order, or credit card information (i.e., card type, card number, 3-digit Security Number, expiration date, and the name to which the card is registered.) Cash payments can be accepted only by the Cashier's Office during that office's regular business hours. The UCF Card payment option is available only at the main Orlando campus and must be made in person at the Registrar's Office (MH 161). Mail written requests for transcripts to: Registrar's Office, Attn: Transcripts, P.O. Box 160114, Orlando, FL 32816-0114. For fax request information and payment procedures, refer to the Registrar's Office website or call 407-823-3100. Transcripts may be sent electronically to other Florida public institutions. Transcripts not claimed with 30 days of printing will be discarded and must be reordered. A \$10 per reordered transcript fee must be submitted with the reorder request. Grades are available from myUCF.

## Enrollment Certifications

Students may obtain their enrollment online through myUCF. Enrollment certification is free to currently enrolled students. Parents, employers, background checking firms, and other third party agencies may request enrollment and degree verifications online at <http://www.degreechk.com/>. A fee will be assessed for all such requests. UCF has contracted with *Credentials, Inc.* to provide current enrollment, degree and past attendance verifications online 24 hours a day, seven days a week. *Credentials, Inc.* Customer Service is available at 1-847-446-1027, ext. 104 between 7:00 a.m. and 7:00 p.m. CST/CDT

Monday through Friday.

### Enrollment Status for Fall and Spring Terms

Nondegree-seeking		Degree-seeking	
Status	Credit Hours	Status	Credit Hours
Full	12 or more	Full	9 or more
Half	6, 7, 8, 9, 10, or 11	Half	4.5**, 5, 6, 7, or 8
LTHT*	less than 6	LTHT*	less than 4.5

### Enrollment Status for Summer Term

Nondegree-seeking		Degree-seeking	
Status	Credit Hours	Status	Credit Hours
Full	12	Full	6
Half	6	Half	3
LTHT*	less than 6	LTHT*	less than 3

\* LTHT = Less Than Half Time

\*\* 4.5 hours applies only to College of Business Administration credit hours.

**For students receiving university fellowships, assistantships, and tuition support,** see Full-time Enrollment Requirements in the General Graduate Policies section of this catalog.

**All Federal loan recipients** must enroll at least half time for each term that a loan is requested (that is, 4.5+ hours in fall/spring; 3+ hours in summer, regardless of classification). The in-school grace and deferment period of the loan remains as long as the student is enrolled at least half time. Nondegree-seeking students have different requirements and should contact the Office of Student Financial Assistance for specific information.

**Students on family insurance policies that require full-time status** must take at least 9 hours per semester in the fall and spring terms (6 hours in the summer term) to be considered full time. Students classified as nondegree-seeking must enroll in at least 12 hours of course work in order to be considered full time.

**VA Educational Benefits**—For degree and nondegree-seeking students, the VA benefits pay levels for credit hour enrollment are:

Full Fall and Spring terms	9	Summer term	6
<b>3/4</b> Fall and Spring terms	7 or 8	Summer term	4 or 5
<b>1/2</b> Fall and Spring terms	6* (4.5 **)	Summer term	3*

\* Tuition and Fee payments apply below these credit hours.

\*\* Applies to College of Business Administration credit hours.

## Withdrawal Policy

Withdrawal for each term begins after “Late Registration and Add/Drop” ends. Students may withdraw from a class and receive the notation of “W” until the date noted in the “Academic Calendar” of the *Schedule Web Guide*. A student may withdraw from courses using myUCF at <https://my.ucf.edu>, or by visiting the Registrar’s Office (Millican Hall 161), certain college advising offices, or a Regional Campus records office. Students may withdraw by fax at 407-823-5652. Faxed requests must be received by 5:00 p.m. on the last day to withdraw and must include the student’s identification number, the course(s) to be dropped, and the student’s signature. Students also may send a written request to the Registrar’s Office by mail (to P.O. Box 160114, Orlando, FL 32816-0114). This letter must be time-stamped or postmarked before the published withdrawal deadline and must include the student’s identification number, the course(s) to be dropped, and the student’s signature. Students seeking to withdraw in person must sign the request and must provide photo identification. The official date of withdrawal is the date the university receives the withdrawal request. Requests received by mail are processed using the postmark as the official date of withdrawal.

Withdrawing from classes may have financial aid, NCAA eligibility, or international Visa consequences. Students should seek appropriate advisement prior to withdrawing from a class.

A student is not automatically withdrawn from a class for not attending, nor can an instructor withdraw a student from a class. Upon request the instructor will provide the student with an assessment of the student’s performance in the course prior to the last day of withdrawal.

No withdrawal is permitted after the deadline except in extraordinary circumstances such as serious medical problems. Unsatisfactory academic performance is not an acceptable reason for withdrawal after the deadline. Students seeking to petition for a late withdrawal should consult the College of Graduate Studies (MH 230). At the time of the request, the College of Graduate Studies will ascertain from the instructor whether the student was passing or failing the course. If the student was passing, a “WP” will be recorded on the student’s permanent record; if failing, a “WF” will be entered. Medical and late withdrawals normally are for all courses taken in the semester.

Students who seek late withdrawal because they are ill must apply for the withdrawal within six months of the term from which the withdrawal is sought. Students seeking a late withdrawal because of medical conditions must follow the medical withdrawal procedure. The student’s physician provides the university with the appropriate medical information, using the forms available in the Office of Academic Services. A medical withdrawal must be for all classes in the term.

If a medical withdrawal is approved, a “WM” will be recorded for each course. Students who receive a medical withdrawal may be placed on hold until the university can determine that the student is ready to return. If a medical withdrawal is not approved, the request may be approved as a late withdrawal and grades of “WP” or “WF” will be recorded. A grade of “WF” will affect the calculation of the student’s grade point average.

Following the close of Late Registration and Add/Drop each term, students withdrawing from courses will incur both grade and fee liability. Students with circumstances determined by the university to be exceptional and beyond their control may apply for a cancellation of enrollment and the elimination of fee liability. Exceptional circumstances include, but are not limited to sickness, death, involuntary call to military service, or administrative errors created by the University. Students must submit a petition and all supporting documentation for a late Drop of courses to the College of Graduate Studies (Millican Hall 230; 407-823-2766) within six months of the end of the semester for which the late Drop is sought.

If a student withdraws from a course while an alleged academically dishonest act is under consideration, and the case is not subsequently

resolved in favor of the student, the university reserves the right to assign the appropriate grade for the course.

## Financial Support

Graduate students who will be supported on assistantships must contact their program coordinator to see that their employment contract form is filled out and to request tuition support. Paychecks are delayed when these arrangements are not made prior to the beginning of the semester. All graduate students who are receiving fellowships should register as early as possible so that payment arrangements can be made by the UCF College of Graduate Studies.

## Student Responsibility to Inform Offices

All graduate students who have financial aid, or who need financial support in order to attend UCF, should be sure to inform all appropriate offices of all changes in financial status. Remember to inform the departmental office, the Office of Student Financial Assistance, and the UCF College of Graduate Studies of all changes related to enrollment, graduate status, or financial support.

## Parking

All vehicles parked on campus, including evening students' vehicles, must be registered with the Parking Services Office and display the appropriate permit or decal. Parking Services offers assistance to motorists, including battery jump-starts and unlocking car doors. For more information see the Parking Services Office's website.

## Visitor Information Center

To park on campus without a decal, purchase a daily permit at the Visitor Information Center across from the Progress Energy University Welcome Center or from the pay-and-display machines on campus. Daily permits are valid only in student lots. Meters are also available in selected locations.

## RECORDS

Student records submitted to the university become the property of the university and cannot be returned to or copied for the student or released to a third party. Student records are digitally scanned.

## Family Educational Rights and Privacy Act (FERPA)

The procedures for protecting the confidentiality of student records are based on state regulations and the federal Family Educational Rights and Privacy Act of 1974. FERPA affords students certain rights with respect to their education records. They are:

1. The right to inspect and review the student's education records within 30 days of the day the University receives a written request for access. Students should submit to the University Registrar, dean, head of the academic department, or other appropriate official, written requests that identify the record(s) they desire to inspect. 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 rights to request the amendment of the student's education records that the student believes are inaccurate or misleading.

The student may ask the University to amend a record that he or she believes is inaccurate or misleading. The student should write the University official responsible for the record, clearly identify the part of the record to be changed, and specify why the current record is inaccurate or misleading. 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;

3. 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 that 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 education record in order to fulfill his or her professional responsibility; and

4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by a State University to comply with the requirements of FERPA. The name and address of the office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 400 Maryland Avenue, SW, Washington DC, 20202-4605.

## Directory Info

FERPA authorizes the University to classify certain information concerning students as “directory information,” which means that it may be released to anyone upon request. In accordance with Florida Statutes Section 228.093, the University is required to release student directory information to independent vendors upon request. Directory information at UCF includes

- name,
- current mailing address,
- telephone number,
- e-mail address,
- date of birth,
- major field of study,
- dates of attendance,
- enrollment status,
- degrees and awards received,
- participation in officially registered activities and sports
- athletes’ height and weight.

All other student information will be released in accordance with FERPA; in most cases this requires the student’s prior written and signed consent. The University extends to students the opportunity to withhold any or all information, including “directory information.” To do this, students must complete the appropriate form in the Registrar’s Office (MH 161), requesting that this information be withheld. The Golden Rule outlines

the University procedures for confidentiality. For additional information describing FERPA policy, enter the Department of Education Family Policy Compliance Office website.

## Higher Education Act

Lists, descriptions, and sources of information required for disclosure under the Higher Education Act may be obtained from the Registrar’s Office (Millican Hall 161) or from the Registrar’s website (Higher Education Act).

# Financial Information

- ◇ Overview
- ◇ Financial Support Requirements
- ◇ Graduate Fellowships
- ◇ Graduate Assistantships
- ◇ Graduate Tuition Support
- ◇ Tax Obligations
- ◇ Tuition and Fees
- ◇ Student Financial Assistance

## OVERVIEW

Graduate education provides personal enrichment and a deeper understanding of some aspect of the world around us, but also is an important investment in the future of a community. It is an investment on the part of the student that opens the door to new careers, wider choices of work assignments, and greater opportunities for advancement to higher paying jobs. It is also an investment on the part of the university and the community as a whole in the training of the next generation of workers, leaders, educators, innovators, and contributing citizens. Besides the time investment, a graduate student has financial expenses that include tuition and education-related fees, instructional supplies, and living expenses. UCF helps to offer the opportunities provided by graduate education at a very reasonable cost.

For a significant portion of the graduate student population at UCF, the process of learning and being trained for disciplines that require graduate-level education includes participating in the research, teaching, and community-building missions of the University. This partnership between graduate students and the University is recognized by both the University and the State of Florida by means of financial support in the form

of fellowships, tuition remission, and research and teaching assistantships. Many of the assistantship appointments represent professional opportunities as well as a means of financial support.

In order to qualify for fellowships, tuition remission, or assistantships, graduate students are expected to be enrolled full-time in a degree program and engaged in paid appointments that promote the missions of the University. The details of these requirements are described below.

## FINANCIAL SUPPORT REQUIREMENTS

Graduate students must meet all of the following requirements each term that they receive fellowships, assistantships, or tuition support:

Students must be accepted as a graduate student in a degree program and enrolled full-time. See "Full-time Enrollment Requirements." Nondegree-seeking students and students who are only admitted to a graduate certificate program are ineligible for UCF financial support.

Students must maintain good academic standing. See "Academic Progress and Performance."

In order to receive tuition support, students must be either graduate assistants (position codes 9181-9187), University Fellows, or be admitted as part of a formal, written University-approved agreement. The graduate assistant category includes the following types of appointments: Graduate Assistant (GA, Position Code 9185 or 9186); Graduate Teaching Assistants (GTA, Position Code 9184); Graduate Teaching Associate (GTA, Position Code 9183); Graduate Teaching Assistant-Grader (GTA, Position Code 9187); Graduate Research Assistant (GRA, Position Code 9182); and Graduate Research Associate (GRA, Position Code 9181). Full tuition support requires a qualifying, University fellowship, or a full-time contract appointment (0.5 FTE) (or the equivalent of at least 20 hours per week for those not on contract) and stipend level of at least \$6,600 for the academic year. Half-tuition support requires a half-time contract appointment (0.25 FTE) (or the equivalent of at least 10 hours per week for those not on contract) and stipend level of at least \$3,300 for the academic year.

Tuition support will be provided only for courses that are part of the student's program of study and necessary for progress toward the student's graduate degree.

Graduate fellowships have additional requirements. See "Graduate Fellowships" below.

## GRADUATE FELLOWSHIPS

UCF Graduate Studies awards more than \$2.5 million in university fellowships to provide financial support for the graduate education of over 300 graduate students each year. These fellowships are funded by university appropriations, endowments, and other outside sources.

Fellowships are awarded on the basis of academic merit to the most highly qualified applicants. Some fellowships are available only to applicants who are underrepresented in higher education in the State of Florida. For eligibility, students must be accepted as a graduate student in a degree program and enrolled full-time. See Full-time Enrollment Requirements. Students who are interested in being considered for a fellowship are strongly encouraged to apply for admission by the priority date and to communicate their interest in receiving a fellowship. Most fellowships require Graduate Program Directors to nominate students to the College of Graduate Studies through the college and program offices. All admitted graduate students are automatically considered in this nomination process. Other fellowships, however, require students to fill out a fellowship application. For more details about graduate fellowships, visit Financing Grad School at [www.graduate.ucf.edu](http://www.graduate.ucf.edu) or contact Graduate Studies at [gradfellowship@mail.ucf.edu](mailto:gradfellowship@mail.ucf.edu).

International students receiving fellowships are subject to up to 14 percent withholding on their fellowship payments. International students must obtain a Social Security Number (SSN) prior to receiving payment of a fellowship. More information on this issue can be obtained from the International Services Center ([www.intl.ucf.edu](http://www.intl.ucf.edu)).

### General Fellowship Requirements

- Students usually receive only one UCF fellowship per term, and students are eligible to receive a given fellowship only once (with the exception of the Delores Auzenne Fellowship).
- Fellowships are only awarded to highly qualified individuals who are admitted degree-seeking graduate students (regular or conditional admission) by the time the fellowship is awarded. Students on conditional admission status may be offered a fellowship, but must submit documentation required for

regular admission status prior to fellowship disbursement. Students on provisional and restricted admission status, nondegree-seeking (postbaccalaureate) students, and graduate certificate students are not eligible to receive fellowships.

All fellowships require full-time graduate enrollment. See Full-time Enrollment Requirements.

Fellowship students must make acceptable academic progress during each term of the award or the fellowship will be cancelled. See Academic Progress for Fellowship Recipients below.

Some fellowships have additional requirements, which are described in Financing Grad School at [www.graduate.ucf.edu](http://www.graduate.ucf.edu).

### Students Working Full Time

Students who are employed full-time in on-campus or off-campus jobs may not receive university fellowships, as UCF fellowship recipients are expected to be primarily focused on graduate study and related activities on campus (e.g., graduate assistantships, research activities, participation in professional organizations).

In addition, students receiving tuition assistance from another source (UCF Employee Tuition Voucher, State Employee Tuition Voucher, etc.) may not also receive a UCF graduate tuition waiver. Graduate assistants and fellows are not eligible to receive UCF Employee Tuition or State Employee Tuition Vouchers.

### Academic Progress for Fellowship Recipients

Fellowship recipients are required to be in good standing and to make satisfactory academic progress to continue to receive a fellowship award. To be considered in good standing, fellowship recipients are required to maintain the standards listed below.

- Fully accepted into a graduate degree program at UCF.

Enrolled as full-time graduate students. See Full-time Enrollment Requirements.

- Maintain a graduate status GPA of 3.0 each term of the award.
- Receive a satisfactory progress report from their academic adviser each term of the award.

- Cannot receive a grade of incomplete ("I") and continue to receive the award.

Failure to meet any one of these standards will cause cancellation of the fellowship. The College of Graduate Studies may grant rare exceptions to this policy after review of evidence of mitigating circumstances presented by the student and the graduate program.

### Graduate Fellowships

The following list identifies the fellowships offered by the university and the funding programs in which the university participates. Those for which Graduate Studies provides a tuition waiver are marked (TW). For the most current information regarding fellowships, students are encouraged to consult Financing Grad School at [www.graduate.ucf.edu](http://www.graduate.ucf.edu).

- UCF Trustees Doctoral Fellowship (TW)
- UCF Presidential Doctoral Fellowship (TW)
- McKnight Doctoral Fellowship (TW)
- UCF Provost's Graduate Fellowship (TW)
- UCF Graduate RAMP Fellowship (TW)
- UCF Graduate McNair Fellowship (TW)
- Summer Mentoring Fellowship (TW)
- GEM Fellowship (TW)
- Delores A. Auzenne Fellowship
- Florida A&M University Feeder Program (TW)
- FGAMP Graduate Fellowship
- AT&T Graduate Fellowship in Modeling and Simulation (TW)
- UCF Graduate Travel Award

### Fellowship Disbursement

Most graduate fellowships are disbursed through the Office of Student Financial Assistance, based on instructions provided by UCF Graduate Studies. Student Financial Assistance begins disbursing fellowship funds and other aid after the registration and add/drop period has ended (usually the second week into the term). For tuition charges covered by the fellowship, the tuition payment date will be deferred until fellowship disbursement. If students are not enrolled in full-time hours by the end of the add/drop period, their fellowship will be cancelled. Students are responsible for paying the balance of tuition and fees by the Payment Deadline published in the UCF Academic Calendar. Fellowship payment will first be applied to the student's account balance. Remaining funds will be disbursed to the student either as a check mailed to the current

mailing address of record or as a direct deposit into the student's account, if the student has provided the bank information in myUCF.

Students can check to see if fellowship payment has been applied to their account through myUCF. In myUCF, select "Student Accounts" to see awards that have been set up to pay against your account.

## **GRADUATE ASSISTANTSHIPS**

Graduate students often receive assistantships in their departments or other university offices while pursuing graduate studies. Graduate assistants may teach, conduct research, or perform other tasks that contribute to the student's professional development.

Graduate students may become Graduate Teaching Assistants (GTAs), Graduate Research Assistants (GRAs), or Graduate Assistants (GAs). For eligibility, students must be accepted as a graduate student in a degree program and be enrolled full-time. See Full-time Enrollment Requirements.

Both half- and full-stipend assistantships are available. Half-stipend assistantships require students to perform assistantship assignments for a minimum of 10 hours per week during the period of the assignment. Full-stipend assistantships require students to perform assistantship assignments for a minimum of 20 hours per week during the period of the assignment. University policy requires that graduate assistants (position codes 9181-9187) receive a minimum stipend of \$3,300 per academic year (fall and spring semesters) for half-stipend assistantships or \$6,600 per academic year (fall and spring semesters) for full-stipend assistantships. In rare circumstances, students may be appointed to assistantships with total hourly commitments that extend beyond the standard appointments. Requests for this exception must be submitted using the Supplemental Assignment Form (available at [www.graduatestudies.ucf.edu](http://www.graduatestudies.ucf.edu)). Departments vary widely in their normal stipend rates.

Specific eligibility and application guidelines for graduate assistants are established by the colleges and departments. To apply for an assistantship, students should contact their Graduate Program Director in the department of study. (For your Graduate Program Director's e-mail address and telephone numbers, see the "Contact Info" in the Graduate Programs section of this graduate catalog.)

Part-time students (those registered for less than 9 hours in fall and spring terms, less than 6 hours in summer term) and nondegree students are not eligible to receive assistantships.

## **ASSISTANTSHIP PAYMENT**

Graduate students who have assistantships receive biweekly payments following the schedule set by Human Resources. If a student receives an assistantship from more than one office, the student receives one payment combining the amounts paid by each office. Assistantship payments do not show as credit on the student's term bill; they do not defer tuition and fees. Students are responsible for paying the balance on their term bill by the payment deadline published in the Academic Calendar.

Graduate students on assistantships should be aware of the Internal Revenue Service guidelines for exemption from FICA withholding taxes. For more information, please see the UCF Human Resources website ([www.hr.ucf.edu](http://www.hr.ucf.edu)) and the "Tax Obligations" section below.

## **Graduate Research Assistants**

Graduate research assistants may assist professors with research activities, participate in research efforts in university institutes and centers or in off-campus projects affiliated with the university, or perform other research-related duties. They may also be assigned to nonacademic university offices such as Academic Affairs, University Analysis and Planning Support, and Operational Excellence and Assessment Support.

Graduate research assistants are typically supported by grants and contracts but may also be supported by departmental funds.

## **Graduate Assistants**

Graduate assistants may assist in general office tasks and services not involved in teaching or research assignments for colleges or departments. They may also be assigned in nonacademic university offices such as the Registrar's Office, Career Services, and Recreation and Wellness Center. It is expected that GAs who receive hourly payments will receive a minimum of \$10.62 per hour.

## Graduate Teaching Assistants

Graduate teaching assistants may be assigned as classroom teachers, co-teachers or classroom assistants, graders, lab assistants, or other roles directly related to classroom instruction.

### Graduate Teaching Requirements

- Students must have completed at least 18 hours of graduate courses in the discipline prior to being assigned as an instructor of record or teaching independently at the university. Graduate Teaching Associates may not teach graduate courses.
- New graduate teaching associates, assistants, and graders are required to satisfy the UCF GTA Training requirements before beginning their assistantship assignment. Graduate teaching associates must attend Days 1-2 of the GTA Training sessions presented by the Faculty Center for Teaching and Learning and complete the GTA Policies and Procedures Module online. Graduate teaching assistants must attend Day 1 (Day 2 is optional) of the GTA Training sessions and complete the GTA Policies and Procedures Module online. Graduate teaching graders must complete the GTA Policies and Procedures Module online.
- Students with access to student records must maintain the confidentiality of all student records and information. Failure to do so will result in immediate dismissal.
- All graduate students involved in classroom instruction who received their undergraduate degrees from a foreign institution must prove their facility with spoken English. See "English-speaking Ability for Graduate Teaching Assistants" below for more information.

For more information regarding GTAs at UCF and registration for GTA Training and SPEAK testing, see GTA Information.

### English-speaking Ability for Graduate Teaching Assistants

The English-speaking skills of graduate students with English as a second language who plan to serve as graduate teaching assistants (GTAs) will be evaluated as part of the GTA Training that is offered each semester. This requirement applies to all students from countries where English is not the native language; however, such students will be exempt if they have completed a previous degree

from an accredited U.S. college or university. Only exempted students and those who have attended the UCF GTA Training and satisfactorily passed the evaluation of their English-speaking skills may be assigned as GTAs.

English-speaking ability will be evaluated using the SPEAK test provided by the Educational Testing Service. If students do not pass this evaluation administered as part of the GTA Training, they are required to complete course work to improve their English-speaking skills through the Center for Multilingual Multicultural Studies. As needed, the university will provide each student one or two month-long sessions with post-evaluations. If students achieve a satisfactory post-evaluation following the first session, they may be assigned as GTAs. Otherwise, students must complete the second session and a second post-evaluation. Students who require more than two sessions to speak English effectively will have to rely upon personal or department resources to pay for additional course work and post-evaluations.

### Assessment of Graduate Teaching Assistants

All Graduate Teaching Assistants will be evaluated on their teaching each semester using the GTA Performance Assessment Form provided by the College of Graduate Studies. The assessment must be completed by the faculty member who is supervising the GTA in teaching and sent to the College of Graduate Studies by the end of the semester. Completion of the form constitutes a summary assessment based on prior classroom visits, informal observations, input from students, discussions with the GTA, and other evidence of performance. Each semester, the supervising faculty member is required to meet with the assistant to discuss the assessment.

Assistantship contracts will not be approved for supervising faculty who fail to submit assessments for their GTAs.

Use of the assessment is at the discretion of the department in reassigning or continuing the student in their GTA position.

## Employment of International Students

For information regarding the employment of international students, see International Students in the Admission and Registration section of this catalog.

## GRADUATE TUITION SUPPORT

Graduate students who serve as graduate assistants or receive fellowships may also receive tuition support as part of their financial package. Tuition support usually pays the matriculation fee ("in-state" tuition) and, for nonresident students, the out-of-state tuition fee (charges for student course hours); it does not usually include payment of local fees (health fee, athletic fee, etc.). Tuition support is generally described in the student's letter of admission and statement of financial awards. Students should contact their program of study (department) if they have questions about the tuition support that will be provided.

Certain fellowships also provide tuition support. Students should review the letter offering the fellowship and the terms of the award to see if tuition support is included. Students should review the fellowship descriptions in order to determine which fellowships include tuition support. Specific questions concerning the amount of tuition that might be included with a given fellowship may be directed to UCF Graduate Studies at [gradfellowship@mail.ucf.edu](mailto:gradfellowship@mail.ucf.edu).

**Note:** Students receiving tuition assistance from another source (UCF Employee Tuition Voucher, State Employee Tuition Voucher, etc.) may not also receive a UCF graduate tuition waiver.

### Student Obligations

**Student drops or withdraws from a course but remains full-time.** If a student drops or withdraws from a course for which a tuition waiver has been received but remains full-time, the tuition waiver will be removed and the student must pay for the tuition for that course. Holds on student records will prevent students from registering for classes, receiving transcripts, or receiving grade reports until the payment is received. However, if the student remains full-time by enrolling in a course to replace the one being dropped or withdrawn from, the student is not required to pay the tuition waiver to the university (assuming the new course is acceptable in the Program of Study).

**Student drops or withdraws from a course and becomes part-time.** If a student drops or withdraws from a course for which a tuition waiver has been received and becomes part-time as a result, the tuition waiver will be removed and the student

must pay for tuition. Holds on student records will prevent students from registering for classes, receiving transcripts, or receiving grade reports until the payment is received. (In extreme cases, a student may request an exception to this policy.)

**Student is dismissed or resigns from assistantship.** Students with tuition waivers who are dismissed from the university or resign from their graduate assistantship (GA, GTA, or GRA) at any point during the term will have their tuition waivers removed and must pay for tuition.

### Requesting Tuition Waivers

Upon the recommendation of program and college offices, UCF Graduate Studies assigns tuition waivers to qualifying graduate assistants. Tuition may also be paid from departmental or grant and contract accounts. Students should discuss their tuition support needs with their Graduate Program Director.

### Students with Positions in Nonacademic Units

Students with positions as graduate assistants (GA or GRA) in a nonacademic office may also be eligible to receive graduate tuition waivers, if the student meets the requirements and support is available. Students should discuss their tuition support needs with their nonacademic office supervisor.

Contact UCF Graduate Studies if you are unsure if the office is considered nonacademic.

### Tuition Waiver Payment

All tuition support will be posted to your student account through the Office of Student Accounts, based on instructions provided by UCF Graduate Studies for graduate tuition waivers or by the program or college for tuition payments. Upon enrollment in full-time hours, students receiving tuition support will have their tuition deferred for the amount of the award. Students are responsible for paying the remaining balance of tuition and fees by the Payment Deadline published in the UCF Academic Calendar.

## TAX OBLIGATIONS

All students must obtain a Social Security Number (SSN) in order to receive payments from the

university, including fellowships, assistantships, and tuition support. Students are responsible for determining their tax obligations. For forms and information, students should contact the Internal Revenue Service (1-800-829-1040) or consult their personal tax adviser.

For more information on international students and tax obligations, see International Students in the Admission and Registration section of this catalog.

## FICA Exemption Guidelines

The Internal Revenue Service (IRS) excludes certain types of student wages from the IRS definition of "employment" for purposes of FICA tax withholding. The Internal Revenue Code (IRC) 3121[b][10][B] provides that wages paid by a university to one of its student employees who is enrolled at least half-time and regularly attending classes are exempt from the FICA tax withholding. The university has the sole discretion to determine whether a student's employment at UCF is exempt from FICA withholding taxes.

The university provides assistantships for graduate students to gain research and/or teaching experience as part of their education toward a graduate degree. Graduate assistants are defined as those with pay classifications of 9181-9187.

To be eligible for this IRS exemption, a graduate assistant must:

- Be enrolled at least half time at UCF
- Attend classes regularly

Under this classification, services that are performed by graduate students as a general rule qualify as incidental to their primary purpose of pursuing a course of study at the university.

### Criteria for FICA Exemption Eligibility

- Graduate students are eligible for the FICA exemption only if they are enrolled at least half time. Graduate students are considered half-time when they are registered for at least 4.5 hours in fall or spring terms, at least three hours in the summer term, or enrolled in at least three hours of thesis or dissertation work during any term after completion of course work and before completing degree requirements.
- Generally, students who are only on fellowship support are not subject to FICA taxes, since they do not have to account for hours of employment per week.

- Graduate students will be exempt from FICA/Medicare taxes during pay periods that overlap with the academic term and during breaks of less than five weeks. Graduate students who are not enrolled for longer than five weeks and employed by the university are subject to FICA.

## TUITION AND FEES

### STUDENT ACCOUNTS OFFICE

Associate Controller: Dan Mayo  
Millican Hall, Room 107  
Phone (407) 823-2433

### General Information

The Office of Student Accounts is here to serve the students who attend the University of Central Florida by maintaining accurate financial records and communicating with students concerning their accounts.

The Student Accounts Office is responsible for:

- Tuition and Fee Assessment/Refunds (Student Accounts, MH 107)
- Processing Payments (Cashier's Office)
- Overdue payment and institutional loans collection (Loans and Collections)

**Schedule of Fees** ([www.iroffice.ucf.edu/character/current\\_tuition.html](http://www.iroffice.ucf.edu/character/current_tuition.html)).

**NOTE: 2008-2009 tuition and fees were not established at the time of this publication. Rates for the 2008-2009 academic year will be available in early July 2008. Fees are subject to change without notice.**

**Tuition and Fees:** Tuition and fees are established by the state legislature and the UCF Board of Trustees and are subject to change without notice. Fees are affected by residency status. Tuition and fees are charged per semester or term for main campus, regional campus, and continuing education courses. Tuition is assessed on a per credit hour basis. Students classified as zero-hour registration students are assessed one credit hour at the Florida Resident Tuition rate at the course level for which the student is registered.

**Fee Invoice:** A printed fee invoice confirms fees and course registration. Fee invoices are available on the web [www.my.ucf.edu](http://www.my.ucf.edu) kiosks, and from the student's college advising offices. Students

must obtain a current fee invoice prior to making payment at one of the payment locations. Fee invoices **are not** mailed.

**Fee Payment Deadlines:** All university tuition and fees must be paid by the published dates. Tuition and fees not paid by the payment deadline date for each term will result in late fees and could result in the cancellation of all classes.

**Limited Non-Degree Enrollment Classes:**

Payment guidelines for Limited Non-Degree enrollment classes can be found on the "Registration Form for Non-Admitted Students." It is the student's responsibility to officially drop or withdraw from courses so as to avoid additional financial obligations.

## Student Financial Responsibility Statement

Registration at UCF requires students to acknowledge the following financial responsibility statement: "I accept responsibility for payment of my term tuition and fees by the published deadline. I understand that if I do not pay my tuition and fees or do not pay these fees by the due date, I will be charged a \$100 Late Payment Fee, my records will be put on hold, my account will be referred to a collection agency, and I may incur other financial consequences."

## Payment Procedures

Payment must be received or postmarked no later than the fee payment deadlines specified to be considered on time. Non-cash payments (checks and money orders) placed in the 24-Hour Depository by the official fee payment deadline will be considered on time. **Payments cannot be transacted by telephone.**

**Acceptable Forms of Payment:**

- Cash (Main Cashier's Office)
- Checks
- Credit Cards

E-Pay (<https://my.ucf.edu>)—E-Check or credit card—nonrefundable \$10 convenience fee per transaction. Payments made at anytime on the date of the published fee payment deadline will be considered on time.

Mail—Please do not send cash—Include the student's PID on checks and money orders.

Address payments to:

University of Central Florida  
P.O. Box 160115  
Orlando, FL 32816-0115

**Payment Locations (refer to [fa.ucf.edu](http://fa.ucf.edu) for hours):**

Cashier's Office - Main Campus, MH 110—(407) 823-2614

Cashier's Office - Brevard Campus (BCC Cocoa Campus), BLDG 11 Room 204—(321) 433-7615

Cashier's Office - Daytona Beach Room 105 (no cash)—(386) 506-4073

Cashier's Office - Palm Bay Room 115 (no cash)—(321) 433-5187/5188

24-Hour Depository - Millican Hall at Reflection Pond Entrance (no cash)

Cashier's Office - Rosen College Campus Room 201A (no cash)—(407) 903-8187

Credit card payments may be made online, through myUCF E-Pay (<https://my.ucf.edu>), or at any of the Cashier's Offices.

A mandatory, nonrefundable \$10 convenience fee will be charged each time a student chooses to pay tuition or other state-mandated fees with a credit card through E-Pay.

## Other Forms of Payment

Tuition and Fees may be partially or completely paid by financial aid, Florida Prepaid, tuition Waivers, or departmental grants. The student is responsible to pay any amount that is not covered by these types of payments by the fee payment deadline as described under Payment Procedures.

**Financial Aid—see Student Financial Assistance for rules and procedures.** All fees not covered by financial aid are due by the fee payment deadline.

## Florida Prepaid College Plan

For any enrolled student who has a Florida Prepaid College Plan, the university automatically will defer only the portion of the tuition covered under the plan. All fees not covered by the plan are due by the



fee payment deadline. If the student does not wish to utilize the Prepaid Tuition Plan, the student must notify the Student Accounts Office (MH 107) by the last day of Add/Drop.

The standard plan will pay \$86.01 per credit hour (graduate or undergraduate level) for the 2007-2008 academic year. The plan does not cover the local fees of \$36.57 per credit hour, material/supply fees or the UCF ID Service and Access fee. Florida Prepaid with the local fee plan, which is indicated on the Florida Prepaid Tuition Plan card, will cover \$115.49 per credit hour. For further details on the Florida Prepaid Tuition Plan, please visit our website at [www.fa.ucf.edu](http://www.fa.ucf.edu), select Forms, then Student Services and scroll down to Florida Prepaid Tuition Plan Procedures.

**NOTE: The 2008-2009 tuition rates had not been established at the time of publication.**

## Tuition Waivers

### State of Florida Employees Tuition Waiver

Full-time state employees may be allowed to enroll for up to six (6) credit hours of eligible instruction per term on a space-available basis without payment of tuition and fees. State Employee registration occurs on the last day of regular Registration for each term, at the time specified on the Academic Calendar for each term. Should the employees register for the courses to which the waiver will apply prior to the prescribed date and time, the fee waiver will be invalid and the employee will be liable for all applicable fees. The tuition waiver cannot be used for courses that have increased costs. These courses include, but are not limited to, continuing education courses, independent study, supervised research, supervised teaching labs, thesis hours, dissertation, internships, practicums, third attempt repeat course and surcharges, co-ops, or applied individualized instruction in Music, Art, or Dance, etc. Any state employee who uses an Employee Tuition Waiver for approved courses must submit a completed and signed tuition waiver form to the UCF Student Accounts Office (MH 107) by each term's fee payment deadline. See the Academic Calendar for each term for the fee payment deadlines. **Prior to enrolling** into courses each term, refer to the Registrar's Office website for eligibility requirements, course restrictions and the waiver application form. Students may list alternate courses on their waiver form to substitute for preferred courses that are completely filled. Courses

that are not listed on the waiver form cannot be waived.

### UCF Employees Tuition Waiver

All full-time general faculty, administrative and professional (A&P), and staff (formerly called USPS) employees of the University of Central Florida who are employed in an established position on the date fees are due and who meet academic requirements, including those employees on sabbatical, professional development, grants-in-aid, and educational leave, may be allowed to enroll for up to six (6) credit hours of eligible instruction per term on a space-available basis without payment of tuition and fees. UCF Employee registration occurs on the last day of regular Registration for each term, at the time specified on the Academic Calendar Academic Calendar for each term. Should the UCF employees register for the courses to which the waiver will apply prior to the prescribed date and time, the fee waiver will become invalid and the UCF employee will be liable for all applicable fees. The tuition waiver cannot be used for courses that have increased costs. These courses include, but are not limited to, continuing education courses, independent study, supervised research, supervised teaching labs, thesis hours, dissertation, internships, practicum's, third-attempt repeat courses and surcharges, co-ops, or applied individualized instruction in Music, Art, or Dance, etc. Any UCF employee who uses an Employee Tuition Waiver for approved courses must submit a completed and signed Tuition Waiver Form to the UCF Student Accounts Office (MH 107) by each term's fee payment deadline. See the Academic Calendar for each term for the fee payment deadlines. **Prior to enrolling** into courses each term, refer to the Human Resources website for eligibility requirements, course restrictions and the waiver application form. Students are encouraged to list alternate courses on their waiver form to substitute for preferred courses that are completely filled. Courses that are not listed on the waiver form cannot be waived.

### Tuition and Fees for Senior Citizens

Persons 60 years of age or older who meet Florida residency requirements may register to audit classes on a space-available basis without payment of tuition and application fees. Registration is on a **space-available basis**; see the appropriate term's Academic Calendar for registration dates and times. The tuition fee waiver cannot be used

for courses that require increased costs (such as thesis, dissertation, and directed individual study). A "Florida Residency" Affidavit is required to establish Florida residency. A completed "Student Health History" form must be filed prior to registration. Inquiries should be directed to the Registrar's Office (MH 161; Telephone (407) 823-3100).

## Refund of Fees

A refund of fees will be processed under the conditions noted below. The student must submit a written appeal for a refund or other appeal action to the university within six months of the close of the semester/term to which the refund or other appeal action is applicable. Any debts to the university will be deducted from the refund, up to the full amount.

## Full Refund Eligibility

The following conditions allow a full refund: 1) A class is dropped before the end of the Add/Drop period; 2) Cancellation of a course by the university; or 3) The student is denied admission for any reason to a course offered by the university.

## Partial Refund (25%)

Twenty-five percent of tuition and fees is refundable when the student withdraws completely from the university prior to the end of the fourth week of classes during a 16- or 17-week semester, or at the end of the first quarter of classes during a summer session.

## Exceptional Circumstances

Refunds for exceptional circumstances are available upon a withdrawal from one or more courses. Up to 100 percent of tuition and registration fees are refundable if due to circumstances determined by the university to be exceptional, including, but not limited to, sickness, death, involuntary call to military service, or university administrative error.

## Direct Deposit

Students are strongly encouraged to establish direct deposit with the university. Direct deposit prevents delays due to lost checks or change of address. All refunds from students' accounts can be direct deposited into their checking accounts. Funds are usually available within 24-48 hours after disbursement and enrollment only takes a few minutes. To enroll, sign in at [my.ucf.edu](http://my.ucf.edu) and

click on Student Self Service. Click on the Student Accounts icon, and then click on Direct Deposit and follow the instructions.

## Past Due Accounts

All financial obligations to the university must be met. **Failure to meet obligations can result in the withholding and denial of registration, diploma, transcripts and readmission to the university.**

The services of a professional collection agency and recourse to the courts may also be invoked if deemed necessary. All costs of collection, including attorney's fees, are borne by the debtor.

Do not assume your registration will be canceled if you fail to pay fees or attend classes. Tuition deferrals, for example, will prevent class cancellation for nonpayment. Payment guidelines for off-campus registration are contained on the off-campus registration form.

## Late Fees

Late Payment Fees apply to students who do not pay their fees or who do not pay their fees (or obtain a full fee deferment) by the payment deadline. The Late Payment Fee is \$100 per semester.

Late Registration Fees are charged to students who enroll following the close of Add/Drop for the term, who re-register, or who enroll for the first time that term during Late Registration and Add/Drop. The Late Registration Fee is \$100 per term.

## Fee Appeals

Students who desire to appeal a Late Registration Fee, and/or a Late Payment Fee, may make their appeal to the Fee Appeals Committee by initiating a student petition (Form 41-561). This form can be obtained online at [www.fa.ucf.edu](http://www.fa.ucf.edu) (click Forms, Student Services and Fee Appeals Petition). Students must submit their petitions to Student Accounts (MH 107) and may appear before the Committee (not mandatory). Forms faxed to Student Accounts should be addressed Attn: Fee Appeals Coordinator (407) 823-6476.

## Holds

Holds due to unpaid tuition and fees that prevent registration and the receipt of transcripts will automatically be removed overnight once fees are paid.

## Administrative Procedures Act

The University of Central Florida, under applicable rules of the Administrative Procedures Act, may change any of the announcements, information, policies, and rules, regulations or procedures set forth in the online Web Enrollment Guide. Statements in the Web Enrollment Guide may not be regarded in the nature of binding obligations on UCF or the State of Florida. While every effort will be made to accommodate the curricular needs of students, limited resources may prevent the University from offering all required courses in each term or in day and evening sessions. Students should refer to the current Undergraduate Catalog or the Graduate Catalog for the complete Policy Statement.

## FLORIDA RESIDENCY FOR TUITION PURPOSES

At the University of Central Florida, three offices are responsible for the review of residency for tuition purposes under Florida Statute 1009.21 (formerly 240.1201) and Board of Regents chapter 6C-7.005. The offices of Undergraduate Admissions and Graduate Studies determine residency for all first-time-on-campus students; the Registrar's Office reviews student requests for changes in residency once the student is enrolled. A first-time-on-campus student will be classified according to the information he or she includes on the application for admission, providing that no other information is available that calls into question the information contained on the application.

To qualify as a Florida resident for tuition purposes in accordance with State regulations, the student must be a United States citizen, resident alien, parolee, Cuban national, Vietnamese refugee, or other refugee or asylee so designated by the United States Citizenship and Immigration Service,

**AND**

Have established a legal residence in this state and maintained that legal residence for 12 months immediately prior to the term in which they are seeking Florida resident classification. The student's residence in Florida must be as a bona fide domiciliary rather than for the purpose of maintaining a mere temporary residence or abode incidental to enrollment in an institution of higher education, and should be demonstrated as indicated

below (for dependent students, as defined by Internal Revenue Service regulations, a parent or guardian must qualify),

**AND**

Submit the following documentation (or in the case of a dependent student, the parent must submit documentation) prior to the last day of registration for the term for which resident status is sought:

1. Documentation establishing legal residence in Florida (this document must be dated at least one year prior to the first day of classes of the term for which resident status is sought). The following documents will be considered in determining legal residence:
  - A. Declaration of Domicile (**Note:** the Declaration of Domicile will support a claim of residency for tuition purposes only after a period of 12 months from the date that the Clerk of the Court notes that the declaration was sworn and subscribed to them.)
  - B. Proof of purchase of a home in Florida in which the student resides.
  - C. Proof that the student has maintained residence in the state for the preceding year (e.g., rent receipts, employment records).
2. Documentation establishing bona fide domicile in Florida which is not temporary or merely incidental to enrollment in a Florida institution of higher education. The following documents will be considered evidence of domicile even though no one of these criteria, if taken alone, will be considered as conclusive evidence of domicile:
  - A. Declaration of Domicile;
  - B. Florida voter registration;
  - C. Florida vehicle registration;
  - D. Florida driver license;
  - E. Proof of real property ownership in Florida (e.g., deed, tax receipts).

- F. Verification of permanent employment in Florida by the employer, employment records, or other employment-related documentation (e.g., W-2 paycheck receipts), other than for employment normally provided on a temporary basis to students or other temporary employment. The document must show 12 consecutive months of Florida employment prior to the first day of classes of the term for which the student requests Florida residency;
- G. Proof of membership in or affiliation with community or state organizations or significant connections to the State;
- H. Proof of continuous presence in Florida during periods when not enrolled as a student;
- I. Proof of former domicile in Florida and maintenance of significant connections while absent;
- J. Proof of reliance upon Florida sources of support;
- K. Proof of domicile in Florida of family;
- L. Proof of admission to a licensed practicing profession in Florida;
- M. Any other factors peculiar to the individual that tend to establish the necessary intent to make Florida a permanent home and that the individual is a bonafide Florida resident, including the age and general circumstances of the individual;
- N. Proof of graduation from a high school located in Florida.
3. No contrary evidence establishing residence elsewhere;
4. Documentation of dependent/independent status (notarized copy of most recent IRS tax return).
- OR**
- Be married to a person who has been a legal resident of the State of Florida for the required 12-month period and relinquish legal ties to any other state,
- OR**
- Be a member of the Armed Forces on active duty stationed in Florida, or a spouse or dependent,
- OR**
- Be a member of the full-time instructional or administrative staff of a state public school, community college or university in Florida, a spouse or dependent,
- OR**
- Be a dependent and have lived five years with an adult relative who has established legal residence in Florida,
- OR**
- Be a person who was enrolled as a Florida resident for tuition purposes at a Florida institution of higher education, but who abandoned Florida residency and then re-enrolled in Florida within 12 months of the abandonment,
- OR**
- Be a full-time Latin American or Caribbean student who receives scholarships from the federal or state government,
- OR**
- Be a United States citizen living on the Isthmus of Panama who has completed 12 consecutive months of college work at the Florida State University Panama Canal Branch, or a spouse or dependent,
- OR**
- Be a graduate student of the Southern Regional Education Board's Academic Common Market attending Florida's state universities,
- OR**
- Be a full-time employee of a state agency or political subdivision of the state when the student

fees are paid by the state agency or political subdivision for the purpose of job-related law enforcement or corrections training,

**OR**

Be a U.S. citizen who is a McKnight Doctoral Fellowship recipient,

**OR**

Be a qualified beneficiary under the Florida Pre-paid Post-secondary Expense Program per s.240.551(7) (a),

**OR**

Be an active duty member of the Canadian military residing or stationed in this state under the North American Air Defense (NORAD) agreement, or a spouse or dependent,

**AND**

Submit a statement as to the length of residence in Florida and their residency qualifications under the above criteria. Students requesting Florida residency for tuition purposes shall apply to the appropriate admissions office if they have not yet enrolled, or to the Registrar's Office if they already are enrolled.

**UCF Graduate Studies reserves the right to require additional documentation as seen necessary to accurately determine the residency status of a student.**

## **RESIDENCY RECLASSIFICATION**

Undergraduate Admissions and the College of Graduate Studies determine first term at UCF residency for tuition purposes for all newly admitted students. Thereafter, the Registrar's Office will review requests for changes in residency.

To request a residency review, the student must submit a completed "Residency Reclassification Request Form" and supporting documents to the Registrar's Office (Millican Hall 161). This form is available either at the Registrar's Office or online at <http://registrar.ucf.edu>. The reclassification form must be accompanied by all documents that support the student's Florida residency claim. Residency reclassification requests are subject to Florida Statute 1009.21 (formerly 240.1201), Florida State

Board of Education Administrative Code 6A-10.44, and State Board of Education rule 6C-7.005. In addition, university policy requires students requesting residency reclassification to provide documentation establishing that they have income or personal sources to meet financial obligations of attendance and living expenses. Contact the Registrar's Office at 407-823-3100 for additional information regarding all residency reclassification requirements.

When building a case for Florida residency for tuition purposes, the student may choose to submit documents from a variety of categories. Students may consult the Registrar's Office before submitting the reclassification request and supporting documents. The submission of documents in itself does not qualify the student for Florida residency for tuition purposes. The Registrar's Office will evaluate the submitted documents and available information and will render an eligibility determination. UCF is authorized to make discretionary judgments as to residency within the bounds of the law and in reaching this professional judgment will evaluate all documents submitted and information available. No single document shall be conclusive.

Students seeking residency reclassification should understand that living in or attending college in Florida is not tantamount to establishing residency in Florida for tuition purposes. The student who comes to Florida to enroll in a Florida post-secondary educational institution as an out-of-state resident and continuously enrolls in a Florida institution normally will not meet the Florida residency requirement for in-state tuition regardless of the length of time enrolled. Living or attending school in Florida merely evidences physical presence. The student must provide documentation verifying that he or she has formed significant legal ties to the State of Florida. This documentation must establish that the Florida residence constitutes a bona fide domicile rather than serving the purpose of maintaining a mere temporary residence or abode incident to enrollment in an institution of higher education. Evidence establishing legal ties to states other than Florida may disqualify the student from Florida residency for tuition purposes. All determinative documents must be dated at least 12 months before the first day of class for the term in which residency is sought.

New and continuing students who believe that they qualify for Florida residency must submit the

request and all documents prior to end of "Late Registration and Add/Drop" for the term in which Florida residency is requested. Documentation received after the last day of "Late Registration and Add/Drop" will not be used to determine residency for the current term. Approved residency reclassification **will not** be applied retroactively to previous terms.

The Registrar's Office may require additional documentation beyond that initially submitted by the student or the claimant before it can render a reclassification eligibility determination and it will not complete its review of the residency reclassification application until both the student and the claimant have submitted all requested documents.

## STUDENT FINANCIAL ASSISTANCE

### OFFICE OF STUDENT FINANCIAL ASSISTANCE

Executive Director: Mary H. McKinney  
 Millican Hall, Room 120  
 Switchboard: (407) 823-2827  
 Appointment: (407) 823-5285  
 Fax: (407) 823-5241  
 e-mail: [finaid@mail.ucf.edu](mailto:finaid@mail.ucf.edu)  
 Website: <http://finaid.ucf.edu>

#### Office Hours:

Monday: 9:00 a.m. - 6:00 p.m.  
 Tuesday/  
 Wednesday/Friday: 9:00 a.m. - 5:00 p.m.  
 Thursday: 1:00 p.m. - 6:00 p.m.

(Hours subject to change during holidays and semester breaks.)

The Office of Student Financial Assistance manages resources for all students. Once eligibility is determined, the office provides options for financial aid. Comprehensive counseling is available by appointment. Due to confidentiality, counseling by phone and e-mail is limited.

### Student Eligibility

To receive aid from most federal and state financial aid programs, students must meet certain requirements. All students are encouraged to complete the Free Application for Federal Student Aid (FAFSA) annually, before March 1, to determine eligibility for aid. The FAFSA results

are required for many programs. The federal processor, using a standardized formula, calculates financial need. Those results are then forwarded to the schools that were identified on the form as considered for attendance. UCF must be listed on the FAFSA in order to receive the data. UCF's Title IV Code is 003954. Regulations are subject to change at any time.

### Application Priority Date

All students must apply or reapply yearly for financial aid.

To be considered for the full range of financial aid available, students should complete the Free Application for Federal Student Aid (FAFSA)/ Renewal FAFSA by mid-February. The processed results of the FAFSA must be received by UCF by **March 1** to meet our application priority date.

- If the priority date is missed, students should apply as soon as possible after that date.
- Students should not wait to be admitted to UCF before applying for financial aid.
- Students who apply for aid after July 15 should not expect their aid to be paid until well after the beginning of the fall semester.

### Application Procedures

The FAFSA can be filed electronically at [www.fafsa.ed.gov](http://www.fafsa.ed.gov). A link is provided on the Web site and on myUCF, Student Center.

Messages from the federal processor should be reviewed thoroughly.

Review all correspondence, follow instructions on the Student Aid Report, and follow through promptly. Delays can be costly as well as frustrating.

Federal Regulations require that some students be selected for verification. If selected, students will be asked to provide documents supporting the information submitted on the FAFSA. Sometimes subsequent requests for data may be necessary after initial submissions are reviewed. Prompt response to requests for additional documentation will expedite completion of this process.

Offered federal funds and other need based financial aid are not considered firm until verification is complete and all necessary corrections have been made.

## Specific Eligibility Requirements and Conditions for Receiving Financial Aid

- Students must be accepted and classified as degree seeking at UCF in an eligible program.

For purposes of financial aid, enrollment is based on classes that count toward degree completion. To ensure enrollment in sufficient hours for the various financial aid programs, please refer to the Program Eligibility Charts on the Financial Aid web site.

Students must maintain UCF's Standards for Satisfactory Academic Progress.

Students are required to inform financial aid of any additional sources of aid they expect to receive beyond those listed on the award notification. Any subsequent awards or income may necessitate a revision of the financial aid award/s. This includes, but is not limited to, any private scholarships or third party tuition payments, departmental payments or waivers.

Students may not receive aid in excess of their cost of attendance.

Students must not be in default on any federal educational loan or owe repayment on a federal grant at this or any other institution.

Students must provide all information requested for the completion of their file. If selected, verification must be completed within specified deadlines and prior to the receipt of all federal and most state and institutional funds.

Students must notify the Office of Student Financial Assistance of any changes in their housing status, household size, or family members in college from that listed on their FAFSA.

Students must reapply annually for financial aid.

Students must complete an entrance interview for a Federal Stafford Loan if they are a first time borrower at UCF, or if they change lenders.

Students must be a U.S. citizen or an eligible non-citizen, (e.g. resident alien). Eligible non-citizens include I-151, I- 551, and I-688 cardholders as well as some I-94 classifications.

Students must have a high school diploma or GED certificate.

For need-based programs, students must show a financial need as computed on the FAFSA.

A male applicant must be registered with Selective Service, if applicable.

## Helpful Hints

Apply early to be considered for the full range of financial aid available each year by completing the Free Application for Federal Student Aid (FAFSA)/Renewal FAFSA. The processed results of the FAFSA must be received by UCF from the federal processor by **March 1** to meet our application priority date.

Make a copy of tax return forms before submission to IRS.

Start a folder to save financial aid information and photocopies of all documents filed and received. Include student's name and PID on all documents submitted. (Do not submit originals; documents will be shredded after scanning.)

Maintain a current e-mail and mailing address on myUCF at all times.

Complete all items on your myUCF, Student Center, To Do List.

Respond promptly to all information requests.

- If there are extenuating circumstances or problems at anytime, call the appointment line (407-823-5285) to meet with a counselor.

Comprehensive information can be found on the Office of Student Financial Assistance website.

## School Costs

Estimated student budgets have been developed as a guide to help students anticipate their costs at UCF.

**Estimated Cost of Attendance for 2008-2009**

(Full-time Fall/Spring)	Housing Status	
	Living with Parent	Other
Tuition/Fees	\$5,683	\$5,683
Books/Supplies	\$924	\$924
Room/Board	\$4,450	\$8,140
Personal Expenses	\$2,276	\$2,276
Transportation	\$1,800	\$1,800
<b>Total (In State)</b>	<b>\$15,133</b>	<b>\$18,823</b>
Nonresident Tuition/ Fees	\$15,272	\$15,272
<b>Total (Out of State)</b>	<b>\$30,405</b>	<b>\$34,095</b>

**Financial Aid Programs Available at UCF**

The Program Eligibility Charts on the website under "Receiving Aid" list the various programs and their specific enrollment requirements. Detailed information for each program can also be found on the website under its particular title.

**Loans** are borrowed funds that must be repaid. They provide students with an opportunity to invest in their future. Graduate students must be enrolled at least halftime in UCF classes that count toward degree completion to receive federal loans. Master's and Doctoral students must have a minimum of 4.5 hours per term for fall or spring, or 3 hours in the summer. Master's thesis and Doctoral dissertation students must have a minimum of 1.5 hours in all terms.

**Federal Work Study** is designed to provide students who demonstrate financial need, a chance to earn money while pursuing a degree. Individual departments hire students while the Office of Student Financial Assistance determines the eligibility, award amount, and pay rate.

**Scholarships and Fellowships** are awarded based on various criteria, including financial need, campus/community activities, leadership positions, academic success, and work experience. Scholarships are designed to reward, encourage, and assist students in pursuing academic excellence and leadership roles.

**Award Notification**

Award notifications are mailed to first time UCF students after March 15, while e-mail award notifications are sent to continuing students. Initial

awards may be amended due to factors such as contingent admission status, less than minimum hours enrolled, lack of academic progress, changes needed due to verification, incomplete files, additional resources, etc.

Student awards will be based upon the student's financial need. The amounts listed on the award notifications are estimates based on full-time enrollment. For purposes of financial aid, enrollment is based solely on classes that count toward degree completion. If a class is not required to earn a degree, then the hours of that class are not used to calculate a student's enrollment.

Admission to UCF must be finalized with no contingencies. Students must be classified as degree seeking.

Verification must be completed. Students must meet the Standards for Satisfactory Academic Progress. If all eligibility is met, financial aid funds may be disbursed.

It is the student's responsibility to be aware of minimal hourly requirements for each program, which can be found on the Program Eligibility Charts on the website. When requirements are no longer met, awards will be adjusted as necessary and will appear on myUCF. All awards are subject to change.

**Deferrals of Tuition and Fees**

Financial aid awards will normally result in a deferment of tuition and fee payments. Deferments allow for the time lag that normally occurs between the date that tuition and fees are due and the date on which financial aid disbursements are made, which is normally two to three weeks after the semester begins. Students are responsible to pay any amount owed to the university that is not covered by estimated aid and/or other resources by the payment deadline. The deferment process occurs automatically if the student is meeting all general eligibility requirements and has enrolled in sufficient hours for the financial aid program/s. Please refer to the Program Eligibility Charts on the Office of Student Financial Assistance website for more information. Students should use myUCF to obtain up-to-date information. Since awards are subject to change, deferments are also subject to change. Deferments based on estimated Stafford loans will be canceled prior to the beginning of the semester if the student has not completed the loan



application process. Students must drop classes prior to the end of add/drop in order to not be fee liable for those classes. If students do not drop their classes, a financial aid deferment may keep the classes active even if they are never attended.

## Disbursements

Financial aid disbursements begin the second week of each term. Students should be aware of this, so they are prepared to use their personal savings for anticipated expenses such as books and supplies at the beginning of the term. The Short Term Advance for books is available for students to help with these expenses. The application is available for download prior to each term, so that funds may be available as early as the first day of classes. Students who apply late for financial aid should be prepared to cover their own living expenses, out-of-pocket, well into the semester. When financial aid disburses, the funds first apply towards university debts. The remaining balance is refunded to the student one of two ways. If a student has provided his/her bank information to set up direct deposit, which can be done on myUCF, Student Center under Finances, then the refund is deposited into the student's account. Otherwise, a check is mailed to the student's current mailing address on myUCF.

## Satisfactory Academic Progress (SAP)

Federal regulations require the university to establish Standards of Satisfactory Academic Progress as a general eligibility requirement for financial aid. A student must maintain satisfactory academic progress in a course of study regardless of whether the student previously received financial aid.

To meet the standards adopted by the University of Central Florida, a student must:

- Complete a minimum of 70 percent of the attempted hours taken during the course of the year. Compliance with this requirement is checked at the end of each spring term. If students fail to meet this requirement or were not enrolled during the last monitoring period (fall/spring), a review of total hours taken at UCF will occur to determine if a 70 percent completion rate was attained for all attempted UCF course work. If students fail to pass both of these reviews, the student will be placed on Satisfactory Academic Progress cancellation

status, effective the following academic year, beginning fall term. Students on probation must meet standards each term.

- Graduate within the number of hours allowed by the Satisfactory Academic Progress policy. Students are allowed a specific number of UCF attempted hours, based on their academic level at the time of admission to UCF.

*(see chart below)*

Classification	Time Limit Allowed For Completion Degree
<b>Second Degree</b>	60 Attempted Hours
<b>Master's</b>	70 Attempted Hours
<b>Specialist</b>	100 Attempted Hours (including all Graduate Hours)
<b>Doctoral</b>	120 Attempted Hours (including all Graduate Hours)

For detailed SAP policy information, please refer to the Office of Student Financial Assistance website at: <http://finaid.ucf.edu>, Receiving Aid.

### Re-establishing Eligibility after Cancellation

Any student with extenuating circumstances, (i.e., death of a relative, an illness or injury of the student, etc.), who is placed on cancellation status may appeal to the Financial Aid Review Committee for reinstatement based on his/her special case.

If the student was canceled for the failure to complete 70 percent of the attempted hours and since cancellation, he/she has brought up the percentage to a minimum of 70 percent, the student may appeal to the above committee for reinstatement, at that time.

To appeal, the student must:

- Complete the Satisfactory Academic Progress Appeal Form; (available on the Office of Student Financial Assistance website at: <http://finaid.ucf.edu>, under forms.
- Attach documentation supporting specific circumstance(s) to the appeal form; and
- Submit the appeal and the supporting documentation to the Office of Student Financial Assistance

After a thorough evaluation of the written request and all supporting documentation, the Financial Aid Review Committee will notify the student of the decision by e-mail communication or the student

may view the updated status on myUCF, Student Center, under View Financial Aid Status.

## Over Awards

An over award occurs when a student's award package has exceeded either the unmet need or cost of attendance, depending on the type of aid that has been awarded. To prevent over awards, it is extremely important to notify the Office of Student Financial Assistance of any potential awards not already listed on the student's financial aid award summary on myUCF, Student Center. This includes waivers that are awarded to students at the beginning of the semester/s. If the Office of Student Financial Assistance is not aware of additional resources prior to awarding aid, then that aid, such as student loans, may have to be reduced and sometimes paid back by the student if the resource creates an over award.

## Refunds and Return of TITLE IV Funds

Students should be aware that if they withdraw from the university after having received financial assistance, they might have to repay a portion of that assistance. Students who received Federal Stafford Loans should also know that UCF is required to notify lenders of student withdrawals.

## Professional Judgment

The formula used to determine eligibility for federal student aid is basically the same for all applicants. However, in some cases, special circumstances may be taken into consideration. Students with extenuating circumstances should schedule an appointment to review the situation with a counselor. There must be a very good reason to make any adjustments and proof must be provided to support any adjustments. The situation will be reviewed and a decision will be made through the Professional Judgment process.

## Student Rights and Responsibilities

Students have the right to full information about the financial aid programs available at UCF, our application procedures and aid deadlines, and the criteria used to determine a financial aid package. Students have the right to appeal decisions made by the Office of Student Financial Assistance. Students have the right to equitable treatment of

their financial assistance applications. Although each student's case is analyzed individually, eligibility standards are applied uniformly without regard to race, gender, religion, creed, national origin, or physical handicap. All students' records are confidential. It is the student's responsibility to review and understand all information and instructions, meet all deadlines, and provide all information and documentation accurately. Errors and omissions can cause delays and prevent students from receiving assistance. Misrepresentation is a violation of the law.

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## Policies

- ◇ Overview
- ◇ General University Policies
- ◇ General Graduate Policies
- ◇ International Graduate Student Policies
- ◇ Graduate Certificate Program Policies
- ◇ Master's Program Policies
- ◇ Education Specialist Program Policies
- ◇ Doctoral Program Policies

## OVERVIEW

The policies in this section of the *Graduate Catalog* are minimum university-wide standards for graduate programs. The Academic Programs section in this catalog describes additional requirements for each graduate program, and the individual college descriptions in the About UCF, Colleges section provide faculty listings by department and college requirements (see College of Arts and Humanities, Burnett College of Biomedical Sciences, College of Business Administration, College of Education, College of Engineering and Computer Science, College of Health and Public Affairs, College of Nursing, College of Optics and Photonics, Rosen College of Hospitality Management, and College of Sciences).

## GENERAL UNIVERSITY POLICIES

- ◇ Classroom Responsibility
- ◇ Student Conduct
- ◇ Religious Observances
- ◇ University Closings
- ◇ Non-Discrimination Policy
- ◇ Sexual Harrassment Policy

- ◇ Golden Rule
- ◇ University Notices

## Classroom Responsibility

Students are responsible for maintaining classroom decorum appropriate to the educational environment. When the conduct of a student or group of students varies from acceptable standards and becomes disruptive to normal classroom procedures, the instructor has the authority to remove the offending party from the room and refer the student to the Office of Student Conduct (SRC 155) for disciplinary action.

## Student Conduct

Students are subject to federal and state laws and local ordinances as well as regulations prescribed by the University of Central Florida and the Florida Board of Governors. The breach or violation of any of these laws or regulations may result in disciplinary action. Behavioral breaches of state law, UCF requirements, or program expectations are grounds for dismissal from the program of study and the university. Detailed conduct regulations and procedures are presented in *The Golden Rule* ([www.goldenrule.sdes.ucf.edu](http://www.goldenrule.sdes.ucf.edu)).

A person applying for admission to UCF who has declared an adjudication of a violation of conduct policies at a previous college or university or a violation of the law that resulted in probation, community service, a jail sentence, or the revocation or suspension of their driver's license (including traffic violations that resulted in a fine of \$200 or more) will have circumstances of the case reviewed by the Office of Student Conduct (SRC 155) to consider eligibility for admission.

## Religious Observances

It is the policy of the University of Central Florida to reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. A student who desires to observe a religious holy day of his or her religious faith will notify all of his/her instructors and be excused from classes to observe the religious holy day.

The student will be held responsible for any material covered during the excused absence, but will be permitted a reasonable amount of time to

complete any work missed. Where practicable, major examinations, major assignments, and university ceremonies will not be scheduled on a major religious holy day.

Students who are absent from academic or social activities because of religious observances will not be penalized. A student who believes that he/she has been unreasonably denied an educational benefit due to his/her religious belief or practices may seek redress under the Student Grievance Procedure, located in *The Golden Rule*.

## University Closings

In the event of some extraordinary event (such as a natural disaster or prolonged power outage), the President shall determine whether it is necessary to cancel classes and approve administrative leave for employees in affected areas. Department chairs, in consultation with their faculty and with the college dean, shall determine the effect on final examinations and other academic matters.

## Non-Discrimination Policy

The University of Central Florida values diversity in the campus community. Accordingly, discrimination on the basis of race, sex, national origin, religion, age, disability, marital status, parental status, or veteran's status is prohibited.

Employees, students, or applicants for employment or admission may obtain further information on this policy, including grievance procedures, from the Equity Coordinator. The Director of the Office of Equal Opportunity and Affirmative Action Programs is the campus Equity Coordinator responsible for concerns in all areas of discrimination. The office is located on the main campus, in Millican Hall 330, Orlando, FL 32816-0030. The phone number is 407-UCF-1EEEO. Policies and guidelines are available online at <http://pegasus.cc.ucf.edu/~eeo/>.

## Sexual Harrassment Policy

The University of Central Florida values diversity in the campus community. Accordingly, discrimination on the basis of race, sex, national origin, religion, age, disability, marital status, parental status, or veteran's status is prohibited.

Sexual harassment, a form of sex discrimination, is defined as unwelcome sexual advances, requests for sexual favors, or verbal or physical conduct of a

sexual nature when:

- Submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or enrollment;
- Submission to or rejection of such conduct by an individual is used as the basis for employment or enrollment decisions affecting such individual; or
- Such conduct has the purpose or effect of substantially interfering with an individual's work performance or enrollment, or creating an intimidating, hostile, or offensive working or academic environment.

Sexual harassment is strictly prohibited.

Occurrences will be dealt with in accordance with the guidelines above and university rules. Employees, students, or applicants for employment or admission may obtain further information on this policy, including grievance procedures, from the Equity Coordinator. The Director of the Office of Equal Opportunity and Affirmative Action Programs is the campus Equity Coordinator responsible for concerns in all areas of discrimination. The office is located on the main campus, in Millican Hall 330, Orlando, FL 32816-0030. The phone number is 407-UCF-1EE0. Policies and guidelines are available online at <http://pegasus.cc.ucf.edu/~eeo/>.

## Golden Rule

The *Golden Rule* is the university's policy regarding nonacademic discipline of students and limited academic grievance procedures for graduate (grade appeals in individual courses, not including thesis and dissertation courses) and undergraduate students. Information concerning *The Golden Rule* can be found at [www.goldenrule.sdes.ucf.edu/](http://www.goldenrule.sdes.ucf.edu/). Section 11, "Student Academic Behavior," addresses appeals of graduate program actions or decisions.

## University Notices

This catalog contains a description of the various policies, academic programs, degree requirements, course offerings, and related matters intended to be in effect at the University of Central Florida during the 2008 - 2009 academic year. However, any matter described in this catalog is subject to change. As a result, statements in this Graduate Catalog may not be regarded in the nature of binding obligations on the institution or the State of Florida, or as an irrevocable commitment from the University to the reader.

## Drug-Free Workplace/Drug-Free Schools Policy Statement

Standards of conduct and disciplinary sanctions will be imposed for the unlawful possession, misuse or distribution of illicit drugs and alcohol by UCF students and employees on UCF property or as part of any of its activities. The unlawful manufacture, distribution, dispensation, possession or misuse of a controlled substance, prescription medication or the unlawful possession and use of alcohol is harmful and prohibited in and on UCF owned and controlled property or as part of any of its activities. Any UCF employee or student determined to have violated this policy shall be subject to disciplinary action for misconduct, action which may include termination/expulsion and referral for prosecution. No employee/student is to report to work/class or attend any university activity while under the influence of illegal drugs or alcohol. Violation of these policies by an employee/student will be reason for evaluation/treatment for drug/alcohol disorder and/or for disciplinary action up to and including termination/expulsion and/or referral for prosecution consistent with local, state and federal law.

## Academic Behavior Standards

The University of Central Florida is committed to a policy of honesty in academic affairs. Examples of conduct for which students may be subject to academic and/or disciplinary penalties including expulsion are:

- Cheating, whereby non-permissible written, visual, or oral assistance including that obtained from another student is utilized on examinations, course assignments, or projects. The unauthorized possession or use of examination or course related material may also constitute cheating.
- Plagiarism, whereby another's work is deliberately used or appropriated without any indication of the source, thereby attempting to convey the impression that such work is the student's own. Any student failing to properly credit ideas or materials taken from another has plagiarized.
- Unauthorized assistance: communication to another through written, visual, or oral means. The presentation of material which has not been studied or learned, but rather was obtained solely through someone else's efforts and used as part of an examination, course assignment or

project. The unauthorized possession or use of examination or course related material may also constitute cheating.

- **Commercial Use of Academic Material:** Selling notes, handouts, etc. without authorization or using them for any commercial purpose without the express written permission of the university and the Instructor is a violation of this rule.

NOTE: A student who has assisted another in any of the aforementioned breach of standards shall be considered equally culpable. In cases of cheating or plagiarism, the instructor may take appropriate academic action ranging from loss of credit for a specific assignment, examination, or project to removal from the course with a grade of "F." Additionally, the instructor may request disciplinary action through the Office of Student Rights and Responsibilities as outlined in *The Golden Rule*.

### **Student Use of Technology**

The University of Central Florida expects all students to have ready access to a personal computer and software appropriate to his or her field of study. Students can meet this expectation by purchasing or leasing a computer, sharing a computer with family or roommates, or using a UCF computer lab.

All UCF students should expect to use a personal computer in many university activities, including course work, accessing library information, registering for classes, and e-mailing correspondence to instructors or fellow students. In addition, many UCF courses require the use of the Internet.

The University of Central Florida has developed one of the nation's most advanced campus technology environments, and all UCF students are provided free e-mail accounts and Internet access.

Students wishing to acquire a personal computer are strongly advised to consider a laptop equipped with a wireless networking card. Recommended configurations can be found on the university's website at [www.cstore.ucf.edu](http://www.cstore.ucf.edu)

### **Student Responsibility for University Communication**

To communicate in a more expedient manner, UCF uses e-mail as the primary means of notifying students of important university business and

information dealing with registration, deadlines, financial assistance, scholarships, tuition and fees, etc.

To avoid missing important communications from the university, students must ensure that the university has an up-to-date "preferred" e-mail address, as well as both permanent and mailing (local) addresses.

It is critical that students maintain and regularly check their preferred e-mail account for official announcements and notifications. Communications sent to an address on record will be deemed adequate notice. The university does not accept responsibility if official communication is rejected or fails to reach a student who has not notified the university of a change of preferred e-mail or postal mailing address.

Please ensure that your preferred e-mail address, as well as your permanent and mailing (local) addresses and telephone number, are current with the university at all times.

Students can update their contact information online at <https://my.ucf.edu>

### **Complaint Policy**

The University of Central Florida supports the right of students to file grievances, lodge complaints, and make appeals in a safe environment free of fear, retaliation, or other adverse consequence. The university has a number of offices and committees that are responsible for implementing the institution's established procedures for addressing written academic and nonacademic student complaints.

In most cases, the recommended strategy for complaints of any nature is to ask the concerned individual to first contact the person or office most directly connected to the issue, unless there are compelling reasons not to do so. If the concerned individual does not want to contact a faculty or staff member directly, he or she begins with the next highest level of authority, which typically is the department chair or director. If the problem or complaint is unresolved or the individual is not satisfied with the resolution, he or she may file a written grievance or appeal. Specific procedures are included in specific sections of this catalog and the Golden Rule.

## GENERAL GRADUATE POLICIES

- ◇ Student Responsibility to Keep Informed
- ◇ Student Responsibility for University Communication
- ◇ University Admission Standards
- ◇ Student Admissions Classifications
- ◇ Program of Study
- ◇ Grade System
- ◇ Course Requirements
- ◇ Full-time Enrollment Requirements
- ◇ Limited Nondegree Students Enrolling in Graduate Classes
- ◇ Academic Progress and Performance
- ◇ Continuous Attendance
- ◇ Special Leave of Absence
- ◇ Readmission
- ◇ Academic Grievance Procedure
- ◇ Degree or Certificate Completion
- ◇ Traveling Scholars
- ◇ Assistantship Opportunities
- ◇ Academic Common Market Scholars
- ◇ Proprietary and Confidential Information
- ◇ Patent and Invention Policy

### Student Responsibility to Keep Informed

It is the student's responsibility to keep informed of all rules, regulations, and procedures required for graduate studies. Graduate program regulations will not be waived or exceptions granted because students plead ignorance of the regulations or claim failure of the adviser to keep them informed.

### Student Responsibility for University Communication

To communicate in a more expedient manner, UCF uses e-mail as the primary means of notifying students of important university business and information dealing with registration, deadlines, financial assistance, scholarships, tuition and fees, etc.

To avoid missing important communications from the university, students must ensure that the university has an up-to-date "preferred" e-mail address, as well as both permanent and mailing (local) addresses.

It is critical that students maintain and regularly check their preferred e-mail account for official

announcements and notifications. Communications sent to an address on record will be deemed adequate notice. The university does not accept responsibility if official communication is rejected or fails to reach a student who has not notified the university of a change of preferred e-mail or postal mailing address.

As an enrolled UCF student, you can sign up for your official Knight's E-mail account. The account is a version of Microsoft Hotmail, customized specifically for UCF students. If on file, Knight's E-mail will be your official UCF e-mail address that administrators and faculty will use to communicate important information regarding your academic career. In addition, your Knight's E-mail ID will give you access to various Microsoft Windows Live features including SkyDrive file storage, Microsoft Office collaboration software, instant messaging, blogging and much more.

### University Admission Standards

The university seeks to enroll students of the highest quality. In addition, the university encourages applications from a diverse population and values diversity in our graduate programs. Admissions decisions are made by the academic programs on the basis of a wide variety of information submitted as part of the student's application package.

Admissions committees consider factors such as students' academic qualifications, research and work experiences, professional goals and skills, match with program objectives and professional qualifications, the number of openings available in the program, and the resources available to support the student. An applicant's character, integrity and general fitness to practice a particular profession may also be considered in the admission process. Admission is limited and, in most programs, not all qualified students can be admitted.

In general, graduate admission to the university requires that students must have obtained (prior to the start of the term for which the student is admitted) the equivalent of a baccalaureate degree from a regionally accredited institution or from a recognized foreign institution. Students without the equivalent of a baccalaureate degree from a regionally accredited institution or a recognized foreign institution are not admitted to graduate degree programs, graduate certificate programs, or graduate nondegree status. All applicants for graduate admission must submit official Graduate Record Examination (GRE) scores (or General

Management Admission Test [GMAT] for selected programs) and official transcripts for all academic work. In addition to the above, all admitted students must submit evidence to document their attainment of the following minimum requirements.

### Minimum UCF Requirement

- 3.0 grade point average on a 4.0 scale (calculated for the last 60 attempted semester hours of baccalaureate degree) or
- Competitive test scores on the Graduate Record Examination
- or
- General Management Admission Test (for programs that require it)

**NOTE:** Official test scores must be submitted regardless of grade point average.

### Test of English as a Foreign Language and International English Language Testing System

The Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) is required when an applicant is from a country where English is not the official language or when an applicant's bachelor's degree is not from an accredited U.S. institution. The minimum UCF requirements for the tests are:

- TOEFL score of 220 (computer test or equivalent score on the paper test) or IBT (Internet Based TOEFL) score of 80
- IELTS score of 6.5

**Individual programs may have additional admission requirements, as listed in other sections of this catalog.**

## Student Admissions Classifications

### Degree-seeking Students

**Regular Graduate Student**—a graduate student who has been accepted into a graduate degree program with no conditions or provisions and is seeking a graduate degree. (Graduate certificates are not degree programs.)

**Provisional Graduate Student**—a graduate degree-seeking student who does not meet Board of Governors (BOG) criteria for grade point average or GRE/GMAT requirements, but for other reasons is accepted as a degree-seeking student by a program.

A 3.0 Graduate Status GPA (see Graduate Status GPA in catalog) is required after the completion of 9 hours. Only 10 percent of all new students in any degree program may be Provisional.

**Conditional Graduate Student**—a graduate degree-seeking student who meets BOG criteria for admission, but has not submitted all required official documents. Conditions must be met by midterm of the first semester in order to register for future semester classes.

**Restricted Graduate Student**—a graduate degree-seeking graduate student who meets BOG criteria, but does not meet program requirements to be accepted as a Regular Graduate Student. Restrictions will be attached to the admission that will have to be fulfilled before the student is made a Regular Graduate Student.

### Nondegree Students

A nondegree student is a student who has not been accepted into an academic program and is not seeking a graduate degree. Some students in this category are completing application requirements for a graduate program. Students who are allowed to take graduate courses in this category can only transfer nine credit hours into a graduate program with approval from their graduate adviser.

**Regular Graduate Student**—a nondegree student who has been admitted with no conditions.

**Conditional Graduate Student**—a nondegree student who has not submitted a final transcript. Transcripts must be received by midterm of the first semester in order to register for future semester classes.

**Restricted Graduate Student**—a nondegree student who was previously dismissed from a UCF degree or certificate program.

### Graduate Certificate Students

A graduate certificate student is a student, either a degree-seeking graduate student or a nondegree student, enrolled in a graduate certificate program. If accepted into a graduate program, students in this status may, at the discretion of the program adviser, transfer the credit hours from a graduate certificate program into a graduate degree program.

## Program of Study

A Program of Study is a listing of course work agreed to by the student and the degree program specifying course degree requirements. A specific Program of Study, which may vary from student to student, must be formulated jointly by the student and the appropriate committee or adviser in the program area and approved by the college prior to the completion of the ninth graduate semester hour. A Program of Study form (either a SASS audit or written form) can be obtained from the graduate program director or college graduate coordinator. This form should be prepared and signed by the adviser and student, then given to the graduate program director for review and filing in the student's permanent file. It must comply with the catalog current at the time it is proposed.

All graduate programs of study must include independent learning as part of course and other assignments. This may be accomplished by research papers and reports, evidence of reflective learning in individual portfolios, creation of original works, and/or demonstration of integration of knowledge as part of course work in a capstone course and other requirements for the degree.

The student and his/her advisory committee may make changes in the program of study at any time with approval of the graduate program director. However, once established, the program of study cannot be altered solely due to poor academic performance of the student.

## Grade System

The university uses an alphabetic system to identify student grades and other actions regarding student progress or class attendance. This system, with a grade point equivalent per semester hour, is as follows:

Grades	Grade Points Per Semester Hour of Credit
A	4.00
A-	3.75
B+	3.25
B	3.00
B-	2.75
C+	2.25
C	2.00
C-	1.75

D+	1.25
D	1.00
D-	0.75
F	0.00
NC	- No Credit -

\* Available only in CHM 1032, CHM 2045C, CHS 1440, ENC 1101, ENC 1102, MAC 1105H, MAC 1105, MAC 1114, MAC 1140, MAC 2147, MAC 2233, MAC 2241, MAC 2253, MAC 2281, MAC 2281H, MAC 2311, MAC 2311H, and STA 2014C. In these classes NC replaces the use of D+, D and D-.

### Other Actions

I	Incomplete
N	No grade reported by instructor
R*	(followed by grade) Repeated course (Grade Forgiveness)
S	Satisfactory (with credit)/ Satisfactory Progress (Research, Thesis, or Dissertation)
T*	(followed by grade) Subsequently repeated (no credit)
U	Unsatisfactory (no credit)
W	Withdrawn
WF	Withdrawn Failing
WH	Health Form Withdrawal
WM	Medical Withdrawal
WP	Withdrawn Passing
X	Audit (no credit)

\* "R" and "T" actions only apply to undergraduates.

The designation of "N" will be temporarily assigned by the Registrar's Office only in the case when a grade has not been submitted by the faculty by the "grades due" deadline. The designator will be replaced by the earned letter grade at the earliest opportunity in the semester that immediately follows. The "N" designator may not be assigned by faculty.

Grade changes other than medical withdrawals will be considered only during the semester immediately following the one in which the grade was assigned, except that grades assigned during the spring semester may be changed during either the following summer term or fall semester. A change in grade must be approved by the dean of the college



or school. If an academic action such as dismissal or probation has been taken by the university before a grade change, the action will remain in effect regardless of the grade change. A grade will not be changed after a degree has been conferred.

## Course Requirements

### Course Levels of Graduate Work

**7000-Level Courses**—courses for doctoral students. Master's and nondegree students may enroll in 7000-level courses with permission from the program.

**6000-Level Courses**—courses for graduate students. Nondegree students should check with the colleges about their ability to enroll in 6000-level courses. Students in accelerated undergraduate/graduate programs should check with their academic adviser before registering for 6000-level courses. Undergraduate registration in 6000-level courses is allowed only in special situations with prior approval by the college. Undergraduate students must be within nine hours of graduation, have a minimum 3.0 GPA, and not register for more than a total of twelve hours in that term. See also the catalog section on Senior Scholars.

**5000-Level Courses**—courses for graduate students. Nondegree students and seniors may enroll in 5000-level courses with permission from the program.

### Split-Level Classes

Although generally discouraged, UCF does allow departments to offer split-level undergraduate and/or graduate classes. In such cases, two courses approved for different levels of instruction (e.g., a 4000- and 5000-level course) are offered together in the same room, at the same time, and with the same instructor, but under two different course numbers. In limited cases, one of the courses may be from the undergraduate level and one from the graduate level. In general, split-level classes are restricted to situations where the enrollment in one of the courses would be insufficient to allow the course to be offered on a stand-alone basis. When such split-level classes are scheduled, the following conditions must be maintained:

- Both the graduate and the undergraduate courses must have been approved previously through the established university process for

approving courses so that there are two separate and complete syllabi for each course, and the syllabi clearly demonstrate more advanced subject matter and expectations for the graduate course than the undergraduate course.

- Split-level classes must only be assigned to faculty members who meet the university-wide minimum qualifications for teaching graduate-level courses.
- Courses may not be combined into a split-level class if the course numbers of the two courses are more than one level apart. For example, 4000- and 5000-level courses may be combined into a split-level class; 4000-level courses may not be combined with 6000-level courses.
- No student may register to take for credit both the undergraduate and graduate courses concurrently.
- The graduate and undergraduate courses must have clearly different requirements and performance expectations. Graduate students must have course requirements or assignments that require more in-depth analysis and understanding of the topics, provide broader coverage of the content area, demonstrate higher knowledge and skills, and/or show greater independence of thought and application of concepts than what is typically required of undergraduate students. The level and amount of learning by graduate students must be equivalent to what is typically expected in 5000-level or higher courses. The different requirements and expectations must be spelled out clearly in the course syllabi for the respective courses.
- Documentation of split-level class offerings must be maintained in the college dean's office in expectation of future audits and reviewed by the Undergraduate and Graduate Deans before the courses can be taught as split level. Each time a new split-level class is offered, copies of both syllabi should be collected by the colleges and provided to the Undergraduate and Graduate Deans.

### Language Requirements

Foreign language requirements shall be at the option of the individual departments or appropriate units consistent with their college regulations.

### Credit by Examination or Waiver

Students who believe they have mastered the content of a graduate-level course should present

a portfolio to the graduate program director documenting the learning experience. If the committee after examining the portfolio believes the student has mastered the content presented in a graduate-level course, the student should be allowed to demonstrate that mastery through examination. Examination credit may be used to satisfy program course requirements, but not credit hour requirements. Certain program requirements or courses may be waived at the discretion of a program, although the total hours required for the program must be satisfied.

Correspondence courses are not acceptable toward a graduate program of study; however, credit-bearing extension or continuing education courses may be accepted. The acceptance of courses from unaccredited agencies or institutions threatens the integrity and value of the graduate degrees awarded by UCF. Graduate-level course work demands the mastery of skills, theories, and concepts at a much higher level than undergraduate-level course work. Therefore, the university will not allow students to transfer course work from professional societies, independent agencies, employees, or companies unless they are ACE (American Council on Education) certified.

### **Thesis, Research Report, and Dissertation Grades**

For thesis (XXX 6971 or 6973), doctoral dissertation (XXX 7980), and research report (XXX 6909) courses, satisfactory (S) or unsatisfactory (U) grades are used to reflect student progress in these courses. Should a student in a given term be given an incomplete (I), then this grade should be changed to an S or U, upon completion of the work. Other grades may not be assigned in these courses. Students who do not maintain satisfactory progress in their research, as determined by their thesis or dissertation advisory committee, may be placed on probationary status.

### **Full-time Enrollment Requirements**

A full-time degree-seeking graduate student must take at least 9 credit hours in the fall and spring semesters. A half-time load is defined as enrolled in at least 4.5 credit hours in fall and spring terms. During the summer term, full-time is 6 credit hours and half-time is 3 credit hours. There are two exceptions to this policy:

1. For master's students pursuing a thesis option, full-time enrollment is defined as 3 hours per

semester (including summers, without skipping a semester) of thesis course work (XXX 6971), after completion of all course work and until graduation. Students who wish to enroll in part-time hours should consult their adviser.

2. For doctoral students who have passed the candidacy exam and are registered for doctoral dissertation (XXX 7980) hours only, full-time is 3 hours per semester until graduation. Such students must continue to enroll in at least three dissertation hours each semester (including summers, without skipping a semester) until they successfully complete the dissertation and graduate. Students who wish to enroll in part-time hours should consult their adviser.

Graduate students receiving assistantships, tuition support, and fellowships must be enrolled full-time as degree-seeking students who maintain good academic progress.

### **Special Considerations:**

All international students on F or J visas must maintain full-time, degree-seeking status, regardless of financial support received from the university. F and J visa holders should contact the International Services Center (ISC) to ensure that their enrollment conforms to the full-time definition for their visa status. International students should not change their course schedule or drop classes without advisement from the International Services Center. All international students who enroll in less than 9 hours per term must submit to ISC a Reduced Course Load Form that explains the nature of the reduced hours and must obtain approval from ISC (see [www.intl.ucf.edu](http://www.intl.ucf.edu) for Reduced Course Load Form). This requirement also applies to international students who are enrolled in less than 9 hours per term in thesis or dissertation hours.

Students who receive financial support from outside UCF and who have loan obligations are responsible for enrolling in the number of credit hours that meet the full-time or half-time criteria specified by the funding source. Enrollment certification is provided by the Registrar's Office based upon the UCF definition of full-time graduate status.

Students who do not satisfy these full-time enrollment requirements may have to start repaying student loans and will not qualify for graduate assistantships, fellowships or tuition support. Students receiving financial aid should refer to the

Program Eligibility Charts on the Office of Student Financial Assistance website (<http://finaid.ucf.edu>) under “Receiving Aid” to determine their specific enrollment requirements.

Students receiving veterans benefits should contact Veteran’s Affairs ([www.va.sdes.ucf.edu](http://www.va.sdes.ucf.edu)) for additional information about course loads.

Nondegree-seeking students must be enrolled in 12 credit hours or more to be considered in full-time status.

## Limited Nondegree Students Enrolling in Graduate Classes

All students who wish to enroll as limited nondegree students at the graduate level will be accepted as nondegree-seeking students at the graduate level. Students wishing to enroll should complete the online graduate application, pay the application fee, provide transcripts from previous institutions, and complete residency forms.

The UCF College of Graduate Studies will make available the one-page nondegree graduate application form to those faculty who are meeting classes for the first time at an off-campus site or regional campus. Those meeting classes should collect the appropriate information and forms. These materials should be returned directly to the UCF College of Graduate Studies, where they will be processed and students will be registered.

Students will be placed on hold for the following semester’s registration, awaiting the transcript from a previous institution that verifies the bachelor’s degree.

## Academic Progress and Performance

### Review of Academic Performance

The primary responsibility for monitoring academic performance standards rests with the degree program. However, the college and the UCF College of Graduate Studies will monitor a student’s progress and may dismiss any student if performance standards or academic progress as specified by the program, college or university are not maintained. Satisfactory academic performance in a program includes maintaining at least a 3.0 graduate status GPA (defined below) in all graduate work taken since admission into the program. Satisfactory performance also involves maintaining

the standards of academic progress and professional integrity expected in a particular discipline or program. Failure to maintain these standards may result in dismissal of the student from the program.

### Graduate Status GPA

A graduate status GPA will be calculated on the graduate courses taken at UCF since admission into each degree or certificate program, and used to monitor the student’s progress in the program. The university requires that students must maintain a graduate status GPA of at least 3.0 or higher in order to maintain regular graduate student status, receive financial assistance, and qualify for graduation. This GPA requirement cannot be waived.

A graduate status GPA will be calculated on graduate courses taken at UCF while in nondegree status. Nondegree Students with GPAs below 3.0 after the initial 9 hours of graduate course work are subject to dismissal.

Please note that the graduate status GPA does not carry forward from one program to another or from nondegree into a degree or certificate program.

### Probationary Status and Dismissal

Students whose graduate status GPA falls below 2.0 will be immediately dismissed from the degree program and will not be allowed to enroll in graduate courses unless they have been admitted to another graduate program or admitted as a nondegree student.

Students whose graduate status GPA drops below 3.0 but above 2.0 will be automatically changed to academic probationary status by the College of Graduate Studies for a maximum of nine semester hours of letter-graded course work (Grades A-F). Unsatisfactory performance may also be indicated by a “U” grade in graduate course work. Under such circumstances the program may elect to place the student on academic probation.

Students will receive a notice of probation at the beginning of the probation and the notice of probation will be imprinted on the student’s advising transcript. If the student has not attained a graduate status GPA of 3.0 of graded course work at the end of the probationary nine semester hours, he/she will be dismissed from the graduate program unless an approved Conditional Retention Plan is in place as described below. Students who have not remedied the unsatisfactory “U” performance,

as defined by the program, may also be dismissed from the program.

The graduate program will also be notified at the time of probation and given an opportunity during the 9-hour probationary period to formally prepare a "Conditional Retention Plan" in consultation with the Appeals Subcommittee of the Graduate Council. The Conditional Retention Plan should show how the student can realistically regain his/her regular graduate status (GPA 3.0) within a reasonable time (usually one semester). It should also define the courses to be taken and the timing of the courses to regain his/her graduate status. In addition, the plan could include other conditions as necessary for the continued enrollment of the student in the program such as retaking courses requiring better performance, taking remedial course work in specified areas, or completing special projects to better prepare the student for success in the program. Ideally the student and the faculty should know exactly what conditions are required for the continued enrollment of the student. Failure to meet the conditions will result in dismissal without any further appeal of retention. An approved Conditional Retention Plan by the Appeals Subcommittee will usually include an extension of the probationary period, if needed, thus allowing the student to continue without interruption in his/her program even should the student fail to succeed in his/her initial probationary period.

International students placed on probationary status will be sent to the International Services Center for advisement regarding the immigration status implications of this action.

After dismissal, the following options are available:

**OPTION A. The Program Appeals for Retention of the Student in the Next Semester After Dismissal.**

The dismissed student may not take program-related course work during this appeal, which must occur within the next semester following dismissal. The appeal for retention should include reasons for readmitting the dismissed student, as well as provide a "Conditional Retention Plan" as described above. If the appeal is approved, students will be readmitted into the program under the "Conditional Retention Plan" in restricted status and failure to meet the conditions will result in dismissal without any further appeal of retention. Appeals for retention submitted during

the summer may be delayed until the first Appeals Subcommittee meeting in the fall semester. An approved appeal for retention will allow the student to reenroll in the very next semester and not have a "dismissal" on his/her transcript.

**OPTION B. The Dismissed Student Applies for Entry into the Program from Which He/She Was Dismissed.**

In this case, the student must submit a complete new application (application fee, letters of reference if applicable, AND a statement describing why the student thinks he/she is more capable now to successfully complete the program). The program must submit a "Conditional Retention Plan" (as described above) if they choose to support the former student. The Conditional Retention Plan must be submitted to the Graduate Appeals Subcommittee and recommended for approval before an admissions decision is made.

A student that is admitted back into a program from which he/she was dismissed will continue to have the original dismissal denoted on the transcript and will continue with the same graduate status GPA that the student held prior to dismissal. Also, the student is admitted as a restricted student and must meet the conditions prescribed by the Conditional Retention Plan to enter regular graduate status.

Nondegree students who wish to be admitted back into nondegree status must submit a complete new application (application fee and statement describing why the student thinks he/she is more capable now to successfully complete the courses). The College of Graduate Studies will submit the statement to the Graduate Appeals Subcommittee. It must be recommended for approval before an admissions decision is made.

**OPTION C: Apply to Another Program.**

This option is always available and requires a complete new application. Previously dismissed students accepted into new programs will be admitted under restricted status and have a new graduate status GPA (see Graduate Status GPA section above).

Students with a graduate status GPA of less than 3.0 seeking admission to a different graduate program will be admitted under restricted status with conditions as prescribed by the new program.

Dismissed students will not be allowed to enroll in

graduate courses unless they have been admitted to another graduate program or admitted as nondegree students taking classes with permission from the department.

**NOTE:** Individual graduate programs may have more stringent grade requirements than described above. Students must abide by the academic performance standards of their graduate program.

### **Maximum Hours of Unsatisfactory Grades**

A degree-seeking or nondegree student may earn a maximum total of six semester hours of “C” (C+, C, C-) or lower grades. A course in which a student has received these grades may be repeated to provide a better grade. However, both grades will be used in computing the GPA. There is no forgiveness policy on graduate grades. Exceeding six semester hours of unsatisfactory grades (“C+” and below or unresolved “I” grades) is reason for dismissal.

### **Incomplete Grades**

A grade of “I” (incomplete) is assigned by the instructor when a student is unable to complete a course due to extenuating circumstances, and when all requirements can clearly be completed in a short time following the close of regular classes. In all circumstances where an “I” grade is received, the student and faculty member must complete an agreement form that specifies how and when the incomplete grade will be made up. This agreement form is submitted with the instructor grade rolls at the end of the semester, and a copy of this agreement is given to the college for further follow-up. For those students on financial assistance such as loans, the incomplete (I) must be made up by the agreement date. Failure to complete course requirements by that date may, at the discretion of the instructor, result in the assignment of an “F” grade, or a “U” grade for thesis, dissertation, or research report hours. It is the student’s responsibility to arrange with the instructor for the changing of the “I” grade.

Grades of “I” must be resolved within one calendar year or prior to graduation, whichever comes first. Incompletes in regular course work left unresolved will be changed to “F” if not changed in the allowed time period, and this time period may be sooner for those receiving financial assistance. The exception to this is enrollment in thesis (XXX 6971) and dissertation (XXX 7980) hours where

the incomplete grade will be allowed to continue until graduation. UCF fellowship students cannot receive fellowship funds while holding Incomplete grades and have thirty days from the issuance of the Incomplete to remedy it in order to continue to receive fellowship funds.

### **Continuous Attendance**

Failure to enroll in three consecutive semesters (spring, summer, fall) is considered non-continuous enrollment.

1. Students are expected to maintain enrollment and to complete their graduate study expeditiously. A Special Leave of Absence should be requested when students anticipate they will not be enrolled for three consecutive semesters or more. If students are not enrolled in the university for a period of three consecutive semesters (spring, summer, fall) and do not obtain Special Leave of Absence approval for such interruptions in their programs of study, they will be discontinued and must reapply for admission. Readmission is not guaranteed.
2. All (domestic and international) students taking thesis or dissertation hours are required to be continuously enrolled (including summer) until the thesis or dissertation is completed.
3. Because of U.S. government regulations, international students must be enrolled every fall and spring semester. For students in this category, Special Leave of Absence is only available for documented medical reasons.
4. A student without an approved Leave of Absence who breaks continuous enrollment will lose the option of fulfilling the degree requirements originally listed in his/her official program of study already on file, and will instead fulfill the degree requirements listed in the graduate catalog in effect at the time the student resumes his/her attendance.

### **Special Leave of Absence**

A Special Leave of Absence may be granted to a student in order to temporarily waive the continuous attendance requirement. A student may request such a leave in cases where the student can demonstrate good cause (e.g., illness, family issues, financial difficulties, personal circumstances, employment

issues). The specific reason for the Special Leave of Absence request must be indicated by the student on the Special Leave of Absence Form. A Special Leave of Absence will be granted only after approval from the Graduate Program Director for the student's program of study, College Graduate Coordinator, International Services Center (required for international students), and College of Graduate Studies. The normal time limit for a Special Leave of Absence is three consecutive semesters. Application for a Special Leave of Absence must be filed by submitting the Special Leave of Absence Form no later than the end of the first semester of absence. Time spent in a Special Leave of Absence will not reduce the total time limitation for degree completion (see the policy regarding Time Limitation for Degree Completion in the master's, specialist, and doctoral policies). If a student fails to enroll in the semester following the last term in the approved Special Leave of Absence, the student will have failed to maintain continuous enrollment and must apply for readmission to the university.

## Readmission

To file for readmission, students must complete a new application, submit the application fee, and update their residency information and health history (if applicable). Students should apply for readmission if they were previously admitted and enrolled in a graduate program but have been absent for three major semesters. For more information on readmission, please visit the Graduate Students website.

## Academic Grievance Procedure

The UCF College of Graduate Studies allows for petitions of university requirements and their academic matters. Academic matters are those involving instruction, research, or decisions involving instruction or affecting academic freedom.

The academic grievance procedure is designed to provide a fair means of dealing with graduate student complaints regarding a specific action or decision by a faculty member, program or college, including termination from an academic program. Academic misconduct complaints associated with sponsored research will invoke procedures outlined by the Office of Research.

Students who believe they have been treated unfairly may initiate a grievance. The procedure

provides several levels of review, and at each level of review the participants are further removed and have a broader outlook than where the grievance originated. Procedures for initiating an academic grievance can be found at The Golden Rule [www.goldenrule.sdes.ucf.edu/](http://www.goldenrule.sdes.ucf.edu/) (see section 11).

## Petitions of Graduation Requirements Procedures

Students have the responsibility to familiarize themselves with policies and procedures of the university, college, and program. Students are responsible for knowing the degree requirements and following the policies that govern the academic program. However, when unusual instances arise, making it appropriate for students to request exceptions of existing graduate academic policies for graduate students, graduate students may petition the appropriate unit for an exception to this requirement. The procedures are:

- The graduate student completes a Graduate Petition Form, specifying the requirement (either a program or university requirement) and the exception desired to the graduate program director. The graduate student needs to provide a compelling reason for an exception to be made.
- The graduate program director may ask the program graduate committee to examine and provide advice about the petition to the graduate program director. The graduate program director will then make a recommendation about the exception to the unit head. The unit head will then make a final recommendation.
- The petition will then be sent to the College of Graduate Studies for a final decision. The Vice Provost and Dean of the College of Graduate Studies may ask the Appeals Committee of the Graduate Council of the Faculty Senate to examine the information provided in the petition at their next scheduled meeting and make a recommendation concerning the petition to the Vice Provost and Dean.
- The Vice Provost and Dean of the College of Graduate Studies will consider the input of the Appeals Committee of the Graduate Council and make a final decision about the petition for the university.

## **Degree or Certificate Completion**

### **Application for Graduate Degree**

Students planning to graduate in the next term must complete the Application for Graduation (Intent to Graduate form) in their college during Registration for their last term (see [www.graduate.ucf.edu](http://www.graduate.ucf.edu) for form). Students who have not applied for graduation by the last day of classes in the term preceding the graduation semester may not be listed in the Commencement Program. If the student does not graduate in that term, a new application for graduation must be filed at the beginning of registration for the term of anticipated graduation. Graduating students must be enrolled at UCF during the term of graduation. Graduates may contact the Registrar's Office for Commencement ceremony and guest ticket information.

Assuming that the student is in good standing at the university, degrees will be awarded only after successful completion of the degree requirements stated in the Graduate Catalog under which the student plans to graduate and final recommendation from the faculty and dean of the respective college.

### **Application for Graduate Certificate**

In order to be processed for completion of a graduate certificate program, students must file an application for completion (Graduate Certificate Completion form) with the office that offers the certificate program. The Graduate Certificate Completion form should be filed by the time that the student is registering for the final course in the certificate program, and such forms must be filed no later than the end of the semester in which the student enrolls in the last course required for the certificate program. Forms can be found on the UCF Graduate Students website ([www.graduate.ucf.edu](http://www.graduate.ucf.edu)).

### **Thesis and Dissertation Requirements**

An oral defense of an original thesis or dissertation is required with the approved thesis or dissertation being prepared in accordance with program, college, and university requirements. Academic dishonesty in thesis, research report and dissertation work may result in reversion to post-baccalaureate status or termination from the degree program. Our emphasis on academic honesty requires quotations or ideas of others to be accompanied by appropriate citations. The College of Graduate Studies Thesis and Dissertation Manual describes UCF's

formatting requirements for theses/dissertations and outlines the steps graduate students must follow to submit their thesis or dissertation electronically. Graduate students can obtain the manual from the Graduate Students website ([www.graduate.ucf.edu](http://www.graduate.ucf.edu)).

Additionally, the Thesis/Dissertation Office maintains online workshops to inform graduate students about procedures, deadlines, and requirements associated with preparing a thesis and dissertation.

All theses and dissertations that use research involving human subjects, including surveys, must obtain approval from an independent board, the Institutional Review Board (IRB), for this prior to starting the research. It is imperative that proper procedures are followed when using human subjects in research projects. Information about this process can be obtained from the Office of Research and Commercialization ([www.research.ucf.edu](http://www.research.ucf.edu)). Failure to obtain this prior approval could jeopardize receipt of the student's degree.

Students who wish to complete their degree requirements in a given semester must take their oral defense and submit their final electronic copy by the dates shown in the Academic Calendar. All students are required to submit their thesis or dissertation electronically.

### **Certification of Degree Completion**

The college of the degree program must certify through the college dean that all program and college requirements have been met. Degree certification forms (SASS audit forms or program of study with approval signatures) are forwarded to the UCF College of Graduate Studies for final determination that all program, college, and university requirements have been met.

### **Certification of Graduate Certificate Completion**

The college of the graduate certificate program must certify through the college dean that all program and college requirements have been met. Completed Graduate Certificate Completion forms (available at [www.graduate.ucf.edu](http://www.graduate.ucf.edu)) are forwarded to the UCF College of Graduate Studies for final determination of program, college, and university requirements. For each certificate program, the graduate program director will certify successful completion of the program's academic requirements. The certificate

is mailed to the student unless the student or the graduate program requests other arrangements. Certificate recipients are not recognized at commencement.

### **Registration in Term of Graduation**

A student must be registered in any term in which UCF faculty or administrative and professional time will be required (e.g., for review of thesis or research report by faculty or editorial staff, for completion of internships, or for comprehensive or other examinations). Therefore, unless the graduate program certifies to the UCF College of Graduate Studies by the end of Late Registration (add/drop) that no UCF resources will be utilized, a student must be registered in the term of graduation.

### **Traveling Scholars**

The university participates in the Board of Education Traveling Scholar Program (6C-6.07) enabling a graduate student to take advantage of special resources available on another campus but not available on the home campus (for example, special course offerings, research opportunities, unique laboratories, and library collections). A Traveling Scholar is a graduate student who, by mutual agreement of the appropriate academic authorities in both the sponsoring and hosting institutions, receives a waiver of admission requirements of the host institution and a guarantee of acceptance of earned resident credits by the sponsoring institution.

A Traveling Scholar must be recommended by his or her own graduate adviser, who will initiate a visiting arrangement with the appropriate faculty member of the host institution. After agreement by the student's adviser and the faculty member at the host institution, graduate deans at both institutions will be fully informed by the adviser and have the authority to approve or disapprove the academic arrangement. A student will register at the host institution and will pay tuition and/or registration fees according to fee schedules established at that institution. The Traveling Scholar Form (located at [www.graduate.ucf.edu](http://www.graduate.ucf.edu)) must be used for documentation. This form must be completed by the student and approved by the UCF College of Graduate Studies before any course work can be taken.

Each university retains its full right to accept or reject any student who wishes to study under its

auspices. A Traveling Scholar will normally be limited to one term for a total of six credit hours taken as a traveling scholar at another institution.

A Traveling Scholar is not entitled to displacement allowance, mileage, or per diem payments. The home university, however, may at its option continue its financial support of the traveling scholar in the form of a fellowship or graduate assistantship with any work obligation to be discharged either at the home or at the host institution.

As part of the Traveling Scholars agreement, SUS institutions agree to accept one another's entrance requirements and credits. All Traveling Scholars are required to submit the Student Health History and immunization requirements according to UCF and Board of Governors policies. Credit is not automatically transferred into the graduate program of study. The student must request an official transcript be sent from the host institution to the UCF College of Graduate Studies (Millican Hall 230, P.O. Box 160112, Orlando, FL 32816-0112; Phone 407-823-2766), and the graduate program director must complete the Program of Study so that the credits can be entered into the student database. Credits earned at another institution while in Traveling Scholar status will be considered resident credits and are not counted as "transfer" credits under the "nine-hour" rule. These hours may count toward UCF residency requirements if prior approval is obtained. Graduate students are not allowed to be traveling scholars in their final, or graduation, term except by prior approval of the UCF College of Graduate Studies.

International graduate students who are registered at another educational institution besides UCF as a Traveling Scholar or transient student and therefore may not be enrolled full-time at UCF are required to complete a Reduced Course Load Form to satisfy SEVIS requirements of being enrolled full-time. International graduate assistants employed at UCF must be enrolled full-time at UCF.

### **Assistantship Opportunities**

As part of a program's professional development plan for students, full-time graduate students may be offered the opportunity to gain experience as a Graduate Teaching Assistant (or Associate or Grader; GTA), Graduate Research Assistant (or Associate; GRA), or Graduate Assistant. See Full-time Enrollment Requirements for a description of



the policy regarding full-time enrollment.

Assignments to these professional development activities are intended to supplement the student's academic program of study in order to give the student professional experiences that will enhance the student's development and prepare him/her for postgraduation employment. While these activities provide the opportunity for students to be graduate assistants, their overriding purpose is to help develop the skills, abilities, and professionalism of the student.

All graduate assistants (GTAs and GRAs) must be assigned to at least a half-time appointment (0.25 FTE assignment approximately equivalent to 10 hours per week). However, the standard assignment for graduate assistants is a full-time appointment (0.5 FTE assignment approximately equivalent to 20 hours per week). Students who desire more than a full-time appointment during fall and spring semesters or more than 30 hours during the summer semester must complete a Supplemental Assignment Form. The UCF College of Graduate Studies will only grant exceptions to this policy in rare circumstances and for compelling reasons related to the student's professional development. Exceptions are granted only rarely during the first year of a student's program of study. Decisions are based on the student's academic record, the appointment FTE, the relationship of the assignments to the student's program of study, support from the graduate program director, and related factors.

**Student FICA exemption** Graduate assistants who are enrolled at least part-time (5 hours in fall, 5 hours in spring, or 3 hours in summer) will be exempt from FICA/Medicare taxes during pay periods that overlap with the academic term and during breaks of less than five weeks. Breaks longer than five weeks where graduate students are on a graduate assistant appointment but not enrolled will result in withholding FICA/Medicare taxes.

### Academic Common Market Scholars

The University of Central Florida is a participating institution in the Academic Common Market (ACM) program with other southern universities sharing unique academic programs on the undergraduate and graduate level. However, the University of Central Florida only participates at the graduate level.

The Academic Common Market offers students

the opportunity to enter degree programs that are not available in their home state, while still being eligible to pay in-state tuition rates. Students taking part in this program must be admitted by a participating university (notifying that university of their planned attendance as an ACM Scholar), and will need to obtain a letter of certification from their respective ACM state coordinator.

The first step is to contact your respective state coordinator for information on how to apply for the Academic Common Market. Contact information for state coordinators can be found on the following website: [www.sreb.org/programs/acm/participating/states.asp](http://www.sreb.org/programs/acm/participating/states.asp).

After making contact with your state coordinator, if you are eligible for the ACM, you can apply to the University of Central Florida online through the website at [www.graduate.ucf.edu](http://www.graduate.ucf.edu). When filling out the Florida Residency Classification section, select the option that states "I am a Florida Resident for tuition purposes" and fill out the entire section. Before saving the page, you will need to add an explanation for your Florida residency. Please select the letter "N," which states "I am a Southern Regional Education Board's Academic Common Market graduate student."

Upon submission of your application, and your program's required admissions criteria, you will receive a decision from the program in which you have applied. If accepted, you can present that information to your state coordinator, who will then be able to provide UCF with a certification letter. With that letter, UCF will then be able to offer you Florida residency for tuition purposes.

The participating universities are located in the following states:

Alabama	Louisiana	Tennessee
Arkansas	Maryland	Texas*
Delaware	Mississippi	Virginia
Florida*	North Carolina	West Virginia
Georgia	Oklahoma	
Kentucky	South Carolina	

\*Only Florida, North Carolina, and Texas participate at the graduate level.

For more information, please contact the UCF College of Graduate Studies at 407-823-2766 (Millican Hall 230, P.O. Box 160112, Orlando, FL 32816-0112). Additional information on the Academic Common Market, including contact information for state coordinators and all available academic programs, can be found on the Southern

Regional Education Board (SREB) website, [www.sreb.org](http://www.sreb.org).

## Proprietary and Confidential Information

It is the intent of the University to foster the professional development of its faculty and students. In particular, the proprietary and patent policies serve to protect the interests of UCF graduate students so that they can engage in research that will ultimately be published. In no circumstances should the University knowingly enter into agreement with outside agencies that would prevent the ultimate publication of the graduate student's work, as a thesis or dissertation or other means. These policies also help to clarify protections for intellectual property contained in theses/dissertations for students who engage in employment outside the University.

If thesis or dissertation work is supported by a contractual agreement with an outside agency, and provision was made in the agreement to delay disclosure of the study's results for the purpose of filing a patent or copyright, then this section describes procedures for handling the thesis/dissertation. (See also Patent and Invention Policy below for explanations of rights associated with patents and copyrights.)

1. Only for those theses and dissertations where a prior written agreement was made between UCF and an outside agency or where the University wishes to pursue a copyright/patent may publication of the thesis/dissertation be delayed, or in exceptional circumstances as determined by the University on a case by case basis. Review and delay of disclosure of the thesis/dissertation may take up to 6 months.
2. The review by the outside agency or by the University for the purpose of copyright or patent will follow the oral defense of the document. If it appears that the review process will delay certification of the degree or if the delay of disclosure is exercised, the certification process will be completed but the thesis or dissertation will not be released for up to 6 months.
3. No graduate degree will be awarded when the thesis or dissertation, after a reasonable interval, is not available to the public. If material is sensitive, classified, or will be

patented, the thesis or dissertation will not be released for up to 6 months.

4. Contractual agreements that contain provisions for review and delay of disclosure shall be reviewed by the Office of Research and Commercialization. Exceptional cases may include a delay of disclosure for more than six months and/or review prior to the oral defense.
5. The student and the student's Adviser shall be informed of the possibility of the delay of disclosure at the time of appointment of the Adviser.

## Patent and Invention Policy

The "Patent and Invention Policy" for graduate students is included here in its entirety. Departments and colleges should discuss this policy with graduate students at orientations.

**PREMISE:** UCF has three fundamental responsibilities with regard to graduate student research. They are to (1) support an academic environment that stimulates the spirit of inquiry, (2) develop the intellectual property stemming from research, and (3) disseminate the intellectual property to the general public. In most cases, UCF owns the intellectual property developed using university resources. The graduate student as inventor will according to this policy share in the proceeds of the invention.

1. University Authority and Responsibilities: Florida Statute Section 1004.23 authorizes the University to take any action necessary to secure letters of patents, copyrights, and trademarks on any work products and to enforce its rights therein. This policy applies to graduate students who are considered University personnel.
2. **Definitions:** For the purposes of this policy the following definitions shall apply:
  - a. A **work** includes any copyrightable material (other than journal articles) such as printed material, computer software or databases, audio or visual materials, circuit diagrams, mask works, architectural and engineering drawings, lectures, musical or dramatic compositions, choreographic works, pictorial or graphic works, and sculptural works.

- b. An **Invention** includes any discovery, invention, process, composition of matter, article of manufacture, know-how, design, model, technological development, strain, variety, culture of any organism, or portion, modification, translation, or improvement of these items, and any mark used in connection with these items.
- c. **Instructional Technology Material** includes motion pictures, film strips, photographic and other similar visual materials, live video and audio transmissions, computer programs, computer-assisted instructional course work, programmed exhibits, and combinations of the above materials, which were prepared or produced in whole or part by a graduate student, and which are used to assist or enhance instruction.
- d. **University Support** includes the use of University funds, personnel, facilities, equipment, materials, or technological information, and includes such support provided by other public or private organizations when it is arranged, administered, and/or controlled by the University.
- e. **Student-generated Effort** means that the ideas come from the graduate student alone outside the field or discipline for which the graduate student is employed by the University, the work was not made with the use of University support, and the University is not held responsible for any opinions expressed in the effort.
- f. **Research** means the inquiry or examination in some field of knowledge undertaken to establish facts or principles that are true. Research, as used in this policy, does not include work done in an internship or coop setting where new knowledge in a field is not actively sought, but rather a setting that offers a real life experience for the graduate student.
3. Work(s)
- a. **Student-generated Effort**—A **work** made solely by the graduate student, outside the field or discipline for which the graduate student is employed by the University, is the property of the graduate student, who has the right to determine the disposition of such **work** and the revenue derived from such **work**.
- b. **University-supported Efforts**—If the **work** was not made solely in the course of student-generated efforts, the **work** is the property of the University, and the graduate student shall share in the proceeds therefrom.
- c. **Disclosure**
1. Upon creation of a **work** that is potentially patentable, and prior to any publication, the graduate student shall disclose to the Office of Research and Commercialization any **work** made in the course of University-supported efforts, together with an outline of the project and the conditions under which it was done.
  2. The Office of Research and Commercialization shall gather information to assess the relative equities of the graduate student and the university in the **work**.
  3. Within 120 days after such disclosure, the Office of Research and Commercialization will inform the graduate student whether the university seeks an interest in the **work**.
  4. The graduate student and the university shall not commit any act which would tend to defeat the university's or graduate student's interest in the **work** and shall take any necessary steps to protect such interests.
4. Invention(s)
- a. **Student-generated Efforts**  
All **inventions** made outside the field or discipline in which the graduate student is employed by the university and for which no university support has been used are the property of the graduate student.
- b. **University-supported Efforts**  
An **invention** made in the field or discipline in which the graduate student is employed by the university, or receiving university support, is the property of the university and the graduate student shall share in the proceeds therefrom.
- c. **Disclosure**
1. A graduate student as inventor or co-inventor shall fully and completely

- disclose to the Office of Research and Commercialization all **inventions** which the inventor(s) may develop or discover while a graduate student of the University, together with an outline of the conditions under which it was done. With respect to **inventions** made during the course of approved outside employment, the graduate student as inventor or co-inventor may delay such disclosure, when necessary to protect the outside employer's interest, until the decision has been made by the outside employer whether to seek a patent.
2. The Office of Research and Commercialization shall inform the graduate student as inventor as well as all other inventors within 120 days of disclosure as to whether the University wishes to assert an ownership interest in the intellectual property.
  3. The division of proceeds generated by the licensing or assignment of an **invention**, shall be according to the established royalty division set forth in the patent policy of the University of Central Florida Research Foundation.
  4. The graduate student as inventor(s) and the University shall not commit any act which would tend to defeat the University's or inventors' interest in the **invention** and shall take any necessary steps to protect such interests.
5. **Release of Rights**

At any stage of making the patent applications, or in the commercial application of an **invention**, if it has not otherwise assigned to a third party the right to pursue its interests, the Office of Research and Commercialization, may elect to withdraw from further involvement in the protection or commercial application of the **invention**. At the request of the graduate student in such case, the University shall transfer the **invention** rights to the inventor(s), in which case the **invention** shall be the inventor(s) property, and none of the costs incurred by the University or on its behalf shall be assessed against the inventor in whole or in part.
  6. **University Policy**
    - a. The University has a policy addressing the division of proceeds between graduate students and faculty when the research is done and results in a dissertation, University Regulations, 6C7-2.029 Copyrights and Patents). The University also has a policy addressing the division of proceeds between UCF inventor(s) and the University (see University Regulations, 6C7-2.029). It is also contained in the Patents and Copyrights Policy of the UCF Research Foundation. This same division of royalties will apply in the disbursement of royalty income to graduate students as inventor(s), unless this has been negotiated in a separate contractual agreement.
    - b. All sponsored research done by graduate students enrolled at the University for and with companies must have a contractual agreement with UCF negotiated at the start of that research. Graduate students must be informed at the start of the research about any contractual agreements that would concern future publication of their research work.
    - c. Dissertation or thesis dissemination can be delayed because of patent or proprietary information concerns of a sponsor. This can occur when a prior contractual agreement has been entered into that includes provisions for a research sponsor's review between the sponsor and University. (See Proprietary and Confidential Information above in the *Graduate Catalog*.) International Graduate Student Policies

## GRADUATE CERTIFICATE PROGRAM POLICIES

- ◇ Overview
- ◇ Certificate Program Admission Requirements
- ◇ Course Requirements and Loads
- ◇ Applicable Credits

### Overview

Graduate certificate programs are a way for universities to provide the latest disciplinary knowledge in the most flexible and convenient formats for the professional development of its alums and others who desire further education. Graduate certificate programs are very popular options at UCF for graduate study without having to commit to an existing master's or doctoral

program. One of the benefits of enrolling in a graduate certificate program is that later, should students decide to do so, they can usually apply all of the credits earned in the graduate certificate to a graduate program. The graduate certificate program is meant to be flexible and offer a short-term of study that provides specialized knowledge that supplements an existing degree. Graduate certificate programs are particularly helpful to those professions where licensure and continuing professional development are required. Many of our graduate certificate programs are offered online for convenience. One of the most important benefits of our graduate certificate programs is that they are taught by our graduate faculty using regular graduate courses at the university.

UCF has over 70 graduate certificate programs available to supplement existing graduate programs or to provide specialized knowledge in disciplines that complement the education of working professionals in the metropolitan area served by UCF. Many of our area employees have advanced graduate degrees and can enhance their education with specialized groups of courses. Frequently, a package of specialized courses that forms a certificate will increase employment credentials, lead to career enhancement, and produce more income.

It is the intent of these programs to be current and to provide specialized, state-of-the-art content to area employees. Often certificate programs are offered using flexible and nontraditional delivery systems that provide the best service to the employees in this metropolitan area. Distributed learning, weekend courses, evening courses, and accelerated term courses are acceptable.

Certificate programs are often ideal for nondegree students who would like to sample graduate courses before committing to a graduate degree program. Certificate programs may round out a graduate degree program, providing a special emphasis that supplements a graduate degree. Frequently, a certificate program can provide an interdisciplinary focus that provides more depth and understanding to an existing graduate program.

Any academic unit may propose a graduate certificate program that encompasses graduate courses in its graduate program. If an interdisciplinary certificate program is proposed, it must be acceptable to departments and faculty offering the courses and graduate programs on

which the certificate program is based.

## **Certificate Program Admission Requirements**

Students currently admitted to a graduate degree program or to nondegree status can apply and are eligible to enroll in graduate certificate programs. In addition, individuals who have previously completed bachelor's, master's, or doctoral degrees are eligible to enroll in certificate programs. In order to apply to a graduate certificate program, a student must submit an online admissions application, pay a \$30 application fee, and submit an official transcript showing an earned bachelor's or higher degree from a regionally accredited or recognized foreign institution. On the online application, the student must designate the certificate program that he/she wishes to enter. Students are required to submit the application and obtain formal admission to the graduate certificate program by the end of add/drop period in the semester in which the student registers for the final course in the certificate program.

Admission to a certificate program does not guarantee admission to a graduate program. However, once a person is accepted into a master's, specialist or doctoral graduate program, credits from a completed UCF certificate program may be applied toward an existing graduate program with the consent of the program. Nondegree students who are enrolled in a certificate program are not eligible for tuition support, assistantships, fellowships, or federal financial aid. Students are advised to apply for the graduate certificate program well in advance of completion of all required courses; formal admission is required by the end of add/drop period in the semester in which the student registers for the final course in the certificate program.

Students must complete the certificate requirements listed in the Graduate Catalog at the time of their formal admission to the certificate program.

## **Course Requirements and Loads**

A certificate program must include a minimum of nine semester hours. The course work must consist of an integrated and organized sequence of study; course substitutions are not permitted.

No internship or independent study courses may be used in a certificate program. The use of practicum courses in certificate programs is not generally

encouraged, but may be used in programs where there is a strong professional setting and on-campus faculty supervision. Alternative delivery programs are acceptable and encouraged.

A course may not apply toward more than one certificate program. Certificate students must take the full number of required hours. If an overlap of course work occurs between two or more certificate programs for the same student, the student must complete the total required hours by taking electives approved by the program.

All courses that are offered as part of a certificate program must be graduate-level courses. Students must earn course grades of “B-” or better to get credit toward the certificate. Courses may be retaken to achieve a better grade. However, the certificate will only be awarded if the graduate status GPA in the certificate program of study is 3.0 or higher.

## Applicable Credits

### Transfer of Credit

No graduate credit hours taken at other institutions can be applied to a graduate certificate program at UCF. If requested prior to the completion of the certificate program requirements, graduate credit hours taken at UCF from a prior baccalaureate, master’s, specialist, or doctoral degree may be applied toward a certificate, with the consent of the program, provided they are no more than three years old. The request for using credits from prior years must be submitted no later than the end of the add/drop period in the semester in which the student takes the final course in the certificate program.

### Recency of Credit

The student has three years from the date of admission to the certificate program to complete the certificate. In addition, no course older than three years at the time of completion may be used.

### Completion of Graduate Certificate

In order to be processed for completion of a graduate certificate program, students must obtain formal admission into the graduate certificate program by the end of the add/drop period in the semester in which the student registers for the final course in the certificate program (see Certificate Program Admission Requirements above). In

addition, students nearing completion of a graduate certificate program must file an application for completion (Graduate Certificate Completion Form) with the office that offers the program. The Graduate Certificate Completion form should be filed by the time that the student is registering for the final course in the certificate program, and such forms must be filed no later than the end of the semester in which the student enrolls in the last course required for the certificate program.

The Graduate Certificate Completion Form should be submitted to the department office that offers the graduate certificate program so that the required courses can be listed and final grades can be verified. The certificate program director’s approval signature signifies that requirements have been met according to the program of study and university policies. A college review and approval signature is required before the completion form is submitted to the UCF College of Graduate Studies for final verification, processing, and release of the certificate. Students will only be processed for completion of a graduate certificate if they have previously submitted a certificate application form, have been formally admitted to the program, and have filed a Graduate Certificate Completion form. Students must be enrolled in the semester in which the Graduate Certificate Completion is submitted.

## INTERNATIONAL GRADUATE STUDENT POLICIES

- ◇ Full-time Enrollment Requirements
- ◇ International Student Employment
- ◇ English Competency for Graduate Teaching Assistants
- ◇ International Visiting Scholars
- ◇ Linkage Agreements

### Full-time Enrollment Requirements

A full-time degree-seeking graduate student must take at least 9 credit hours in the fall and spring semesters. A half-time load is defined as enrolled in at least 4.5 credit hours in fall and spring terms. During the summer term, full-time is 6 credit hours and half-time is 3 credit hours. There are two exceptions to this policy:

1. For master’s students pursuing a thesis option, full-time enrollment is defined as 3 hours per semester (including summers, without skipping a semester) of thesis course work (XXX 6971),

after completion of all course work and until graduation. Students who wish to enroll in part-time hours should consult their adviser.

- For doctoral students who have passed the candidacy exam and are registered for doctoral dissertation (XXX 7980) hours only, full-time is 3 hours per semester until graduation. Such students must continue to enroll in at least three dissertation hours each semester (including summers, without skipping a semester) until they successfully complete the dissertation and graduate. Students who wish to enroll in part-time hours should consult their adviser.

Graduate students receiving assistantships, tuition support, and fellowships must be enrolled full-time as degree-seeking students who maintain good academic progress.

### **Special Considerations:**

All international students on F or J visas must maintain full-time, degree-seeking status, regardless of financial support received from the university. F and J visa holders should contact the International Services Center (ISC) to ensure that their enrollment conforms to the full-time definition for their visa status. International students should not change their course schedule or drop classes without advisement from the International Services Center. All international students who enroll in less than 9 hours per term must submit to ISC a Reduced Course Load Form that explains the nature of the reduced hours and must obtain approval from ISC (see [www.intl.ucf.edu](http://www.intl.ucf.edu) for Reduced Course Load Form). This requirement also applies to international students who are enrolled in less than 9 hours per term in thesis or dissertation hours.

Students who do not satisfy these full-time enrollment requirements will not qualify for graduate assistantships, fellowships or tuition support.

### **International Student Employment**

According to U.S. Citizenship and Immigration Services (USCIS) regulations, graduate students who are on an F-1 or J-1 visa may accept employment on campus without prior USCIS approval as long as students are enrolled full-time and employment does not interfere with their studies.

Graduate students who desire to engage in off-

campus employment must be approved by the International Services Center (ISC) for Curricular Practical Training (CPT) prior to beginning the employment. CPT is defined as employment that is an integral part of the established curriculum and can be in the form of an internship or cooperative educational experience. In order to qualify for CPT, there are several requirements that must be met. Please speak with an adviser at the ISC for more information on these requirements and prior to engaging in off-campus employment.

During the fall and spring semesters, on-campus employment is limited to no more than 20 hours per week while school is in session. During the summer enrollment periods, on-campus employment is limited to no more than 30 hours per week for students who are enrolled full-time as graduate assistants. Such employment may be up to 40 hours per week during the summer if students are not enrolled full-time as graduate assistants. (Please note that all graduate assistants during the summer must enroll in a full-time course load.) Employment may also be up to 40 hours per week during vacation or other break periods. Please speak with an adviser at the ISC for clarification of these policies.

On-campus employment is not permitted after completion of the program of study, unless the student is issued a Form I-20A-B to begin a new program and intends to enroll in the next regular academic term or session.

Students who received a bachelor's degree at one school and will start a master's degree or PhD at UCF are eligible to work during the summer at UCF as long as a Form I-20A-B was issued for the new master's or PhD program.

International students on an F-1 visa are eligible to apply for one year of optional practical training (OPT) after completion of their program.

For more information about the employment of international students, contact the International Services Center at 407-823-2337 or visit the office to speak with an adviser.

### **English Competency for Graduate Teaching Assistants**

Students who plan to serve as graduate teaching assistants (GTAs) and for whom English is a second language are required to pass the SPEAK test. The

SPEAK test is provided by the Educational Testing Service and evaluates an individual's English-speaking skills. This requirement applies to all students from countries where English is not the native language. However, such students will be exempt if they have completed a previous degree from an accredited U.S. college or university. Only exempted students and students who have satisfactorily passed the SPEAK test may have GTA appointments as long as they also attend the required GTA Training.

The SPEAK test will be administered as part of the GTA Training that is offered at the beginning of the fall and spring semesters each year by the Faculty Center for Teaching and Learning. All students who will serve as GTAs for the first time are required to attend the GTA Training and take the SPEAK test. Students who pass the test will be allowed to serve as GTAs.

Students who do not pass the SPEAK test will not be allowed to serve as GTAs unless they complete course work designed to improve English-speaking skills and pass the post-training administration of the test. The course work and post-training evaluations will be administered through the Center for Multicultural Multilingual Studies (CMMS). As needed, the university will provide each student one or two month-long sessions with post-training evaluations. If students achieve a satisfactory test score following the first session, they may be employed as GTAs. Otherwise, students must complete a second session and a second post-training evaluation. Students who require more than two sessions to speak English effectively will have to rely upon personal or department resources to pay for additional course work and post-evaluations.

### **International Visiting Scholars**

The following policy and procedures allow departments to invite international visitors to study, teach, or participate in research activities at UCF. The policy is directed to those who do not wish to earn a degree, but who may audit courses in the post-baccalaureate, nondegree-seeking status for professional development and who normally have complete financial support provided by some outside agency. These visiting scholars will have J-1 visa status and use the Professor, Research Scholar, or Specialist category as permitted by immigration regulations. Visitors seeking degrees will use regular UCF admission procedures and must enter the U.S. using the F-1 or J-1 visa student category.

Visiting scholars who are required to audit courses at UCF must fill out the UCF application for admission as a nondegree student and pay the application fee. The deadline is about four months before the beginning of a term. A faculty member, as Faculty Sponsor, must accept the responsibility for recommending, advising, and directing the activities of the scholar. The procedure for extending an invitation to a prospective scholar is as follows:

1. If financial support will be provided to the visiting scholar using university resources, then the approval of the university must be obtained on all correspondence with the visiting scholar. Written arrangements should be made with the Vice President for Research for financial support prior to invitations to visiting scholars.
2. The Department Chair will submit a recommendation to the Dean specifying the Faculty Sponsor, documenting anticipated activities, and providing the following information on the Visiting Scholar:
  - a. Date of birth
  - b. City and country of birth
  - c. Country of residence if different from country of birth
  - d. Place of work (academic institution, business firm, etc.)
  - e. Current position held in country of residence
  - f. Academic background
  - g. Professional experience
  - h. Source and amount of financial support (recommended honorarium, if any)
  - i. English proficiency
  - j. Dates of visit
  - k. Statement of how the Visiting Scholar will participate in research and what will be accomplished
  - l. Office space, equipment, etc. which will be required for scholar's use
3. If arrangements are approved, the Dean will notify the Vice President for Research that the College is extending an invitation. The Chair's recommendation will be included with the notification. These will be sent to the UCF College of Graduate Studies so that the invitation and application may be placed in the visiting scholar's official university file.
4. The UCF College of Graduate Studies will then forward copies of the information to the



International Services Center. Upon receipt and verification of the required documents, a Form DS-2019 for the purpose of the J-1 visa application J-1 Visa will be issued.

5. The Faculty Sponsor will then correspond with the visitor detailing the conditions of the visit, including whatever limited financial support and facilities will be provided and what is expected of the Scholar, with copies of this correspondence sent to the International Services Center and the Vice President for Research. The Scholar will be asked to write a brief report at the termination of the visit.
6. **All visiting scholars should report to the International Services Center directly upon arrival at UCF to ensure that their immigration documents are in order.**

During each academic term of the visit, the Visiting Scholar may be required to audit one hour of XXX 6918, Directed Research, under the direction of the Faculty Sponsor and also may be permitted (or required) to audit regular courses. The Visiting Scholar will be admitted to post-baccalaureate status and will audit courses as directed and approved by the Faculty Sponsor. The Visiting Scholar will not be permitted to take courses for credit unless formally admitted to a degree program or upon written approval from the Dean of the college in which the student is studying.

The international visiting scholar will be appointed Visiting Research Scholar or Visiting Scholar in the College and may be given a modest honorarium. Such scholars will normally not be maintained on the College payroll, but are expected to have extended financial support.

### **Linkage Agreements**

The State of Florida has established various linkage agreements to assist in the development of stronger economic and social ties between Florida and strategic foreign countries. Linkage Institutes are set up throughout the state and provide out-of-state tuition exemption to scholars from the foreign countries represented by the institutes. To participate in these exemptions, students must apply to the Linkage Institute for the country in which they reside to receive an out-of-state tuition award. Students participating are required to return home after their tenure of graduate study for a length of time equal to the exemption period. Each institute

develops its own criteria for selection of students and typically supports the out-of-state fees for about 20 to 30 scholars a year. The institutes established in Florida are listed below with their contact persons.

### **Florida-Brazil Institute**

Hannah H. Covert, University of Florida, 352-392-0375  
April Burriss, Miami-Dade Community College, 305-237-3482

### **Florida-Canada Institute**

Dr. Jean Kijek, University of Central Florida, 407-823-3648

### **Florida-Caribbean Institute**

Christine Jarchow, Florida International University, 305-348-1913

### **Florida-China Institute**

Dr. Henry O. K. Chen, University of West Florida, 850-474-2665  
Francine Arrington, Brevard Community College, 321-433-7342  
Dr. Miriam B. Stamps, University of South Florida, 813-974-6205

### **Florida-Costa Rica Institute**

Joan Cassels, Florida State University, 850-644-7823

### **Florida-Eastern Europe Institute**

Dr. Jean Kijek, University of Central Florida, 407-823-3648  
Dr. Charles Mojock, Lake-Sumter Community College, 352-365-3523

### **Florida-France Institute**

Joan Cassels, Florida State University, 850-644-7823  
Dr. Christine Probes, University of South Florida, 813-974-8081

### **Florida-Israel Institute**

Dr. William B. Stronge, Florida Atlantic University, 561-297-2833  
Dr. William Greene, Broward Community College, 954-201-2206

Dr. Nancy Q. Rosen and Dr. Benjamin Popper,  
Florida Atlantic University, 954-236-1056

### **Florida-Japan Institute**

Dr. Mark Orr, University of South Florida, 813-974-8081

Ms. Shigeko Honda, University of West Florida,  
850-474-3108

### **Florida-Mexico Institute**

Christine Jarchow, Florida International University,  
305-348-3593

### **Florida-West Africa Institute**

Anges Coppin, Florida Agricultural and Mechanical  
University, 850-599-3562

Dennis Gayle and Betty Flinchum, University of  
North Florida, 904-620-1950

Dr. Brenda Simmons, Florida Community  
College at Jacksonville, 904-633-5895

## **MASTER'S PROGRAM POLICIES**

- ◇ Master's Admission Requirements
- ◇ Course Requirements
- ◇ Accelerated Undergraduate and Graduate Programs
- ◇ Senior Scholars
- ◇ Time Limitation for Degree Completion
- ◇ Other Academic Requirements
- ◇ Advisement
- ◇ Thesis Requirements

### **Master's Admission Requirements**

Admission to a master's degree program requires a bachelor's degree from a regionally accredited institution, or recognized foreign institution, and a minimum of a 3.0 GPA in the last 60 attempted semester hours of undergraduate studies, or a competitive score on the GRE or if appropriate the GMAT or a master's degree from an accredited institution and GRE or GMAT scores.

#### **A GRE or GMAT (Business Administration) exam score is required of all applicants.**

Admission to the university does not constitute admission to a master's program. Meeting minimum university admission standards for graduate status may not satisfy master's program admission requirements. Programs often require additional

or higher criteria. An applicant's character, integrity and general fitness to practice a particular profession may also be considered in the admission process. The university encourages applications from a diverse population and values diversity in our graduate programs.

### **Course Requirements**

The course requirements for a master's degree include lectures, seminars, discussions, independent study, independent research, and thesis research. A minimum of 30 semester hours (combined course work and thesis) is required, although many programs require more. The program of study must include at least 30 credit hours of post-baccalaureate, graduate course work (5000-level or higher), which must be taken as part of an approved graduate program of study. At least half of the program of study must be at the 6000 level. Only graduate-level course work with a grade of "C-" or higher may be used to satisfy degree requirements. For the thesis option, at least 24 semester hours of course work must be earned exclusive of thesis. In no case will the number of thesis hours in excess of the amount required by a program be counted toward degree completion. For the nonthesis option, at least 50 percent of the credits offered for the degree must be in a single field of concentration. A research report, capstone course, comprehensive exam, or other culminating experience is required in a nonthesis option master's program that demonstrates that graduate students have engaged in independent learning. An explanation of how the culminating experience promotes independent learning is required in each program's curricular description.

### **Independent Study Hours**

A maximum of three courses may be taken as independent study, for a total of no more than six semester hours.

### **Residence Credit**

The master's degree program must include at least 21 semester credit hours taken at UCF. Residence credits may be earned through enrollment in courses physically offered on the main campus; or at the UCF regional campuses (Brevard, Daytona Beach, and Downtown); or at geographical locations where UCF courses are being taught by regular UCF faculty members. Residence credits may

also include UCF courses offered through the web or courses taken as a Traveling Scholar if prior approval is obtained.

### Transfer of Credit

Master's transfer credits typically consist of hours completed at a regionally accredited institution (including UCF) or recognized international institutions BEFORE a student is given graduate status in his/her master's program at UCF. Only graduate-level or higher courses may be accepted as transfer credits. Similarly, only courses with a grade of "B-" or higher may be transferred into a program of study provided they are seven or less years old unless part of an earned master's degree. Except as noted in the bullets below, no more than a combined total of nine semester hours of credits may generally be transferred into a master's program of study. The acceptance of transfer credits must be recommended by the program director of the student's major. Students may petition their program department for exceptions to the limits given below. Transfer course work for master's programs may come from any of the following sources, with the limitations noted:

- Work taken as an undergraduate student at UCF. Graduate programs are permitted to accept up to nine hours of graduate course work taken at UCF while an undergraduate student was enrolled in an undergraduate program of study. The use of these hours of graduate course work in a graduate program of study is at the discretion of the graduate program director and graduate college coordinator. Not all graduate programs permit students to use graduate credit hours for a graduate program of study, if the hours have also been used for an undergraduate degree. It is the student's responsibility to obtain advisement from the graduate program director of the specific program before registering in graduate-level courses. (See also the section on Senior Scholars.)
- Work taken as a graduate student at other regionally accredited or recognized international institutions. Students with international transfer credit may be required to obtain a WES evaluation. No more than nine semester hours of graduate course work and no undergraduate course work may be transferred into a graduate program from other regionally accredited institutions or recognized international institutions.

- Work taken while in graduate status at UCF. No more than nine semester hours of graduate credit may be transferred into the graduate program from UCF course work taken while in nondegree status. Similarly, no more than nine semester hours of graduate course work may be transferred into the graduate program from courses taken as part of another graduate degree earned at UCF. For those students who may have completed graduate-level courses taken while in graduate status in another major at UCF where a degree was not earned, up to 9 hours of graduate course work may be credited toward a new degree program with the consent of the new program. Decisions regarding the appropriateness and acceptance of such credits into a program are at the discretion of the program into which transfer is requested. All of the hours taken in a graduate certificate program can be used in a graduate degree program with the consent of the program. These hours are not subject to the nine-hour limit.
- Work taken as a Traveling Scholar. Students who wish to take graduate course work elsewhere while enrolled as a student at UCF must apply and be accepted as a Traveling Scholar. Graduate credits earned as a Traveling Scholar are considered "resident" credits that are earned at UCF and are applicable to the program of study without being subject to the nine-hour limit. Consult the section on Traveling Scholars in the *Graduate Catalog* for more information.

### Accelerated Undergraduate and Graduate Programs

Some programs combine undergraduate and graduate course work in a more seamless educational experience for students, reducing the time spent working on both degrees and providing a challenging educational experience to outstanding undergraduates. These accelerated bachelor's and master's (4+1) programs usually will allow students to complete a bachelor's and master's degree within about five years and are intended for only the most highly qualified undergraduate students.

While students are classified as undergraduate students, they are subject to undergraduate policies. Similarly, when classified as graduate students, they are subject to graduate policies and may qualify for graduate financial support.

The undergraduate requirements listed in the *Graduate Catalog* for specific programs are for informational purposes only. The official requirements are detailed in the *Undergraduate Catalog* and take precedence over what is described here.

## Senior Scholars

UCF undergraduates who meet departmental eligibility requirements may enroll in UCF graduate courses and use them toward their undergraduate degree and their graduate program of study upon admission to a UCF graduate program. As Senior Scholars they are entitled to use up to nine graduate credit hours (more may apply for some accelerated programs) toward a UCF graduate degree or certificate, provided they have received advisement and written approval to do so from the graduate program director. This permission must be obtained before enrolling in the graduate courses. In addition to approval from the graduate program director, undergraduates must consult their undergraduate adviser to ensure that registration in graduate-level course work will meet their bachelor's degree requirements. The student must receive college and university approval to interrupt the residency requirement. The University Waiver Form can be obtained from the undergraduate department office. Tuition and fees for graduate-level courses are different from undergraduate courses, and it is the student's responsibility to consult with the Office of Student Financial Assistance (<http://finaid.ucf.edu/>) regarding adjustments that might be needed for Bright Futures and other scholarship funding.

## Time Limitation for Degree Completion

The student has seven years from the date of admission (prerequisite, articulation, and foundation courses are exempt) to the master's program to complete the degree. In addition, no course older than seven years at the time of graduation may be used in the Program of Study for a master's degree. Students who do not maintain continuous enrollment (missing enrollment at the university for a period of three consecutive semesters) must file for readmission to the university, although seven years is measured from when the student was first admitted to the program.

## Readmission

Master's students should maintain continuous enrollment in their degree program. Students who anticipate that they may not be able to enroll continuously due to external circumstances should apply for a Special Leave of Absence (see Special Leave of Absence in the General Graduate Policies section).

If master's students do not maintain continuous enrollment and have not filed for a special leave of absence (see Continuous Attendance in the General Graduate Policies section), they must file for readmission to the university. To file for readmission, the student must complete a new online Application. For more information about readmission, refer to the Admissions and Registration section of this catalog.

Readmission decisions are individually made, based on such factors as space in the program, reasons for the break in graduate education, progress in the degree program, among others. Readmission is not guaranteed.

## Other Academic Requirements

### Comprehensive Culminating Experience

An appropriate culminating academic experience is required of all master's degree students. It may include a thesis defense, written or oral examination, research report, capstone course, presentation and defense of a portfolio of student work, or other appropriate scholarly activity of a type that has been approved by the Graduate Council that demonstrates that graduate students have engaged in independent learning. An explanation of how the culminating experience promotes independent learning is required in each program's curricular description.

## Advisement

### Appointment of Committee or Adviser

An academic adviser and advisory committee is required when the student is enrolled in a thesis option and can be useful when there is substantial flexibility in course work. It is the responsibility of the department to appoint an adviser and advisory committee.

## Thesis Requirements

The thesis is the culminating or comprehensive experience for those who conduct an original research study as part of a thesis-option program. The thesis consists of a common theme with an introduction and literature review, details of the study, and results and conclusions. Since the work is original, it is very important that care is taken in properly citing ideas and quotations of others. Academic dishonesty in thesis, research report and dissertation work may result in termination from the degree program.

An oral defense of the thesis is required. The approved thesis must be written and prepared in accordance with program, college, and university requirements. The UCF Thesis and Dissertation Manual describes formatting requirements for theses and outlines the steps that graduate students must follow in order to submit their theses electronically to the UCF College of Graduate Studies.

Additionally, the Thesis and Dissertation Office maintains online workshops to inform graduate students about procedures, deadlines, and requirements associated with preparing a thesis.

Thesis students are required to submit their thesis electronically. Electronic thesis/dissertation (ETD) submissions are archived by the UCF library in digital format that is widely accessible. The electronic thesis may include video and audio clips as well as other formats that are appropriate for the field of study.

All theses that use research involving human subjects, including surveys, must obtain approval from an independent board, the Institutional Review Board (IRB), for this prior to starting the research. Graduate students and the faculty that supervise them are required to attend training on IRB policies, so this needs to start well in advance of the research start date. It is imperative that proper procedures are followed when using human subjects in research projects. Information about this process can be obtained from the Office of Research and Commercialization ([www.research.ucf.edu](http://www.research.ucf.edu)). Click on "Compliance" and the *IRB Policy and Procedures Manual* is available. In addition, should the nature of the research or the faculty supervision change since the IRB approval was obtained, then new IRB approval must be sought. Failure to obtain this prior approval could jeopardize receipt of the student's degree.

Students who wish to complete their degree requirements in a given semester must take their oral defense and submit their final electronic copy to the UCF College of Graduate Studies by the dates shown in the Academic Calendar.

## Thesis Advisory Committee Composition

A student writing a thesis must have a Thesis Advisory Committee consisting of at least three members, who are approved graduate faculty with qualifications to serve on thesis committees ([www.graduate.ucf.edu/CurrentGradCatalog/content/gradfaculty/](http://www.graduate.ucf.edu/CurrentGradCatalog/content/gradfaculty/)). This committee will recommend to the Dean of the college regarding the student's program of study, provide continual guidance for the student, and be the principal mechanism for the evaluation of the student's thesis and performance in any general examinations. At least two members of the Thesis Advisory Committee must be qualified regular faculty members from the student's department (or college, if a college-wide program) at UCF, one of whom must serve as the chair of the committee. Adjuncts, visiting faculty members, courtesy appointees, or qualified individuals from outside the university may serve as a member or co-chair of a thesis advisory committee if otherwise qualified, but may not serve as the chair.

Program areas may specify additional committee membership beyond the minimum of three. Qualifications of additional members must be equivalent to that expected of UCF faculty members. UCF faculty members must form the majority of any given committee. Additional information regarding the criteria for serving as a member, co-chair, or chair of a Thesis Advisory Committee is provided in UCF Faculty Senate Resolution 2004-2005-3 Regarding Minimum Qualifications for Participating in Graduate Education.

Committee membership must be approved by the Dean or designee of that college. All members must be in fields related to the thesis topic. The UCF College of Graduate Studies reserves the right to review appointments to a Thesis Advisory Committee, place a representative on any Thesis Advisory Committee, or appoint a co-chair. A student may request a change in membership of the Thesis Advisory Committee by consulting their program director.

All committee members vote on acceptance or rejection of the thesis proposal and the final

thesis. The thesis proposal and final thesis must be approved by a majority of the committee.

### Thesis Enrollment Requirement

Master's level students who wish to be considered full-time and who are engaged in thesis or research report-related activity must be enrolled for at least three semester credit hours of thesis (or research report) each semester continuously (including summers) after completion of regular course work and until successful defense and graduation. This requirement does not negate other regulations regarding full-time enrollment or the requirement that all graduate students be enrolled in the term in which they graduate. (See Registration in Term of Graduation in the *Graduate Catalog*.) Students who wish to enroll in part-time hours should consult their adviser.

### Thesis Defense

Thesis defenses will be approved by a majority vote of the Thesis Advisory Committee. Thesis committee members who do not approve of the thesis may choose not to sign the thesis approval sheet. Further approval is required from the Dean or Dean designee and the UCF College of Graduate Studies before final acceptance of the thesis in fulfilling degree requirements.

### Review for Original Work

Effective Fall 2008, the university requires all students submitting a thesis or dissertation as part of their graduate degree requirements to first submit their electronic documents through Turnitin.com for advisement purposes and for review of originality. The thesis or dissertation chair is responsible for scheduling this submission to Turnitin.com and for reviewing the results from Turnitin.com with the students advisory committee. The advisory committee uses the results appropriately to assist the student in the preparation of their thesis or dissertation.

Before the student may be approved for final submission to the university, the thesis or dissertation chair must indicate completion of the Turnitin.com requirement by signing the Review for Original Work section on the Thesis and Dissertation Attachment form (see [www.graduatestudies.ucf.edu](http://www.graduatestudies.ucf.edu), Forms & Files).

### Thesis Dissemination

While UCF respects the wishes of students who would like to publish their work and/or apply for patents, it is essential for scholarly research conducted at a university to be available for dissemination. While several options are available for the release of an ETD, it is the goal of the university that all theses be available through the UCF Libraries catalog. Upon uploading the final ETD to the UCF Libraries ETD website, students, in some cases with their advisers, must choose one of the options for the availability of their ETD through UCF. Students with potential patent concerns are required to discuss the following options with their thesis adviser and indicate the availability choice on the Thesis and Dissertation Attachment form (see [www.graduatestudies.ucf.edu](http://www.graduatestudies.ucf.edu), Forms & Files).

- For those with no patent or copyright concerns:
  - Immediate worldwide dissemination with no restrictions.
- For those who have patent issues, dissemination options must be discussed and agreed to with your adviser. Choices are:
  - Pending dissemination of the entire work for six months for patent or other proprietary issues, with an additional six months extension available. Once the patent and proprietary issues are resolved, then immediate worldwide dissemination with no restrictions.
  - Pending dissemination of the entire work for six months for patent or other proprietary issues, with an additional six months extension available. Once the patent and proprietary issues are resolved, choosing this option allows the student to make the thesis available to the university community for the period chosen below, and then for it to be distributed via the Web beyond that time.
    - one year
    - three years\*
    - five years\*
- For those who have copyright concerns, dissemination options are a student decision within the guidelines of individual departments that may have requirements for dissemination. If a department has no guidelines for dissemination, then students are free to choose one of the options below. In general, those in the sciences and engineering will choose one year while students in the arts and humanities may choose longer. Choosing this option allows

the student to make the thesis available to the university community for the period chosen below, and then for it to be distributed via the Web beyond that time.

- one year
- three years\*
- five years\*

\*Does not require thesis adviser signature and approval.

### Public Access

Students, faculty, staff, and other interested parties are strongly encouraged to attend thesis final defense sessions. Notices providing date, time, and location of such meetings must be distributed to all academic departments.

These sessions are educational and informative for graduate students and provide an opportunity for colleagues to observe the work of their peers. At the discretion of the Chair of the Thesis Advisory Committee, questions may be invited from the audience. That part of the session involving committee discussion leading to a vote on the acceptance of the work will be closed. Sessions may be recessed briefly to excuse visitors and the candidate before this stage begins.

## EDUCATION SPECIALIST PROGRAMS

- ◇ Overview
- ◇ Specialist Admission Requirements
- ◇ Examinations
- ◇ Program of Study and Academic Standards
- ◇ Transfer of Credit
- ◇ Time Limitation and Continuous Attendance

### Overview

Education Specialist (Ed.S.) degrees are awarded in Educational Leadership, Curriculum and Instruction, and School Psychology (which offers a track in School Counseling). The Ed.S. degree provides an opportunity for professionals in leadership positions in an educational environment to receive in-depth academic study. This degree provides the opportunity for the development of a high level of professional proficiency in such areas as instruction, supervision, administration, curriculum, and current research literature. The primary goal of the Ed.S. degree is teaching or acquiring professional proficiency in a specialized

education-related area. Because the purpose of the Ed.S. degree may differ from that of the Ed.D., credit earned in an Ed.S. program is not automatically transferable to a doctoral program. Instead, if a holder of an Ed.S. degree enters a doctoral program at a later date, the doctoral advisory committee will decide how much of the credit earned in the Ed.S. program will be credited toward the doctorate. In any case, only 30 hours taken prior to doctoral status may be transferred into the doctoral program of study.

### Specialist Admission Requirements

Admission to the Education Specialist program requires (1) a master's degree from a regionally accredited institution or recognized foreign institution (except in the case of the School Psychology Specialist program, which does not require a master's degree, but does have other special admission criteria), (2) a competitive score on the GRE, (3) other criteria as required by the individual departments, and (4) a recommendation for admission by the appropriate College of Education Graduate Admissions Committee.

### Examinations

Educational Leadership majors must successfully complete one 5-hour examination in their major area and one 3-hour examination in an area of specialization. Curriculum and Instruction majors must successfully complete one 3-hour examination in their teaching specialty and one 3-hour examination in the Educational Foundations area. School Psychology (School Psychology Track) students must successfully complete one 3-hour examination during the last semester of enrollment.

### Program of Study and Academic Standards

A program of study (i.e., required course work) will be specified by the student's program area and approved by the college. Minimal core requirements for the Ed.S. degree consist of 36 hours beyond the master's degree in an approved program, which must include a minimum of 12 graduate-level hours in the specialization area, 6 graduate-level hours in research/statistics, and additional core requirements that are specific to each of the Ed.S. degrees. A graduate status GPA of 3.0 must be maintained in all graduate course work taken at UCF since admission into the specialist program. All other academic

standards which apply to master's students will not be lower for specialist students.

## Transfer of Credit

**Educational Leadership program.** A maximum of 9 semester hours earned in a master's degree may be applied to the program of study. Transfer credit decisions are made by the respective graduate program directors and the specialization advisers with the approval of the College of Education.

**Curriculum and Instruction program.** A maximum of 9 semester hours earned in a master's degree may be applied to the program of study. Transfer credit decisions are made by the respective graduate program directors and the specialization advisers with the approval of the College of Education.

**School Psychology program.** Students entering the School Psychology program from the baccalaureate level may transfer in a maximum of 9 semester hours of graduate credit earned subsequently at an accredited institution of higher education. Courses taken as an undergraduate student may not be used for transfer unless the credit was graduate level and not a part of the undergraduate degree program.

## Time Limitation and Continuous Attendance

The student has seven years from the date of admission (prerequisite, articulation, and foundation courses are exempt) to the specialist program to complete the degree. No course older than seven years, at graduation, may be used in the program of study for a specialist degree. Students who do not maintain continuous enrollment (missing enrollment at the university for a period of three consecutive semesters) must file for readmission to the university, although seven years is measured from when the student was first admitted to the program.

## Readmission

Specialist students should maintain continuous enrollment in their degree program. Students who anticipate that they may not be able to enroll continuously due to external circumstances should apply for a Special Leave of Absence (see Special Leave of Absence in the General Graduate Policies section).

If specialist students do not apply for a Special

Leave of Absence and do not maintain continuous enrollment (see Continuous Attendance in the General Graduate Policies section), they must file for readmission to the university. To file for readmission, the student must complete a new online Application. For more information about readmission, refer to the Admissions and Registration section of this catalog.

Readmission decisions are individually made, based on such factors as space in the program, reasons for the break in graduate education, progress in the degree program, among others. Readmission is not guaranteed.

## DOCTORAL PROGRAM POLICIES

- ◇ Doctoral Admission Requirements
- ◇ Course Requirements
- ◇ Time Limitation and Continuous Enrollment
- ◇ Examinations
- ◇ Candidacy
- ◇ Dissertation Requirements

## Doctoral Admission Requirements

Eligibility for admission to a doctoral program is limited to superior students who have demonstrated intellectual ability, high achievement, and adequate preparation for advanced study and research in a chosen field.

Minimum university standards for admission to a doctoral program require a bachelor's degree from a regionally accredited institution or recognized foreign institution and a minimum of a 3.0 GPA in the last 60 attempted semester hours of undergraduate studies, or a competitive score on the GRE or a score of at least 540 on the GMAT, or a master's degree from an accredited institution and GRE or GMAT scores. **A GRE or GMAT (Business Administration) score is required of all applicants.** However, meeting minimum university admission standards may not satisfy doctoral program admission requirements. Programs often require additional or higher criteria.

## Course Requirements

The course requirements for a doctoral degree will consist of lectures, seminars, discussions, independent research, independent study, and dissertation research. However, because of the advanced nature of doctoral education, seminars



and independent study are used frequently to encourage student participation, debate, evaluation, and discussion of diverse ideas and approaches. Student presentations and discussions are a standard instructional technique in doctoral programs, and careful analysis, independent research, and greater understanding and application of ideas is expected. A primary objective of doctoral study is to educate students to a point of excellence in conducting, reporting, and applying scholarly research. Successful students must demonstrate that they are able to conduct and report original independent research that contributes substantially to the discipline in which they study.

Each doctoral program of study will include a minimum of 72 semester hours of graduate credit beyond the baccalaureate degree. All course work in a doctoral program must be at 5000 level or higher. At least one-half of the credit hours must be in 6000-level or 7000-level including the allowed number of research and dissertation hours. For students with waived hours from an earned master's, this amount is at least one-half of the program hours remaining after the waived hours are applied. Only graduate level course work with a grade of "C-" or higher may be used to satisfy degree requirements. A university-wide minimum of at least 15 hours of dissertation credits is required for all doctoral programs, although some programs require a greater number of dissertation hours. In no case will the number of dissertation hours in excess of the amount required by a program be counted toward degree completion. Some programs require considerably more than the minimum of 72 hours because of the nature of the discipline and the standards of the associated profession.

Students admitted with an earned master's degree from a regionally accredited institution or recognized foreign institution may be eligible to have up to 30 hours of their doctoral program waived without a course-by-course review of completed course work; provided the master's degree was earned in the same area of study. In cases where a student's master's degree is in an area that is different from the doctoral program into which he/she is admitted, programs must conduct a course-by-course review and can waive up to 30 hours of selected courses. If there are deficiencies in the student's master's degree program, the student may be required to take additional prerequisite or background courses in addition to the minimum (e.g., 42 hours) required by the university.

## Course Levels

**6000- and 7000-Level Courses**—A minimum of 36 credit hours (including courses taken in a master's program) must be in 6000-level and 7000-level courses, which are designed, respectively, for graduate students and doctoral students only. For students with waived hours from an earned master's, this amount is at least one-half of the program hours remaining after the waived hours are applied.

## Independent Study Hours

No more than 12 total semester hours of independent study (including up to six hours counted toward a master's degree) may be applied to a doctoral program of study.

## Residency Requirement

In order to meet the residency requirement, doctoral students must register for 9 hours in each of two consecutive semesters.

## Transfer Credits

Graduate programs are permitted to transfer up to 9 graduate hours (including Senior Scholar hours) that have not been applied to a previous graduate degree, or waive up to 30 hours of course work from a previously awarded master's degree. Doctoral transfer credits typically consist of graduate course work completed at a regionally accredited institution or recognized foreign institution (including UCF) BEFORE a student is given graduate status in his/her doctoral program at UCF. Only graduate-level or higher courses may be accepted as transfer credits. Similarly, only courses with a grade of "B-" or higher may be transferred into a program of study. The acceptance of transfer credits must be recommended by the program director of the student's major.

Graduate programs are permitted to accept up to nine hours of graduate course work taken at UCF while an undergraduate student enrolled in an undergraduate program of study, as part of the Senior Scholars program. Transfer work that is not part of an earned degree is subject to the seven-year rule as explained in the Continuous Attendance section of the *Graduate Catalog*. The use of these hours of graduate course work in the doctoral program of study is at the discretion of the doctoral program director and graduate

college coordinator. Not all graduate programs permit students to use graduate credit hours for a graduate program of study if the hours have been used for an undergraduate degree. It is the student's responsibility to obtain advisement from the graduate program director of the specific program before registering in graduate-level courses.

## Time Limitation and Continuous Enrollment

The student has seven years from the date of admission to the doctoral program to complete the dissertation and complete the doctoral degree. No courses used in a program of study can be older than seven years at the time of graduation. There is no time limitation for waived hours from a completed master's degree used toward a doctoral degree.

Students who anticipate being out for an extended period of three semesters or longer should apply for a Special Leave of Absence. Students who do not maintain continuous enrollment without a Special Leave of Absence (see Continuous Attendance in the *Graduate Catalog*) must file for readmission to the university, although seven years is measured from when the student was first admitted to the program.

## Readmission

If doctoral students do not maintain continuous enrollment (see Continuous Attendance in the General Graduate Policies section), they must file for readmission to the university. To file for readmission, the student must complete a new online Application. For more information about readmission, refer to the Admissions and Registration section of this catalog.

Readmission decisions are individually made, based on such factors as space in the program, reasons for the break in graduate education, progress in the degree program, among others. Readmission is not guaranteed.

## Examinations

To avoid confusion of terminology for examinations, all programs should use the following terms:

**Qualifying Examination.** Eligibility to continue a doctoral program should be limited to superior

students who have demonstrated intellectual ability, high achievement, and adequate preparation for advanced study and research in a chosen field. The decision to allow a student continuing progress toward a doctorate is made by the graduate committee of the program area concerned and the Dean of the college on the basis of the qualifying examination (optional by programs) and/or other criteria as specified by the individual program area. This exam is normally given within the first year of the doctoral program. This is a written examination and is permanently filed in the student's records in the program. Programs have their own requirements as to how many times this exam can be repeated.

**Candidacy Examination.** This exam takes place prior to admission to Candidacy Status. This is a written examination and is permanently filed in the student's permanent records. It is normally taken near the end of completion of course work, and must be passed before being allowed to enroll in doctoral dissertation (XXX 7980) hours. Programs have their own requirements, which are explained in their graduate student handbooks, as to how many times this exam can be repeated.

**Dissertation Proposal Examination.** After passing the general Candidacy Examination, the student will write and defend a Dissertation Proposal in an oral examination. Programs have their own requirements as to how many times this exam can be repeated. All materials including the approved proposal and other agreements will be kept in the student's file in the program.

**Dissertation Defense.** This is an oral examination (or defense) of the dissertation.

## Examination Committee

In some programs a doctoral examination committee will be formed consisting of several faculty members representing the appropriate disciplines and approved by the Dean or college designee to administer qualifying and/or candidacy examinations. In many cases this committee will consist of the program graduate committee. All members will evaluate and vote as to whether students have successfully completed the exams.

## Candidacy

### Admission to Candidacy

Students may not be admitted to candidacy until

a Doctoral Committee has been appointed, and the Committee has certified that the student has successfully completed the Candidacy Examination and demonstrated the qualifications necessary to successfully complete requirements for the degree. Only after admission to candidacy may a student register for doctoral dissertation hours (XXX 7980). The admission to candidacy will be approved by the graduate college coordinator and forwarded to the UCF College of Graduate Studies for status change. Doctoral students admitted to candidacy are expected to enroll in dissertation hours and to devote full-time effort to conducting their dissertation research and writing the required dissertation document. Students in doctoral candidacy must continuously enroll in at least three hours of dissertation course work (XXX 7980) each semester (including summer) until the dissertation is completed.

### **Candidacy Examination**

The purpose of the Candidacy Examination is for the student to demonstrate knowledge of the field, including theory, bibliography, and research methodology. The examinations must be written and should be based on the student's plan of study and may be a defense of a written dissertation proposal. Written examinations are administered and established on campus by the student's Doctoral Committee in coordination with the college. All written original examination materials will be kept in the student's file in the program.

### **Dissertation Requirements**

Dissertations are required in all doctoral programs. The dissertation consists of an original and substantial research study designed, conducted, and reported by the student with the guidance of the Dissertation Committee. The written dissertation must include a common theme with an introduction and literature review, details of the study, and results and conclusions prepared in accordance with program and university requirements. The dissertation is expected to represent a significant contribution to the discipline. Since this work must be original, it is very important that care is taken in properly citing ideas and quotations of others. Failure to do so is academic dishonesty and subject to termination from the program without receiving the degree. An oral defense of the dissertation is required.

### **Enrollment in Dissertation Hours**

The university requires all doctoral students to take a minimum of 15 credit hours of doctoral dissertation hours; however, specific programs may require more than this minimum. Only those dissertation hours required by the program may be used in the program of study. Dissertation research is considered to be a full-time effort, and post-candidacy enrollment in at least three doctoral dissertation (XXX 7980) credit hours constitutes full-time graduate status. Doctoral students who have passed candidacy and have begun taking doctoral dissertation hours (XXX 7980) must enroll in at least three dissertation hours each semester (including summers, without skipping a semester) and continue doing so until they complete the dissertation and graduate. Students wishing to enroll in part-time hours should consult with their adviser.

### **Dissertation Advisory Committee Composition**

Doctoral students must have a Dissertation Advisory Committee prior to the Candidacy Examination. The Committee will consist of a minimum of four members, who are graduate faculty approved for doctoral advisory committee membership. See the Graduate Faculty section for a list of those approved faculty members. At least three members must be qualified regular faculty members from the student's department (or college, if a college-wide program) at UCF, one of whom must serve as the chair of the committee. One member must be from either outside the student's department at UCF (or college, if a college-wide program) or outside the university.

Adjuncts, visiting faculty members, and outside scholars may serve as a member or co-chair of a dissertation advisory committee, but may not serve as the chair. One of the co-chairs must satisfy faculty qualifications for serving as a chair of a dissertation advisory committee. The other co-chair must satisfy the minimum requirements for serving as a member of a dissertation advisory committee. A member from outside the university may serve as co-chair without being appointed as an adjunct or visiting faculty member provided that all other membership requirements are met.

Program areas may specify additional committee membership beyond the minimum of four. Qualifications of additional members must be equivalent to that expected of UCF faculty members. UCF faculty members must form the

majority of any given committee. Additional information regarding the criteria for serving as a member, co-chair, or chair of a Dissertation Advisory Committee is provided in UCF Faculty Senate Resolution 2004-2005-3 Regarding Minimum Qualifications for Participating in Graduate Education.

Committee membership must be approved by the Dean or designee of that college. All members must be in fields related to the dissertation topic. The UCF College of Graduate Studies reserves the right to review appointments to a dissertation advisory committee, place a representative on any dissertation advisory committee, or appoint a co-chair. A student may request a change in membership of the dissertation advisory committee.

All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the committee.

### **Dissertation Preparation**

The UCF Thesis and Dissertation Manual describes UCF's formatting requirements for dissertations and outlines the steps graduate students must follow in order to submit their dissertations electronically to the UCF College of Graduate Studies. The Thesis and Dissertation Office maintains online workshops to inform graduate students about procedures, deadlines, and requirements associated with preparing a dissertation. Students who have just passed Candidacy are strongly encouraged to visit the online workshop.

Dissertation students will submit their dissertations electronically. Electronic thesis/dissertation (ETD) submissions will be archived by the UCF library in digital format and will be more widely accessible. In addition, students may use video and audio clips as well as other formats that may be appropriate for their field of study.

All dissertations that use research involving human subjects, including surveys, must obtain approval from an independent board, the Institutional Review Board (IRB), for this prior to starting the research. Graduate students and the faculty that supervise them are required to attend training on IRB policies, so this needs to start well in advance of the research start date. It is imperative that proper procedures are followed when using human subjects in research projects. Information about this

process can be obtained from the Office of Research and Commercialization ([www.research.ucf.edu](http://www.research.ucf.edu)). Click on "Compliance" and the *IRB Policy and Procedures Manual* is available. In addition, should the nature of the research or the faculty supervision change since the IRB approval was obtained, then new IRB approval must be sought. Failure to obtain this prior approval could jeopardize receipt of the student's degree.

Students who wish to complete their degree requirements in a given semester must take their oral defense and submit their dissertation to the UCF College of Graduate Studies by the dates shown in the Academic Calendar. Doctoral students also must provide their electronic copy for microfilming by University Microfilms International (UMI). The College of Graduate Studies will send the student's completed UMI form and microfilming fee to UMI, and the Library will send the electronic dissertation to UMI.

### **Dissertation Defense**

The dean of the college or his/her designee will normally attend all dissertation defenses. Dissertations will be approved by a majority vote of the dissertation advisory committee. Further approval is required from the Dean or Dean designee and the UCF College of Graduate Studies before final acceptance of the dissertation in fulfilling degree requirements.

### **Review for Original Work**

Effective Fall 2008, the university requires all students submitting a thesis or dissertation as part of their graduate degree requirements to first submit their electronic documents through Turnitin.com for advisement purposes and for review of originality. The thesis or dissertation chair is responsible for scheduling this submission to Turnitin.com and for reviewing the results from Turnitin.com with the students advisory committee. The advisory committee uses the results appropriately to assist the student in the preparation of their thesis or dissertation.

Before the student may be approved for final submission to the university, the thesis or dissertation chair must indicate completion of the Turnitin.com requirement by signing the Review for Original Work section on the Thesis and Dissertation Attachment form (see [www.graduatestudies.ucf.edu](http://www.graduatestudies.ucf.edu), Forms & Files).

## Dissertation Dissemination

While UCF respects the wishes of students who would like to publish their work and/or apply for patents, it is essential for scholarly research conducted at a university to be available for dissemination. While several options are available for the release of an ETD, it is the goal of the university that all dissertations be available through the UCF Libraries catalog. Upon uploading the final ETD to the UCF Libraries ETD website, students, in some cases with their advisers, must choose one of the options for the availability of their ETD through UCF. Students with potential patent concerns are required to discuss the following options with their dissertation adviser and indicate the availability choice on the Thesis and Dissertation Attachment form (see [www.graduatestudies.ucf.edu](http://www.graduatestudies.ucf.edu), Forms & Files).

- For those with no patent or copyright concerns:
  - Immediate worldwide dissemination with no restrictions.
- For those who have patent issues, dissemination options must be discussed and agreed to with your adviser. Choices are:
  - Pending dissemination of the entire work for six months for patent or other proprietary issues, with an additional six months extension available. Once the patent and proprietary issues are resolved, then immediate worldwide dissemination with no restrictions.
  - Pending dissemination of the entire work for six months for patent or other proprietary issues, with an additional six months extension available. Once the patent and proprietary issues are resolved, choosing this option allows the student to make the dissertation available to the university community for the period chosen below, and then for it to be distributed via the Web beyond that time.
    - one year
    - three years\*
    - five years\*
- For those who have copyright concerns, dissemination options are a student decision within the guidelines of individual departments that may have requirements for dissemination. If a department has no guidelines for dissemination, then students are free to choose one of the options below. In general, those in the sciences and engineering will choose one year while students in the arts and humanities may choose longer. Choosing this option allows

the student to make the dissertation available to the university community for the period chosen below, and then for it to be distributed via the Web beyond that time.

- one year
- three years\*
- five years\*

\*Does not require dissertation adviser signature and approval.

## Public Access

Students, faculty, staff, and other interested parties are strongly encouraged to attend dissertation final defense sessions. Notices providing date, time, and location of such meetings must be distributed to all academic departments.

These sessions are educational and informative for graduate students and provide an opportunity for colleagues to observe the work of their peers with students. At the discretion of the Chair of the Committee, questions may be invited from the audience. That part of the session involving committee discussion leading to a vote on the acceptance of the work will be closed. Sessions may be recessed briefly to excuse visitors and the candidate before this stage begins.

## Graduate Programs

- ◇ Doctoral Programs
- ◇ Specialist Programs
- ◇ Master's in Fine Arts Programs
- ◇ Master's Programs
- ◇ Certificates Programs
- ◇ Nondegree Programs

### Doctoral Degree Programs

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## Biomedical Sciences

### PhD

#### PROGRAM DESCRIPTION

The Biomedical Sciences PhD program is an interdisciplinary program from the Burnett School of Biomedical Sciences in the College of Medicine. The five participating units include the Molecular Biology and Microbiology Department, Biology Department, Chemistry Department, Nanoscience and Technology Center and the Biomolecular Science Center. The program provides doctoral education and training combining biological and physical sciences. This training produces scientists capable of doing independent research while working as part of interdisciplinary teams to solve important problems in biomedical sciences.

#### CURRICULUM

The Biomedical Sciences PhD program requires a minimum of 72 credit hours beyond the bachelor's degree or a minimum of 42 credit hours beyond the master's degree, including 20 credit hours of core courses, 12 credit hours of electives, 15 credit hours of dissertation research, and a minimum of 25 credit hours in additional electives and doctoral research. Students with a master's degree may request that up to 30 credit hours of previous course work be accepted as degree requirements.

New students will take a two-semester introductory course, participate in laboratory rotations to identify a research area of interest, and take a sequence of required seminars.

#### Total Required Hours for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.

Programmatic deficiencies expected of applicants from diverse settings will be addressed early in the program by completion of appropriate course work. Students entering with a master's degree may request that up to 30 semester credit hours of previous course work be accepted as degree requirements with approval from the dissertation committee. Students may register for doctoral research until they have been admitted to candidacy, after which they must register for dissertation research.

New students will take a two-semester course that provides an introduction to the interdisciplinary area of biomedical sciences. In addition, a laboratory rotation will allow students to have a brief but intensive experience working with faculty in at least three different research laboratories to find a research area of interest for their dissertation. Finally, a sequence of required seminars will familiarize students with field-related literature and introduce them to the conceptual and technical frameworks in which they will work. All students receiving assistantships must enroll full time.

#### Core Courses—20 Credit Hours

- BSC 6432 Structure-Function-Relationships of Biomolecular Science I (5 credit hours)
- BSC 6433 Structure-Function-Relationships of Biomolecular Science II (5 credit hours)
- IDS 7692L Experiments in Biomolecular Sciences (lab ) (3 credit hours)
- IDS 7692L Experiments in Biomolecular Sciences (lab) (1 credit hour)
- IDS 7690 Frontiers in Biomolecular Sciences (four semesters, 1 credit hour each semester)
- BSC 6431 Practice of Biomolecular Science (2 credit hours)

#### Elective Courses—12 Credit Hours

Electives must be taken from the following list. Any electives not on this list must be approved by the Graduate Committee before being counted toward degree credit requirements.

- BSC 5418 Tissue Engineering (3 credit hours)

- BSC 6407C Laboratory Methods in Molecular Biology (4 credit hours)
- CAP 5510 Bioinformatics (3 credit hours)
- CHM 5305 Applied Biological Chemistry (3 credit hours)
- CHM 5450 Polymer Chemistry (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHS 6251 Applied Organic Synthesis (2 credit hours)
- CHS 6535 Forensic Analysis of Biological Materials (2 credit hours)
- CHS 6535L Forensic Analysis of Biological Materials (3 credit hours)
- CHS 6536 Forensic Analysis of DNA Data (2 credit hours)
- GEB 6516 Technology Commercialization (3 credit hours)
- IDS 5127 Foundations of Bio-Imaging Science (3 credit hours)
- MCB 5205 Infectious Processes (3 credit hours)
- MCB 5225 Molecular Biology of Disease (3 credit hours)
- MCB 5505 Molecular Virology (3 credit hours)
- MCB 5527 Genetic Engineering and Biotechnology (3 credit hours)
- MCB 5654 Applied Microbiology (3 credit hours)
- MCB 5722C Methods in Biotechnology (3 credit hours)
- MCB 5932 Current Topics in Molecular Biology (3 credit hours)
- MCB 6226 Molecular Diagnostics (3 credit hours)
- MCB 6417C Microbial Metabolism (3 credit hours)
- PCB 6528 ST: Plant Molecular Biology (3 credit hours)
- PCB 5025 Molecular and Cellular Pharmacology (3 credit hours)
- PCB 5107C Advanced Cell Biology (4 credit hours)
- PCB 5238 Immunobiology (3 credit hours)
- PCB 5239 Tumor Biology (3 credit hours)
- PCB 5256C Advanced Developmental Biology (4 credit hours)
- PCB 5275 Signal Transduction Mechanics (3 credit hours)
- PCB 5665C Human Genetics (4 credit hours)
- PCB 5677 Molecular Evolution (3 credit hours)
- PCB 6585C Advanced Genetics (4 credit hours)
- PCB 6596 Bioinformation and Genomics (3 credit hours)

- PCB 6595 Regulation of Gene Expression (3 credit hours)
- ZOO 5748C Clinical Neuroanatomy (3 credit hours)

## Cumulative/Qualifying Examinations

Cumulative examinations will determine if students should continue with their doctoral studies. Eight exams will be given by program faculty members during the second year. Each exam will consist of two questions set by faculty members. One will deal with data interpretation from literature and the other will require experiment designs to test a hypothesis. Performance will be evaluated by all program faculty members. A student must satisfactorily answer 10 cumulative questions out of 16 to be eligible to continue in the PhD program.

## Candidacy Examination

Candidacy will consist of writing and orally defending a proposal outlining a novel research idea (outside the research area of the thesis) to the advisory committee and program faculty. This 10-page proposal will be prepared following an NIH format written independently and must be approved by the advisory committee. After passing the candidacy examination, the student can register for dissertation hours.

## Dissertation Defense

The dissertation must consist of at least two manuscripts already published, accepted or ready for publication in a mainstream journal within the field. For manuscripts not yet peer reviewed, the dissertation committee will determine whether the manuscript meets the standards for publication in a mainstream journal. For more information, see the General Guidelines for Alternative Organization in the Thesis and Dissertation Manual of the College of Graduate Studies Thesis and Dissertation office.

Upon completion and approval of the doctoral dissertation by all designated faculty and university offices, the student will make a formal presentation of the research findings in seminar format to the dissertation committee and other university faculty and students. The candidate will answer questions and defend conclusions about the subject matter.

## ADMISSIONS

For information on general UCF graduate

admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants entering the program with regular status are expected to have completed course work required for a bachelor's degree in chemistry, cell biology, biochemistry, biophysics, genetics, molecular biology or microbiology.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Statement of research interest and purpose, including a summary of relevant work or research experience.
- Résumé.
- A personal or telephone interview.

Admission is based on an overall assessment of the qualifications submitted and the interview. All admissions to graduate status are competitive and based on availability of faculty for sponsoring research.

## CONTACT INFO

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## Business Administration PhD

- Accounting PhD
- Finance PhD
- Management PhD
- Marketing PhD

## PROGRAM DESCRIPTION

The objective of the doctoral program in Business Administration is to prepare students for academic careers in higher education and management careers within profit and nonprofit organizations. Success in the program is judged by the student's understanding of the issues and methodologies essential to the advancement of knowledge.

## CURRICULUM

### Total Hours Required for PhD—84-96 Credit Hours Minimum beyond the Bachelor's Degree; 54-66 Credit Hours Minimum beyond the Master's Degree.

Upon admission to the Business Administration doctoral program, the student will be assigned an advisory committee. With the approval of the advisory committee, the student will complete a program of study including the following requirements.

### General Preparation and Course Work

- MBA degree or equivalent—30 credit hours: Each track may specify different requirements for this category.
- Major—12-21 hours.
- Minor/Support Area—6-9 credit hours.
- Research Tools—12-15 credit hours: All doctoral students are required to take two applied statistics courses. Other research tool courses will be specified by the track.
- Teaching—3 credit hours: Each track will require some education related to teaching. It may take the form of classes, noncredit seminars, mentoring or a teaching requirement.
- Candidacy Examination: The student must successfully complete a comprehensive candidacy examination. This exam has written and oral parts, and covers the candidate's program of study. Students are admitted to candidacy after satisfying all general degree requirements, passing the comprehensive exam, and fulfilling the residency requirement.
- Dissertation—24 credit hours: The student must successfully defend a written dissertation proposal in an examination conducted by the student's advisory/dissertation



committee. The final defense of the successful dissertation will require an oral examination that concentrates on, but is not limited to, the student's dissertation defense.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Business Admin. PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

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*Business Administration PhD*

**Accounting PhD**

**TRACK DESCRIPTION**

The Accounting PhD program prepares students for careers in higher education and management.

**CURRICULUM**

**Total Hours Required for PhD—93 Credit Hours Minimum beyond the Bachelor's Degree; 63 Credit Hours Minimum beyond the Master's Degree.**

**Foundation Body of Knowledge—30 Credit Hours**

In the Accounting PhD track, the foundation body of knowledge may be satisfied with a master's degree in Accounting, Business Administration, Taxation or its equivalent from an Association to Advance Collegiate Schools of Business (AACSB) accredited school that includes certain accounting courses deemed essential by the Accounting PhD director. Alternatively, this requirement may be satisfied by courses approved by the School of Accounting's doctoral advisory committee.

**Accounting Major Concentration—21 Credit Hours Minimum**

**Required Courses—18 Credit Hours**

- ACG 7157 Seminar in Archival Research in Accounting (3 credit hours)
- ACG 7399 Seminar in Behavioral Accounting Research (3 credit hours)
- ACG 7826 Seminar in the Social and Organizational Context of Accounting (3 credit hours)
- ACG 7885 Research Foundations in Accounting (3 credit hours)
- ACG 7887 Accounting Research Forum (6 credit hours) (Workshop, 1 credit hour per semester)

**Elective Courses—3 Credit Hours**

Choose one of the following:

- ACG 7888 Seminar in Critical Accounting and AIS (3 credit hours)
- ACG 7917 Advanced Research Methods in Accounting and Accounting Information Systems Research (3 credit hours)
- Other accounting electives as they are developed for the program

**Minor/Support Area—6 Credit Hours Minimum**

Students must select a minimum of six credit hours in a unified area approved by the student's doctoral study advisory committee. Each student's program of study is individually tailored to accommodate interests whenever possible. This course work may be developed from offerings in the following areas with the advice and consent of the respective departments and the advisory committee:

- Management Information Systems

- Marketing
- Economics
- Political Science
- Psychology
- Gender Studies
- Management
- Sociology
- Environmental Studies
- Communication
- Philosophy
- Public Affairs

### **Research Tools—12 Credit Hours**

The research tools requirement is intended to ensure a thorough exposure to research methods. All candidates are expected to demonstrate knowledge of statistical methods as well as usage of statistical packages, including design, analysis, and interpretation of results.

- ECO 7423 Applied Models I (3 credit hours, required course)
- Additional 9 credit hours of research tools courses approved by the student's advisory committee. Examples of courses that will satisfy this requirement include GEB 7910, STA 5205, PSY 6216, PSY 6217, PSY 6308, ECO 6424, ECO 7425 and ISM 7029.

### **Teaching Requirement—3 Credit Hours Minimum**

The requirements for the teaching component of the degree will be developed with the doctoral program director based on the student's experience. Normally, this requirement will be satisfied through teaching a minimum of three credit hours of class instruction under the direct supervision of a faculty member. As appropriate, students will also be required to attend teaching development workshops and seminars.

### **Candidacy Examination and Dissertation—24 Credit Hours**

Students must complete a comprehensive candidacy examination that includes written and oral portions. Students must defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the dissertation will also require an oral examination.

### **Total Hours Required for PhD—84-96 Credit Hours Minimum beyond the Bachelor's Degree; 54-66 Credit Hours Minimum beyond the Master's Degree.**

Upon admission to the Business Administration doctoral program, the student will be assigned an advisory committee. With the approval of the advisory committee, the student will complete a program of study including the following requirements.

### **General Preparation and Course Work**

- MBA degree or equivalent—30 credit hours: Each track may specify different requirements for this category.
- Major—12-21 hours.
- Minor/Support Area—6-9 credit hours.
- Research Tools—12-15 credit hours: All doctoral students are required to take two applied statistics courses. Other research tool courses will be specified by the track.
- Teaching—3 credit hours: Each track will require some education related to teaching. It may take the form of classes, noncredit seminars, mentoring or a teaching requirement.
- Candidacy Examination: The student must successfully complete a comprehensive candidacy examination. This exam has written and oral parts, and covers the candidate's program of study. Students are admitted to candidacy after satisfying all general degree requirements, passing the comprehensive exam, and fulfilling the residency requirement.
- Dissertation—24 credit hours: The student must successfully defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the successful dissertation will require an oral examination that concentrates on, but is not limited to, the student's dissertation defense.

### **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, three letters of recommendation, a goal statement, and a résumé; applicants from countries where English is not the official language or

applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Goal statement.
- Résumé.
- Other: Previous publications and/or other relevant supporting documentation.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Admission decisions are made based on faculty recommendations from the appropriate department or school. Admissions will generally be made only for fall semester, every other year; however, exceptions may be made in some cases. All interested students should contact the program director for their track for information about applying to this program. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Accounting PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Business Administration 437A

## *Business Administration PhD*

# Finance PhD

## TRACK DESCRIPTION

The Finance PhD program prepares students for careers in higher education and management.

## CURRICULUM

**Total Hours Required for PhD—93  
 Credit Hours Minimum beyond the  
 Bachelor's Degree; 63 Credit Hours  
 Minimum beyond the Master's  
 Degree.**

Required courses for all students are indicated with an asterisk in the lists below. Specific courses from the foundation body of knowledge category are determined based on a student's background in consultation with the doctoral program coordinator. Required course work prior to beginning study includes successful completion of at least a two-course sequence of 6 credit hours of calculus and previous course work in economics, finance and statistics.

## Foundation Body of Knowledge—30 Credit Hours

In the Finance PhD track, the foundation body of knowledge includes (a) the finance, accounting, statistics and economics common body of knowledge in a MBA degree or its equivalent and (b) graduate courses in financial management, investments, financial institutions and international finance.

## Finance Major Concentration—18 Credit Hours

- FIN 7935\* Finance Research Forum (up to 6 credit hours)
- FIN 7808\* Introduction to the Theory of Finance (3 credit hours)
- FIN 7807\* Corporate Finance Theory (3 credit hours)
- FIN 7816\* Investment Theory (3 credit hours)
- FIN 7930\* Seminar in Market Microstructure (3 credit hours)
- FIN 7811\* Seminar in Financial Markets and Institutions (3 credit hours)

**Minor/Support Area—6 Credit Hours**

- ECO 6118\* Microeconomic Theory I (3 credit hours)
- ECO 7116\* Microeconomic Theory II (3 credit hours)

**Research Tools—12 Credit Hours**

- ECO 6403\* Mathematical Economics (3 credit hours)
- ECO 6424\* Econometrics I (3 credit hours)
- ECO 7426\* Econometrics II (3 credit hours)
- ECO 6408 Games and Economic Behavior (3 credit hours)
- ECO 6453 Experimental Economics (3 credit hours)
- ECP 7086 Advanced Topics in Economic Theory (3 credit hours)
- ECO 7428 Time Series (3 credit hours)
- ACG 7157 Seminar in Archival Research in Accounting (3 credit hours)

\* Required courses for all students.

**Teaching Requirement—3 Credit Hours Minimum**

The requirements for the teaching component of the degree will be developed with the doctoral graduate program director based on the student's experience. Normally, this requirement will be satisfied through teaching a minimum of three credit hours of class instruction under the direct supervision of a faculty member. As appropriate, students will also be required to attend teaching development workshops and seminars.

**Candidacy Examination and Dissertation—24 Credit Hours**

Students must complete a comprehensive candidacy examination that includes written and oral portions.

Students must defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the dissertation will also require an oral examination.

**Total Hours Required for PhD—84-96 Credit Hours Minimum beyond the Bachelor's Degree; 54-66 Credit Hours Minimum beyond the Master's Degree.**

Upon admission to the Business Administration doctoral program, the student will be assigned an advisory committee. With the approval of the advisory committee, the student will complete a program of study including the following requirements.

**General Preparation and Course Work**

- MBA degree or equivalent—30 credit hours: Each track may specify different requirements for this category.
- Major—12-21 hours.
- Minor/Support Area—6-9 credit hours.
- Research Tools—12-15 credit hours: All doctoral students are required to take two applied statistics courses. Other research tool courses will be specified by the track.
- Teaching—3 credit hours: Each track will require some education related to teaching. It may take the form of classes, noncredit seminars, mentoring or a teaching requirement.
- Candidacy Examination: The student must successfully complete a comprehensive candidacy examination. This exam has written and oral parts, and covers the candidate's program of study. Students are admitted to candidacy after satisfying all general degree requirements, passing the comprehensive exam, and fulfilling the residency requirement.
- Dissertation—24 credit hours: The student must successfully defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the successful dissertation will require an oral examination that concentrates on, but is not limited to, the student's dissertation defense.

**ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, three letters of recommendation, a goal statement, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Goal statement.
- Résumé.
- Other: Previous publications and/or other relevant supporting documentation.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Admission decisions are made based on faculty recommendations from the appropriate department or school. Admissions will generally be made only for fall semester, every other year; however, exceptions may be made in some cases. All interested students should contact the program director for their track for information about applying to this program. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Finance PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Department of Finance  
 Business Administration 411

## *Business Administration PhD*

# Management PhD

## TRACK DESCRIPTION

The objective of the Management track in the Business Administration PhD program is to prepare students for academic careers at major research universities.

## CURRICULUM

**Total Hours Required for PhD—93 Credit Hours Minimum beyond the Bachelor’s Degree; 63 Credit Hours Minimum beyond the Master’s Degree.**

The general expectation for the Management program follow. The program is tailored to the needs of the individual student and may require work that is not included in the following descriptions.

**Foundation Body of Knowledge—30 Credit Hours**

The foundation body of knowledge includes the common body of knowledge in an MBA degree or its equivalent from an AACSB-accredited or comparable school. Alternatively, this requirement may be satisfied by courses deemed essential by the Management track program coordinator.

**Management Major Concentration—18 Credit Hours**

- MAN 7275 Organizational Behavior (3 credit hours)
- MAN 7207 Organization Theory (3 credit hours)
- MAN 7777 Corporate-level Strategic Management (3 credit hours)
- MAN 7916 Seminar(s) in Management Research (9 credit hours)

**Minor/Support Area—6 Credit Hours Minimum**

Students may select a minimum of six credit hours, typically within a unified area, approved by the student’s adviser and the program coordinator. Each student’s program of study is individually

tailored to accommodate student interests, and often emphasizes additional training in research methodology necessary to produce high quality scholarly research.

### **Research Tools—12 Credit Hours**

The research tools requirement is intended to ensure a thorough exposure to research methods. All candidates are expected to demonstrate knowledge of statistical methods as well as usage of statistical packages. This includes design, analysis, and interpretation of results. An additional six credit hours of research courses must be approved by the student's advisory committee and the program coordinator.

- PSY 6216 Advanced Research Methodology I (3 credit hours)
- PSY 6217 Advanced Research Methodology II (3 credit hours)

### **Candidacy Examination and Dissertation—24 Credit Hours**

**Students must complete a comprehensive candidacy examination that includes written and oral portions.**

Students must defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the dissertation will also require an oral examination.

### **Teaching Requirement—3 Credit Hours Minimum**

The requirements for the teaching component of the degree will be developed with the doctoral graduate program director based on the student's experience. Normally, this requirement will be satisfied through teaching a minimum of three credit hours of class instruction under the direct supervision of a faculty member. As appropriate, students will also be required to attend teaching development workshops and seminars.

**Total Hours Required for PhD—84-96 Credit Hours Minimum beyond the Bachelor's Degree; 54-66 Credit Hours Minimum beyond the Master's Degree.**

Upon admission to the Business Administration doctoral program, the student will be assigned an advisory committee. With the approval of the advisory committee, the student will complete a program of study including the following requirements.

### **General Preparation and Course Work**

- MBA degree or equivalent—30 credit hours: Each track may specify different requirements for this category.
- Major—12-21 hours.
- Minor/Support Area—6-9 credit hours.
- Research Tools—12-15 credit hours: All doctoral students are required to take two applied statistics courses. Other research tool courses will be specified by the track.
- Teaching—3 credit hours: Each track will require some education related to teaching. It may take the form of classes, noncredit seminars, mentoring or a teaching requirement.
- Candidacy Examination: The student must successfully complete a comprehensive candidacy examination. This exam has written and oral parts, and covers the candidate's program of study. Students are admitted to candidacy after satisfying all general degree requirements, passing the comprehensive exam, and fulfilling the residency requirement.
- Dissertation—24 credit hours: The student must successfully defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the successful dissertation will require an oral examination that concentrates on, but is not limited to, the student's dissertation defense.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, three letters of recommendation, a goal statement, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Goal statement.
- Résumé.
- Other: Previous publications and/or other relevant supporting documentation.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Admission decisions are made based on faculty recommendations from the appropriate department or school. Admissions will generally be made only for fall semester, every other year; however, exceptions may be made in some cases. All interested students should contact the program director for their track for information about applying to this program. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Management PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Department of Management  
 Business Administration 346

## *Business Administration PhD*

# Marketing PhD

## TRACK DESCRIPTION

The Marketing PhD program prepares students for careers in higher education and management.

## CURRICULUM

**Total Hours Required for PhD—93  
 Credit Hours Minimum beyond the Bachelor's Degree; minimum of 63  
 Credit Hours Minimum beyond the Master's Degree.**

**Foundation Body of Knowledge—30  
 Credit Hours**

In the Marketing PhD track, this requirement may be satisfied with a master's degree in marketing, business administration or its equivalent from an AACSB-accredited school. Alternatively, this requirement may be satisfied by courses deemed essential by the department's doctoral advisory committee.

**Marketing Major Concentration—18  
 Credit Hours**

- MAR 7575 Seminar in Consumer Behavior (3 credit hours)
- MAR 7638 Seminar in Marketing Theory, Scaling, and Measurement (3 credit hours)
- MAR 7666 Seminar in Marketing Models (3 credit hours)
- MAR 7807 Seminar in Marketing Strategy (3 credit hours)
- MAR 7919 Special Topics: Comprehensive Research Project (6 credit hours)

**Minor/Support Area—9 Credit Hours  
 Minimum**

A minimum of nine hours of course work is required in a minor/support area. This course work should be from a unified area and will be developed with the advice and consent of the department's doctoral advisory committee.

**Research Tools—12 Credit Hours**

The department's doctoral advisory committee will

determine the additional research tools courses.

- MAR 7626 Multivariate Analysis for Business Research (3 credit hours)
- Courses approved by student's advisory committee (9 credit hours)

### **Teaching Requirement—3 Credit Hours Minimum**

The requirements for the teaching component of the doctoral degree will be developed with the doctoral graduate program coordinator based on the student's experience. Normally, this requirement will be satisfied through teaching a minimum of three credit hours of class instruction under the direct supervision of a faculty member. As appropriate, students will also be required to attend teaching development workshops and seminars.

### **Candidacy Examination and Dissertation—24 Credit Hours**

Students must complete a comprehensive candidacy examination that includes written and oral portions.

Students must defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the dissertation will also require an oral examination.

### **Total Hours Required for PhD—84-96 Credit Hours Minimum beyond the Bachelor's Degree; 54-66 Credit Hours Minimum beyond the Master's Degree.**

Upon admission to the Business Administration doctoral program, the student will be assigned an advisory committee. With the approval of the advisory committee, the student will complete a program of study including the following requirements.

### **General Preparation and Course Work**

- MBA degree or equivalent—30 credit hours: Each track may specify different requirements for this category.
- Major—12-21 hours.
- Minor/Support Area—6-9 credit hours.
- Research Tools—12-15 credit hours: All doctoral students are required to take two

applied statistics courses. Other research tool courses will be specified by the track.

- Teaching—3 credit hours: Each track will require some education related to teaching. It may take the form of classes, noncredit seminars, mentoring or a teaching requirement.
- Candidacy Examination: The student must successfully complete a comprehensive candidacy examination. This exam has written and oral parts, and covers the candidate's program of study. Students are admitted to candidacy after satisfying all general degree requirements, passing the comprehensive exam, and fulfilling the residency requirement.
- Dissertation—24 credit hours: The student must successfully defend a written dissertation proposal in an oral examination conducted by the student's advisory/dissertation committee. The final defense of the successful dissertation will require an oral examination that concentrates on, but is not limited to, the student's dissertation defense.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, three letters of recommendation, a goal statement, and a résumé; applicants from countries where English is not the official language or students with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Goal statement.
- Résumé.
- Other: Previous publications and/or other relevant supporting documentation.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.



Admission decisions are made based on faculty recommendations from the appropriate department or school. Admissions will generally be made only for fall semester, every other year; however, exceptions may be made in some cases. All interested students should contact the program director for their track for information about applying to this program. The college strongly encourages applications from minority and diverse populations. Race, national origin, and gender are not used in the evaluation of students for admission into graduate and professional programs.

Marketing PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Department of Marketing  
 Business Administration II 309B

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# Chemistry PhD

## PROGRAM DESCRIPTION

The PhD program in Chemistry provides a doctoral education in three technical focal areas: Materials Chemistry, Environmental Chemistry and Forensic Science, drawing upon the strengths of the Department of Chemistry and other units, such as the College of Optics and Photonics and Advanced Materials Processing and Analysis Center. These areas meet the ever-pressing demand for the development of new materials and the increasing urgency of addressing crucial environmental and security problems. The curriculum has been formulated in collaboration with industrial scientists and represents a response to current and projected competencies needed by the industry. The purpose

of the program is to develop scientists and educators capable of conducting research to solve important problems in contemporary fields of the chemical sciences while preparing a highly skilled work force to ensure the technological/economic health and competitiveness in central Florida.

## CURRICULUM

The Chemistry PhD program requires 72 credit hours beyond the bachelor's degree with a minimum 15 credit hours of electives and directed research in the chosen sub-discipline, an original research project and dissertation presentation and a maximum of 27 credit hours transferred from an approved MS degree program.

Students are required to take 21 credit hours of formal courses (excluding seminar, research or independent/directed study). This includes four core courses and three electives, two of which must be taken within the Department of Chemistry. Six credit hours of directed research are also required; additional courses may be specified by the student's research adviser.

## Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 45 Credit Hours Minimum beyond the Master's Degree.

One of the primary means of education and training in the PhD program is achieved through successful completion of an original research project, close mentorship by their research adviser and the presentation and defense of the PhD dissertation. This intense research experience provides the education and training necessary for the student to substantiate his/her expertise and develop the skills necessary to become an independent professional.

By the second semester, students will choose a dissertation adviser and establish a program of study. Students will take a two-semester seminar, presenting a seminar to the department during the second semester. A third seminar credit hour will be taken in preparation for the dissertation defense. During this semester, the student will present a seminar to the department on their thesis research. The research adviser and graduate program director will establish an advisory committee for each student. Students must maintain a 3.0 GPA or higher.

### Required Core Courses—12 Credit Hours

- CHM 6710 Applied Analytical Chemistry (3 credit hours)
- CHM 6440 Kinetics and Catalysis (3 credit hours)
- CHS 6251 Applied Organic Synthesis (3 credit hours)
- CHS 6240 Chemical Thermodynamics (3 credit hours)

### Elective Courses—15 Credit Hours in Chosen Concentration

Students need only three elective courses and 6 credit hours of directed study. They may choose three courses from the departmental offerings or two courses from the departmental offerings and one from outside of the department. Directed research will always be within the department.

#### Materials Chemistry Concentration

Choose three courses from the following courses in addition to 6 hours of directed research.

- CHM 5225 Advanced Organic Chemistry (3 credit hours)
- CHM 5580 Advanced Physical Chemistry (3 credit hours)
- CHS 6260 Chemical Unit Operations and Separations (3 credit hours)
- CHM 6711 Chemistry of Materials (3 credit hours)
- CHM 6620 Solid State Inorganic Chemistry (3 credit hours)
- CHM 5450 Polymer Chemistry (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHM 5715C Optical Materials Processing and Characterization Techniques (3 credit hours)
- CHM 6449 Photochemistry (3 credit hours)
- CHM 5305 Applied Biological Chemistry (3 credit hours)
- CHM 6938 Special Topics (3 credit hours)
- CHM 5235 Applied Molecular Spectroscopy (3 credit hours)
- CHM 6131 Advanced Instrumental Analysis (3 credit hours)
- CHM 7919 Directed Research in Materials Chemistry (6 credit hours)

Choose one course from outside the Chemistry Department from the following list of courses.

- OSE 5050 Fundamentals and Applications of Photonics (3 credit hours)
- EMA 5504 Modern Characterization of Materials (3 credit hours)
- EMA 6518 Transmission Electron Microscopy (3 credit hours)
- EMA 5108 Surface Science (3 credit hours)
- EMA 6129 Solidification and Microstructure Evolution (3 credit hours)
- EMA 6130 Phase Transformations in Metals and Alloys (3 credit hours)
- EMA 6136 Diffusion in Solids (3 credit hours)
- EMA 6516 X-Ray Diffraction and Crystallography (3 credit hours)
- IDS 7691 Structure-Function-Relationships of Biomolecules I (5 credit hours)
- PHY 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)
- MCB 5527 Genetic Engineering and Biotechnology (3 credit hours)
- BSC 5408L Advanced Biology Laboratory Techniques (3 credit hours)

#### Environmental Chemistry Concentration

Choose three courses from the following courses in addition to 6 hours of directed research.

- CHS 6260 Chemical Unit Operations and Separations (3 credit hours)
- CHS 6613 Current Topics in Environmental Chemistry (3 credit hours)
- CHM 5235 Applied Molecular Spectroscopy (3 credit hours)
- CHM 5580 Advanced Physical Chemistry (3 credit hours)
- CHM 6131 Advanced Instrumental Analysis (3 credit hours)
- CHM 6449 Photochemistry (3 credit hours)
- CHM 6938 Special Topics (3 credit hours)
- CHM 7919 Directed Research in Environmental Chemistry (6 credit hours)

Choose one course from outside the Chemistry Department from the following list.

- ENV 5410 Drinking Water Treatment (3 credit hours)
- ENV 6046 Membrane Mass Transfer (3 credit hours)
- ENV 6055 Fate and Transport of Subsurface Contaminants (3 credit hours)
- ENV 6058 Particle Processes in Aquatic Systems (3 credit hours)
- ENV 6106 Theory and Practice of Atmospheric Dispersion Modeling (3 credit hours)

- ENV 6126 Design of Air Pollution Controls (3 credit hours)
- ENV 6336 Site Remediation and Hazardous Waste Treatment (3 credit hours)
- ENV 6519 Aquatic Chemical Processes (3 credit hours)
- ENV 6558 Industrial Waste Treatment (3 credit hours)

### **Forensic Science Concentration**

Choose three courses from the following courses in addition to 6 hours of directed research.

- CHS 6548 Explosives and Accelerants Analysis (3 credit hours)
- CHS 6XXX Forensic Micro-analytical Techniques (3 credit hours)
- CHM 6131 Advanced Instrumental Analysis (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHM 6938 Special Topics (3 credit hours)
- CHS 6535 Forensic Molecular Biology (2 credit hours)
- CHS 6535L Forensic Analysis of Biological Materials (3 credit hours)
- CHS 6536 Population Genetics and Genetic Data Analysis (3 credit hours)
- CHM 7919 Directed Research in Forensic Science (6 credit hours)

### **Required Seminar—3 Credit Hours**

- CHM 6936 Seminar (1 credit hour, to be taken three times)

### **Dissertation—15 Credit Hours**

#### **Minimum**

- CHM 7980 Doctoral Dissertation (15 credit hours)

Within three months before defending the dissertation, the student will present a dissertation research seminar to the Department of Chemistry, registering for one credit hour of seminar.

### **Qualifying Examinations**

Students will be expected to satisfy qualifying (proficiency) requirements (analytical, inorganic, organic and physical chemistry) during the first year by taking exams in each of these four areas. Additional course work may be required if one or more of the qualifying exams are not satisfied. These exams may be waived if the entering student possesses a MS degree in the Chemical Sciences.

Satisfaction of this requirement will help ensure that all students are adequately prepared for the core courses. If a student does not satisfy the proficiency exam requirements within the first year, they may be subject to dismissal from the program.

### **Candidacy Examination**

By the end of the second year, students will take the PhD candidacy oral examination. The candidacy examination consists of writing and orally defending an original research proposal to the student's program faculty advisory committee as well as a presentation of their preliminary dissertation research accomplishments and plans. The research proposal will focus on a topic not directly related to the student's dissertation research and must be approved by the adviser and advisory committee.

### **Dissertation Defense**

The final requirement for the PhD degree is completion of a satisfactory written dissertation of the student's research, along with successful presentation and defense of the dissertation to the advisory committee, including one doctorate-holding non-program faculty member.

The grounding in scientific research methodology provided by the dissertation requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional laboratories where they work. In either case, a member of the UCF Chemistry Department faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the dissertation. The student will present his/her dissertation for examination by a committee consisting of five members including the research adviser. One of the committee members will be from outside the Chemistry department. The committee has to be approved by the Graduate Coordinator of the Chemistry program. The dissertation must be judged worthy of publication by the review committee and may not be submitted for examination until so deemed. For nonresident students, the dissertation adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Students entering the program should possess a BS degree in the Chemical Sciences or a closely related field.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendations.
- A statement of purpose.
- Résumé.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Chemistry PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Chemistry 117

# Civil Engineering PhD

## PROGRAM DESCRIPTION

The PhD in Civil Engineering reflects the very broad nature of the field, which encompasses the design, construction and enhancement of the infrastructure of society. The educational program includes course work in structural analysis and design, geotechnical engineering and foundations, transportation planning and operations, traffic engineering and water resources engineering.

Faculty research interests include geotechnical studies of subsurface conditions, soil testing "superpave" mix design, intelligent transportation systems, traffic safety, structural dynamics, nonlinear structural analysis and software development, reinforced concrete, hydraulic modeling, coastal ocean modeling, stormwater management and watershed management.

## CURRICULUM

The PhD in Civil Engineering is a research-oriented degree that requires some coursework combined with intensive research. The program requires a minimum 42 credit hours beyond the master's degree and 72 credit hours beyond the bachelor's degree; 18 credit hours must be dissertation credits and a minimum of 12 credit hours of formal classroom work at UCF is required. At the discretion of the adviser, students will take at least an additional 12 credit hours, including directed research, special topics, directed studies and additional formal courses. A program of study must be developed listing the specific courses to be taken as part of the degree requirements with an advisory committee and receive departmental approval at the beginning of the PhD program at which time transfer credit will be evaluated on a course-by-course basis.

**Total Required Hours for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.**

### **Required Courses—12 Credit Hours Minimum**

- To be taken from approved Civil Engineering formal course work.

### **Elective Courses—42 Credit Hours Minimum**

- To be approved by a faculty adviser.

### **Dissertation—18 Credit Hours Minimum**

- XXX 7980 (18 credit hours minimum)

### **Examinations**

The student must pass three examinations.

#### **Qualifying Examination**

The first is the PhD Qualifying Examination in one of the departmental disciplines. This examination must be taken within the first year of study beyond the master's degree.

#### **Candidacy Examination**

The student must pass a Candidacy Examination, normally taken near the end of the course work. It consists of an oral presentation of a research proposal, along with possibly a written portion. A copy of the written examination will be kept as part of the student's official record.

#### **Dissertation Defense Examination**

The Dissertation Defense Examination is an oral examination taken as defense of the written dissertation.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission. The deadlines for the pre-application form can be found on the Prospective Student Page on the College of**

Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's or bachelor's degree in Civil Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to face-to-face or telephone interviews before accepting applicants into their research program.

<b>Civil Engineering PhD</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## **CONTACT INFO**

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 Department of Civil and Environmental  
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 Engineering II 211

# Computer Engineering PhD

## PROGRAM DESCRIPTION

The doctoral program in Computer Engineering is primarily intended for students with a master's degree in Computer Engineering or a closely related discipline wishing to pursue a career in research or academia. Specializations include digital systems, computer architecture and VLSI design, software engineering, intelligent systems, computer networks and simulation systems.

Research interests of the Computer Engineering faculty include digital systems, computer architecture, software engineering, artificial intelligence, expert systems, modeling and simulation, computer networking and ubiquitous computing, computer vision and very large-scale integration (VLSI) systems.

## CURRICULUM

The Computer Engineering PhD degree requires a minimum of 72 credit hours beyond the bachelor's degree. Of these 72 hours, a minimum of 36 credit hours must be regular classroom course work and a minimum of 15 credit hours up to a maximum of 24 credit hours of dissertation hours can be credited toward the degree. No more than 12 credit hours of Independent Study are allowed as a part of the 36 hours of regular classroom course work. The remaining hours can be a combination of classroom course work and/or pre-candidacy doctoral research.

### **Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.**

Students admitted with an earned master's degree from a regionally accredited institution or recognized foreign institution may be eligible to have up to 30 credit hours of their doctoral program waived without a course-by-course review of completed course work. The student's doctoral adviser in conjunction with the doctoral program director will determine the number of hours to be waived. Hours will be credited such that classroom course work will be credited against the required

doctoral classroom course work with the exception that only six hours of Independent Study will be allowed and credited against the 12 credit hours of Independent Study allowed in the doctoral program. Thesis hours can also be credited as pre-candidacy doctoral research hours.

The program of study must be developed in consultation with an adviser within the first 9 credit hours of course work, and this requirement is strictly enforced by the program. The program of study must meet all the university requirements specified in the graduate catalog and must also meet departmental approval.

### **Regular Course Work—36 Credit Hours**

- No more than 12 hours of independent study and no directed research.
- Suggested courses listed below.

### **Electives—12-21 Credit Hours**

- May include directed research hours.
- Suggested courses listed below.

### **Suggested Courses for Doctoral Program**

The School of Electrical Engineering and Computer Science (Computer Engineering Program) supports a number of technical research areas in which a PhD student is expected to do research. These technical areas are (in alphabetical order): Computer Networks and Computer Security (CNCS), Computer Systems and VLSI Design (CS/VLSI), Intelligent Systems and Machine Learning (ISML), and Software Systems and Algorithms (SSA).

In each one of these areas there is a suggested list of courses recommended for PhD students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a PhD student is planning to take during his/her PhD studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### **Suggested Courses for Computer Networks and Computer Security (CNCS)**

- CDA 5110 Parallel Processing (3 credit hours)

- CDA 5530 Performance Models of Computers and Networks (3 credit hours)
- CDA 6520 Advanced Computer Networks (3 credit hours)
- CDA 6XXX Research in Computer Network and Systems (3 credit hours)
- CNT 5008 Computer Communication Network Architecture (3 credit hours)
- CNT 6519 Wireless Security and Forensics (3 credit hours)
- CNT 6707 Computer Network Design and Distributed Processing (3 credit hours)
- COP 5537 Network Optimization (3 credit hours)
- COP 5611 Operating Systems (3 credit hours)
- CAP 6135 Malware and Software Vulnerability Analysis (3 credit hours)
- COP 6525 Distributive Processing of Digital Evidence (3 credit hours)
- EEL 5780 Wireless Networks (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6785 Computer Network Design (3 credit hours)
- EEL 6788 Advanced Topics in Wireless Networks (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)
- EEL 6897 Software Development for Real-Time Engineering Systems (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Computer Networks and Computer Security area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Networks and Computer Security committee.

#### **Suggested Courses for Computer Systems and VLSI (CS/VLSI)**

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- CDA 5110 Parallel Architecture and Algorithms (3 credit hours)
- CDA 5215 Architecture and Design of VLSI (3 credit hours)
- CDA 6107 Parallel Computer Architecture (3 credit hours)
- CDA 6211 VLSI Algorithms and Architecture (3 credit hours)
- COT 6415 Complexity of Parallel Computation (3 credit hours)

- EEL 5390 Full Custom-VLSI Design (3 credit hours)
- EEL 5704 Computer Aided Logical Design (3 credit hours)
- EEL 5722C Field Programmable Gate Array (FPGA) Design (3 credit hours)
- EEL 5762 Performance Analysis of Computer and Communication Systems (3 credit hours)
- EEL 6327 Design of Video Coded Systems (3 credit hours)
- ECM 6308 Current Topics in Parallel Processing (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Computer Systems and VLSI area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Systems and VLSI committee.

#### **Suggested Courses for Intelligent Systems and Machine Learning (ISML)**

- CAP 5055 AI for Game Programming (3 credit hours)
- CAP 5512 Evolutionary Computation (3 credit hours)
- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- CAP 6616 Neuro-Evolution and Generative Developmental Systems (3 credit hours)
- CAP 6637 Activity and Plan Recognition (3 credit hours)
- CAP 6640 Computer Understanding of Natural Language (3 credit hours)
- CAP 6671 Intelligent Systems: Robots, Agents and Humans (3 credit hours)
- CAP 6675 Complex Adaptive Systems (3 credit hours)
- CAP 6676 Knowledge Representation (3 credit hours)
- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 6769 Parallel Knowledge Processing Systems (3 credit hours)
- EEL 6875 Autonomous Agents (3 credit hours)
- EEL 6876 Current Topics in Artificial Intelligence (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Intelligent Systems and Machine Learning area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Intelligent Systems and Machine Learning committee.

### **Suggested Courses for Software Systems and Algorithms (SSA)**

- CAP 6XXX Biological Databases and Bioinformatics Tools (3 credit hours)
- CAP 6XXX Algorithms in Computational Biology (3 credit hours)
- CGS 5131 Computer Forensics I (3 credit hours)
- CGS 5132 Computer Forensics II (3 credit hours)
- CDA 5532 Network Generic-Computing (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)
- CEN 5016 Software Engineering (3 credit hours)
- COP 5021 Program Analysis (3 credit hours)
- COP 6730 Transaction Processing (3 credit hours)
- COP 6731 Advanced Database Systems (3 credit hours)
- COP 6XXX Formal Specification of Software Systems (3 credit hours)
- COT 5310 Formal Languages and Automata (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- COT 6410 Computational Complexity (3 credit hours)
- COT 6600 Quantum Computing (3 credit hours)
- COT 6602 Introduction to Quantum Information Theory (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Software Systems and Algorithms area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Software Systems and Algorithms committee.

### **Dissertation—15-24 Credit Hours Minimum**

- CPE 7980 Dissertation (15 credit hours)

### **Qualifying Review**

The Qualifying Review relies on annual appraisals of the student's progress conducted by the student's research/academic adviser and advisory committee, once formed. The student's appraisal template that the adviser completes will assess the student's academic performance (course performance) and research performance (student's performance at the research adviser's lab and co-authorship of peer-reviewed publications).

On an annual basis, and based on the completed student's appraisal template, as well as additional student documentation (up to the discretion of the EECS Graduate Committee), the EECS Graduate Committee will rank the student's performance as "Above Expectation," "At Expectation," or "Below Expectation" toward the completion of the PhD degree. The evaluation by the EECS Graduate Committee will have detailed justification for the student's ranking, and the ranking and its associated justification will be provided to the student and the student's adviser.

Students will be notified (no earlier than the end of the first year of their studies and no later than the end of the second year of their PhD studies) whether they have passed the Qualifying Review or not, that is, whether they are eligible to continue in their PhD studies. A student who passes the Qualifying Review will continue with the completion of the rest of the PhD program's milestones (i.e., Candidacy Examination, Dissertation Proposal Examination, and Dissertation Defense). A student who fails the Qualifying Review will be dismissed from the program and will be given the opportunity to finish their Master's degree (if applicable).

A student who in the EECS Graduate Committee's opinion fails the Qualifying Review will be given the opportunity to request a reevaluation of his or her case by the committee. The decision of the EECS Graduate Committee, as a result of this reevaluation, is final.

Annual appraisals will end after the student has passed the Qualifying Review.



## Candidacy Examination

After passing qualifiers, students are required to successfully complete the candidacy examination in order to demonstrate readiness for preliminary research in a chosen field of study. This exam is administered by the student's dissertation advisory committee and is comprised of written and oral portions. Preparedness for taking the candidacy examination requires the acceptance of a professional paper by a peer-reviewed conference or journal that is deemed acceptable by the student's advisory committee. The student must fulfill candidacy requirements within the first 24 months of graduate work. Candidacy is normally taken near the completion of required course work and must be passed before registering for doctoral dissertation hours (CPE 7980). Continuous enrollment in at least 3 hours of doctoral dissertation hours is required once a student starts taking 7980-level credits.

After passing the candidacy examination, the student will write a dissertation proposal and present it to the dissertation advisory committee for approval. The proposal must include a description of the research performed to date and the research planned to be completed for the dissertation.

## Dissertation Committee

Doctoral students must have a Dissertation Advisory Committee prior to the Candidacy Examination. The Committee will consist of a minimum of four members. At least three members must be qualified regular faculty members from the student's department (or college if a college-wide program) at UCF, one of whom must serve as the chair of the committee. One member must be from either outside the School of EECS or outside the university.

The committee chair must be a member of the department graduate faculty approved to direct dissertations. Joint faculty members serve as department-faculty committee members. Adjunct faculty and off-campus experts may serve as the external person in the committee. Program areas may further specify additional committee membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee or appoint a co-adviser.

In unusual cases, two professors may chair the committee jointly with approval from the program

director. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs. All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's or bachelor's degree in Computer Engineering or a closely related discipline.
- Résumé
- Statement of educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Computer Engineering PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

Computer Engineering PhD	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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# Computer Science PhD

## PROGRAM DESCRIPTION

The Computer Science PhD program produces professionals trained at the highest possible academic level in the theory and practice of Computer Science in order to meet current and projected market demands for Computer Science experts. Students graduate with proven abilities in research and instruction and have expertise suitable for positions in industry, academia and government.

Students in the program receive a broad background in the areas of programming systems and languages, computer architecture and computer science theory while specializing in a research area. Research interests of the computer science faculty include affective computing, applied perception, bioinformatics, computational biology, computational geometry, computer and network security, computer architecture, computer forensics, computer graphics, computer networks, computer vision, cryptography, data compression, database management systems, data mining, design and analysis of algorithms, evolutionary computation, genetic algorithms, graph theory, hardware/software co-design, image processing, machine learning, mixed and virtual reality, mobile computing, modeling and simulation, multimedia systems, natural language processing, neural networks, parallel and distributed processing, performance

evaluation, programming languages, quantum computing, semantic web, software agents, software engineering and VLSI systems.

## CURRICULUM

The Computer Science PhD program requires a minimum of 72 credit hours beyond the bachelor's degree and a minimum of 36 credit hours beyond the master's degree. A plan of study for each student must be filed within the first two weeks of the student's second semester in the program. This plan must satisfy the following:

- A minimum of 72 credit hours, including CDA 5106, COT 5405, COT 6410.
- Grades must be a "C" (2.0) or better with at most 6 credit hours having grades below "B" (3.0) and an overall grade point average of 3.0 or better.
- No courses below the 5000-level, with the exception of CGS 5132 and no 5000-level CGS prefix course work.
- No more than 12 credit hours of independent study.
- Five 6000- or 7000-level courses (15 credits) with grades of "B" (3.0) or better taught by EECS faculty. None of these may be independent study or dissertation and two of these courses may be directed research courses for which letter grades (not S/U) are assigned.
- The three required courses with grades of "B" (3.0) or above attained in each.
- Six additional computer science graduate credits to make the total of all non-independent study/non-dissertation/non-directed research courses for a total of at least 36 credits.
- A minimum of 15 credit hours and a maximum of 24 credit hours of PhD dissertation (CAP, CDA, CEN, COP or COT 7980).

### Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 36 Credit Hours Minimum beyond the Master's Degree.

### Required Courses—9 Credit Hours Minimum

- CDA 5106- (3 credit hours)
- COT 5405 - (3 credit hours)
- COT 6410 - (3 credit hours)

### **Electives—36 Credit Hours Minimum**

Of this 15 credit hours must be at the 6000 and 7000 level in Computer Science.

### **Cognate Courses—6 Credit Hours Minimum**

Courses taken outside the program, and approved by the program director

### **Dissertation—15 Credit Hours Minimum**

- xxx 7980 - 15 Credit Hours Minimum

### **Qualifying Review**

The Qualifying Review relies on annual appraisals of the student's progress conducted by the student's research/academic adviser. The student's appraisal template that the adviser completes will assess the student's academic performance (course performance) and research performance (student's performance at the research adviser's lab and co-authorship of peer-reviewed publications).

On an annual basis, and based on the completed student's appraisal template, as well as additional student documentation (up to the discretion of the EECS Graduate Committee), the EECS Graduate Committee will rank the student's performance as "Above Expectation," "At Expectation," or "Below Expectation" toward the completion of the PhD degree. The evaluation by the EECS Graduate Committee will have detailed justification for the student's ranking, and the ranking and its associated justification will be provided to the student and the student's adviser.

Students will be notified (no earlier than the end of the first year of their studies and no later than the end of the second year of their PhD studies) whether they have passed the Qualifying Review or not, that is, whether they are eligible to continue in their PhD studies. A student who passes the Qualifying Review will continue with the completion of the rest of the PhD program's milestones (i.e., Candidacy Examination, Dissertation Proposal Examination, and Dissertation Defense). A student who fails the Qualifying Review will be dismissed from the program and will be given the opportunity to finish their Master's degree (if applicable).

A student who in the EECS Graduate Committee's opinion fails the Qualifying Review will be given

the opportunity to request a reevaluation of his or her case by the committee. The decision of the EECS Graduate Committee, as a result of this reevaluation, is final.

Annual appraisals will end after the student has passed the Qualifying Review.

### **Dissertation Committee**

The Dean, through the Chairs and Directors, is responsible for committee formation, additions and deletions. The doctoral committee must consist of a minimum of four members; three must be faculty members from within EECS and one must be at large from outside the EECS faculty. Joint faculty members may serve as school-faculty committee members. A member of the adjunct faculty or an off-campus expert may serve as the outside-the-college member. The Computer Science Graduate Committee may specify additional membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.

In unusual cases, two professors may co-chair the committee with the approval from the school director. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not although they may serve as co-chairs.

All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

### **Candidacy Examination**

After passing qualifiers, students are required to successfully complete the candidacy examination to demonstrate readiness for preliminary research in a chosen field of study. This exam is administered by the student's dissertation advisory committee and is comprised of written and oral portions. Preparedness for taking the candidacy examination requires the acceptance of a professional paper by a peer-reviewed conference or journal that is deemed acceptable to the student's advisory committee. Candidacy requirements must be satisfied within the first 24 months of graduate work. Candidacy is normally taken near the completion of required course work and must be passed before registering for doctoral dissertation hours (XXX 7980).

Continuous enrollment in at least 3 hours of doctoral dissertation hours is required once a student starts taking 7980 credits. Students must be registered for a minimum of 9 credit hours for at least two consecutive years to meet residency requirements.

After passing the candidacy examination, the student will write a dissertation proposal and present it orally to the dissertation advisory committee for approval. The proposal must include a description of the research performed to date and research plans.

## Time Limitation

Students have seven years from the beginning of regular graduate status in the PhD program to complete all requirements for the degree, although most students finish within 4 to 5 years.

## Dissertation and Oral Defense

Students must write a dissertation on their research that describes a significant original contribution to the field of computer science. The oral defense of the dissertation is reviewed by the research committee. The dissertation must be approved by the dissertation adviser and committee, the school director or designee and the dean of the college or designee. Format approval from the Thesis and Dissertation Editor and final approval of satisfaction of degree requirements by the College of Graduate Studies is required.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must

provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Résumé.
- Statement of educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Outstanding students with a bachelor's degree are encouraged to apply directly into the doctoral program. Admission to the PhD program is formalized by the university upon the recommendation of the Computer Science Graduate Committee.

An undergraduate degree in Computer Science is desirable but not required. Applicants without a strong undergraduate background in Computer Science must demonstrate an understanding of the material covered in the following upper-division undergraduate courses:

- CDA 4150 Computer Architecture
- COP 4020 Programming Languages I
- COP 4600 Operating Systems
- COT 4210 Discrete Computational Structures

The student may choose to demonstrate his/her knowledge of these courses by scoring well on the Subject (Advanced) GRE in Computer Science. It is estimated that more than 85 percent of this GRE deals directly with the material covered in these courses.

Computer Science PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Professor  
 Program Director  
 gradprog@cs.ucf.edu  
 Telephone 407-823-2779  
 Department of Computer Science  
 HEC 204

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## Conservation Biology PhD

- Applied Conservation Biology PhD
- Ecology and Organismal Biology PhD

**PROGRAM DESCRIPTION**

The Conservation Biology PhD program provides an interface between traditional biological sciences and the areas of economics, law, urban and rural planning, politics, communication, philosophy and environmental engineering. The purpose of this training is to produce scientists capable of doing independent research and the ability to work within the broader area of environmental politics, law and economics to communicate issues of conservation biology to policy makers, the general public and industry.

Students will choose one of two specializations: Applied Conservation Biology or Ecology and Organismal Biology. The Applied Conservation Biology Track is intended to provide the academic background necessary to begin work in industry, nongovernmental organizations or government in a leadership role applying cutting-edge principles to problem solving in conservation biology. The Ecology and Organismal Biology Track embraces applied and basic research concerning ecological questions to address current concerns in the area of conservation biology. Students taking either track would be prepared to pursue an academic career.

**CURRICULUM**

The Conservation Biology PhD program requires 72 credit hours beyond the bachelor's degree or 42 credit hours beyond the master's degree including 12 credit hours of required core courses, a minimum of 20 credit hours of elective courses, a minimum of 24 hours of dissertation research and the balance

of required credit hours in additional electives and directed research. All students will take core courses that will provide an introduction to the science of conservation biology.

By the completion of nine semester hours of course work, the student will be required to establish a program of study in conjunction with their dissertation adviser and the advisory committee. Students are required to complete a minimum of 20 hours of electives in consultation with their advisory committee. In addition to these selected electives, the dissertation committee may require the candidate to take any graduate course taught at UCF if deemed appropriate for the candidate's area of emphasis. Students entering with a master's degree may request up to 30 semester credit hours of previous work be accepted toward the requirements for this degree with approval from the dissertation committee. Students may register for dissertation research only after passing the candidacy exam.

**Total Hours Required for PhD—72  
 Credit Hours Minimum beyond the  
 Bachelor's Degree; 42 Credit Hours  
 Minimum beyond the Master's  
 Degree.**

**Sample Program of Study****Required Core Courses—12 Credit  
Hours Minimum**

- PCB 7047 Conservation Biology (4 credit hours)
- PCB 7052 Seminar in Conservation Biology (2 credit hours)
- PCB 7090 Advanced Research Communication (2 credit hours)
- PCB 7049C Conservation Biology Practice (4 credit hours)

**Electives—20 Credit Hours**

These regular graduate level courses could be from Biology, or other programs, and are selected in consultation with the advisor and the dissertation committee. The goal is to tailor the program of study to the individual students needs while maximizing exposure to a variety of disciplines, including, amongst others, economics, engineering, chemistry or sociology.

**Directed Research—16 Credit Hours**

Additional electives or in the Applied Conservation Biology track, professional internship hours can be substituted for directed research.

## Dissertation—24 Credit Hours

### Minimum

- PCB 7980 (24 credit hours)

### Course Schedule

#### YEAR 1

##### Fall

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\*\* (1 credit hour)
- PCB 7090 Advanced Research Communication I\* (1 credit hour)
- Elective (3 credit hours)

##### Spring

- PCB 7049C Conservation Biology Practice (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\*\* (1 credit hour)
- PCB 7091 Advanced Research Communications II\* (1 credit hour)
- Elective (3 credit hours)

##### Summer

- Written Qualifying Exam
- Directed Research (6 credit hours)

#### YEAR 2

##### Fall

- Elective (4 credit hours)
- Elective (3 credit hours)
- Directed Research and/or Elective (2 credit hours)

##### Spring

- Elective (4 credit hours)
- Directed Research and/or Elective (5 credit hours)
- Oral Candidacy Exam

##### Summer

- Directed Research and/or Elective (6 credit hours)

#### YEAR 3

##### Fall

- PCB 7980 Dissertation (3 credit hours)

##### Spring

- PCB 7980 Dissertation (3 credit hours)

##### Summer

- PCB 7980 Dissertation (3 credit hours)

#### YEAR 4

##### Fall

- PCB 7980 Dissertation (3 credit hours)

##### Spring

- PCB 7980 Dissertation (3 credit hours)

##### Summer

- PCB 7980 Dissertation (3 credit hours)

#### YEAR 5

##### Fall

- PCB 7980 Dissertation (3 credit hours)

##### Spring

- PCB 7980 Dissertation (3 credit hours)

##### Summer

- PCB 7980 Dissertation and Defense (3 credit hours)

\* Students who have already completed an MS may substitute Directed Research for Research Communication.

\*\*PCB 7052 Seminar in Conservation Biology is taken twice at 1 credit hour.

## Advisory Committee

The Advisory Committee shall consist of a minimum of four members, including the dissertation adviser, with at least three members coming from the Biology Department. At least one member will be from a department other than Biology or from outside the university. The chair, or co-chair, must be a member of the program graduate faculty of the Department of Biology.

## Enrollment Requirements

Students are required to register for 9 credit hours in fall and spring and 6 credit hours in summer

before their candidacy exam. After being admitted to candidacy, minimum enrollment is 3 credit hours of dissertation research each semester.

### **Qualifying Examination**

The written qualifying examination should be completed as early as the fall semester following the first academic year, but no later than the end of the fall semester of the second year. This examination measures the student's proficiency in all subject matter related to the chosen field. These questions are either directly related to the dissertation research proposal or designed to examine general knowledge and reasoning within the field.

The candidate will meet with their advisory committee at least one month prior to the examination to discuss expectations. Committee members must clearly articulate in writing the general areas that may be examined. Any student failing the examination must repeat the examination within six calendar months of the date of the first examination and this requires a majority vote by committee members. A second failed attempt will result in dismissal from the program.

### **Candidacy Examination**

Each student will be required to generate, organize and orally defend a written proposal outlining their dissertation research to their dissertation advisory committee no later than 12 months after passing the Qualifying Examination. The oral Candidacy Examination will cover all areas within the scope of the student's doctoral program and requires that the student demonstrate knowledge of the theory, literature and research methodologies relevant to the proposed area of research as well as demonstrate an understanding of how their work relates to the field of biology as a whole. After passing the candidacy examination the student will be deemed as having been admitted to candidacy and can register for dissertation hours. Once a student is admitted to candidacy, the focus will be on dissertation research. For most students, the research and writing of the dissertation will take two to three years after advancing to candidacy. During this time, students should remain in close contact with the dissertation adviser and advisory committee and annual progress reports must be filed with the Graduate Program Director.

### **Candidacy Examination Proposal**

A written dissertation proposal, already approved by the adviser, must be submitted to each committee member no later than two weeks prior to the Candidacy Examination. Typically, the proposal will be in the format described below. However, in cases where this format is not appropriate, an alternative format may be used with the approval of the dissertation adviser. The proposal should be approximately 10 to 15 pages in length not including references, single-spaced and typed in 12-point font with one-inch margins on all sides. The use of figures and tables is encouraged. With rare exceptions it is expected that dissertation research will be hypothesis-driven.

- **Specific Aims:** Describe concisely the problem(s) to be addressed and the specific goals of the dissertation research as they relate to the problem(s), including clear statements of hypotheses to be tested.
- **Background and Significance:** Review background literature relevant to the dissertation topic, indicating clearly where gaps in knowledge exist. Justify the need for the research by explaining its anticipated significance. Conclude by linking gaps in current knowledge to the proposed specific aims.
- **Methodology:** Outline carefully the study design (observations, experiments, models, statistical analysis, etc.) related to, and the methodology to be used for, each specific aim. Methodologies should be explained in sufficient detail to allow committee members to assess the validity of its use in the study. Potential outcomes and alternative approaches should be discussed.
- **Literature Cited:** References should be indicated in the main body of the proposal wherever appropriate and should follow the format of a peer-reviewed journal in a field of study appropriate to your research. This section can be as long as necessary.

### **Examination**

At least one week prior to the examination, an abstract describing the proposed research will be posted in the Biological Sciences Building and circulated by e-mail among faculty and graduate students. The candidate will present the research proposal in a forum open to all faculty, students and visitors. The oral presentation should be

approximately 45-50 minutes in length to be followed by a public question-and-answer period. Presentation of preliminary data is neither required nor expected, but should be provided if available and relevant. With the exception of the advisory committee and candidate, all faculty, students and visitors will leave at the conclusion of the public question-and-answer period. The committee will continue the exam in closed session with further questioning. Questions can be directed to any matter relevant to the research proposal and areas of weakness previously identified in the written (qualifying) exam. A majority vote is required to pass the examination; however, no more than one negative vote is permitted. The majority must include the dissertation adviser. Any student failing the examination must repeat the examination within six calendar months of the date of the first examination. A second failed attempt will result in dismissal from the program.

## Dissertation Defense

The dissertation is expected to represent an original and significant contribution to the discipline. Upon completion and approval of the doctoral dissertation by all appropriate faculty and university offices, the student will make a formal presentation of the research findings in seminar format to the dissertation committee and other university faculty and students who may wish to attend.

The dissertation should be in a format appropriate for publication and should be "tightened" to a readiness for submittal by use of appendixes for nonessential information. The major role of the student's advisory committee is to offer guidance on study design and interpretation of results. A polished draft must be delivered to the advisory committee for review after the student and dissertation adviser have agreed upon editorial changes; this should occur well before the anticipated date of the final defense. Committee members have the right to reject documents that fail to meet these guidelines. Committee members should be given at least two weeks to review the draft before the student attempts to schedule the final defense. The final defense is to be scheduled only after the advisory committee agrees that the dissertation is ready for defense. Committee members should return the corrected dissertation to the student two weeks after receipt and the candidate should check with committee members to ensure they have the time to review the document. If the student delivers the

final draft to the committee one month prior to the proposed defense date, that would allow two weeks before the scheduled defense date for the student to make recommended changes.

At least one week prior to the defense, an abstract describing the research conducted and conclusions reached will be posted in the Biological Sciences Building and circulated by e-mail among faculty and graduate students. The candidate will present the research in a forum open to all faculty, students, and visitors. The oral presentation should be approximately 45-50 minutes in length to be followed by a question-and-answer period. In the presentation the candidate should focus on background information, describe the research performed, and draw attention to the significance of the conclusions reached. With the exception of the committee and candidate, all faculty, students, and visitors will leave at the conclusion of the question-and-answer period. The committee will continue the defense and the candidate will answer questions about the subject matter presented and defend the conclusions drawn. The committee will ask questions of the process used and assess the candidate's level of competency with the research topic. A majority vote is required to pass the examination; however, no more than one negative vote is permitted. The majority must include the dissertation adviser.

## Student Orientation

An orientation for all incoming students will be scheduled one week prior to each fall semester. The orientation will include tours of the program facilities, a session on registration, university policies and procedures, and expectations of doctoral study. Further, Environmental Health and Safety will present a program on topics such as laboratory safety, chemical and fire safety, biohazard training, and radioisotope handling. Expectations for Graduate Teaching Assistants (GTA) and Graduate Research Assistants (GRA) will be fully covered. In addition, students will be required to participate in the program for GTAs offered by the UCF Faculty Teaching and Learning Center and the College of Sciences.

Graduate students enrolled in the Conservation Biology PhD program are expected to engage in independent learning throughout their graduate career. Research towards, and ultimate completion, of the doctoral dissertation is the primary example of independent learning in which all doctoral



students participate. Independent learning is also a key component of the core course in Conservation Biology and Advanced Research Communication where emphasis is placed on the development of analytical skills and critical thinking. In addition, depending upon their career goals, other experiences such as directed readings, additional research projects, or internships may be undertaken by the students.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Conservation Biology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

Students applying for summer or spring admission will be considered on an ad hoc basis.

### CONTACT INFO

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 Professor  
 Program Director  
 gworthy@mail.ucf.edu  
 Telephone 407-823-4701  
 Department of Biology  
 BIO 301

Conservation Biology PhD

# Applied Conservation Biology PhD

### TRACK DESCRIPTION

The Applied Conservation Biology PhD program

prepares students for independent research and roles within industry, nongovernmental organizations or government sectors combining traditional biological sciences with economics, law, urban/rural planning, politics, communication, philosophy and environmental engineering.

### CURRICULUM

**Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor’s Degree; 42 Credit Hours Minimum beyond the Master’s Degree.**

**Required Core Courses—12 Credit Hours Minimum**

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\* (1 credit hours)
- PCB 7052 Seminar in Conservation Biology\* (1 credit hours)
- PCB 7090 Advanced Research Communication I (1 credit hours)
- PCB 7049C Conservation Biology Practice (4 credit hours)
- PCB 7091 Advanced Research Communications II (1 credit hour)

\*Course is taken twice at 1 credit hour.

**Electives—20 Credit Hours Minimum**

These regular graduate level courses could be from Biology, or other departments, and are selected in consultation with the advisor and the dissertation committee. The goal is to tailor the program of study to the individual students needs while maximizing exposure to a variety of disciplines including, amongst others, policy, economics, engineering, chemistry or sociology.

**Directed Research (or Additional Electives)—16 Credit Hours Minimum**

- Professional internship hours can be substituted for directed research.

**Dissertation—24 Credit Hours Minimum**

- PCB 7980 Dissertation (24 credit hours)

## Course Schedule and Sample Program of Study

### YEAR 1

#### Fall

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology (1 credit hour)
- PCB 7090 Advanced Research Communication I\* (1 credit hour)
- Elective (3 credit hours)

#### Spring

- PCB 7049C Conservation Biology Practice (4 credit hours)
- PCB 7052 Seminar in Conservation Biology (1 credit hour)
- PCB 7091 Advanced Research Communications II\* (1 credit hour)
- Elective (3 credit hours)

#### Summer

- Written Qualifying Exam
- Directed Research (6 credit hours)

### YEAR 2

#### Fall

- Elective (4 credit hours)
- Elective (3 credit hours)
- Directed Research and/or Elective (2 credit hours)

#### Spring

- Elective (4 credit hours)
- Directed Research and/or Elective (5 credit hours)
- Oral Candidacy Exam

#### Summer

- Directed Research and/or Elective (6 credit hours)

### YEAR 3

#### Fall

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Spring

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Summer

- PCB 7980 Dissertation\*\* (3 credit hours)

### YEAR 4

#### Fall

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Spring

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Summer

- PCB 7980 Dissertation\*\* (3 credit hours)

### YEAR 5

#### Fall

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Spring

- PCB 7980 Dissertation\*\* (3 credit hours)

#### Summer

- PCB 7980 Dissertation and Defense\*\* (3 credit hours)

\* Students who have already completed an MS may substitute Directed Research for Research Communication.

\*\* Professional internship hours can be substituted for Directed Research.

### Advisory Committee

The Advisory Committee shall consist of a minimum of four members, including the dissertation adviser, with at least three members coming from the Biology Department. At least one member will be from a department other than Biology or from outside the university. The chair, or co-chair, must be a member of the program faculty of the Department of Biology.

### Enrollment Requirements

Students are required to register for 9 credit hours in fall and spring and 6 credit hours in summer before their candidacy exam. After being admitted to candidacy, minimum enrollment is 3 credit hours of dissertation research each semester.

### Qualifying Examination

The written qualifying examination should be completed as early as the fall semester following the first academic year, but no later than the end of the fall semester of the second year. This examination measures the student's proficiency in all subject

matter related to the chosen field. These questions are either directed related to the dissertation research proposal or designed to examine general knowledge and reasoning within the field.

The candidate will meet with their advisory committee at least one month prior to the examination to discuss expectations. Committee members must clearly articulate in writing the general areas that may be examined. Any student failing the examination must repeat the examination within six calendar months of the date of the first examination and requires a majority vote by committee members. A second failed attempt will result in dismissal from the program.

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The use of figures and tables is encouraged. With rare exceptions it is expected that dissertation research will be hypothesis-driven.

- **Specific Aims:** Describe concisely the problem(s) to be addressed and the specific goals of the dissertation research as they relate to the problem(s), including clear statements of hypotheses to be tested.
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to pass the examination; however, no more than one negative vote is permitted. The majority must include the dissertation adviser. Any student failing the examination must repeat the examination within six calendar months of the date of the first examination. A second failed attempt will result in dismissal from the program.

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the presentation the candidate should focus on background information, describe the research performed, and draw attention to the significance of the conclusions reached. With the exception of the committee and candidate, all faculty, students, and visitors will leave at the conclusion of the question-and-answer period. The committee will continue the defense and the candidate will answer questions about the subject matter presented and defend the conclusions drawn. The committee will ask questions of the process used and assess the candidate’s level of competency with the research topic. A majority vote is required to pass the examination; however, no more than one negative vote is permitted. The majority must include the dissertation adviser.

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## Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor’s Degree; 42 Credit Hours Minimum beyond the Master’s Degree.

### Sample Program of Study

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- PCB 7052 Seminar in Conservation Biology (2 credit hours)
- PCB 7090 Advanced Research Communication (2 credit hours)
- PCB 7049C Conservation Biology Practice (4 credit hours)

**Electives—20 Credit Hours**

These regular graduate level courses could be from Biology, or other programs, and are selected in consultation with the advisor and the dissertation committee. The goal is to tailor the program of study to the individual students needs while maximizing exposure to a variety of disciplines, including, amongst others, economics, engineering, chemistry or sociology.

**Directed Research—16 Credit Hours**

Additional electives or in the Applied Conservation Biology track, professional internship hours can be substituted for directed research.

**Dissertation—24 Credit Hours****Minimum**

- PCB 7980 (24 credit hours)

**Course Schedule****YEAR 1****Fall**

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\*\* (1 credit hour)
- PCB 7090 Advanced Research Communication I\* (1 credit hour)
- Elective (3 credit hours)

**Spring**

- PCB 7049C Conservation Biology Practice (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\*\* (1 credit hour)
- PCB 7091 Advanced Research Communications II\* (1 credit hour)
- Elective (3 credit hours)

**Summer**

- Written Qualifying Exam
- Directed Research (6 credit hours)

**YEAR 2****Fall**

- Elective (4 credit hours)
- Elective (3 credit hours)
- Directed Research and/or Elective (2 credit hours)

**Spring**

- Elective (4 credit hours)
- Directed Research and/or Elective (5 credit hours)
- Oral Candidacy Exam

**Summer**

- Directed Research and/or Elective (6 credit hours)

**YEAR 3****Fall**

- PCB 7980 Dissertation (3 credit hours)

**Spring**

- PCB 7980 Dissertation (3 credit hours)

**Summer**

- PCB 7980 Dissertation (3 credit hours)

**YEAR 4****Fall**

- PCB 7980 Dissertation (3 credit hours)

**Spring**

- PCB 7980 Dissertation (3 credit hours)

**Summer**

- PCB 7980 Dissertation (3 credit hours)

**YEAR 5****Fall**

- PCB 7980 Dissertation (3 credit hours)

**Spring**

- PCB 7980 Dissertation (3 credit hours)

**Summer**

- PCB 7980 Dissertation and Defense (3 credit hours)

\* Students who have already completed an MS may substitute Directed Research for Research Communication.

\*\*PCB 7052 Seminar in Conservation Biology is taken twice at 1 credit hour.

**Advisory Committee**

The Advisory Committee shall consist of a minimum of four members, including the dissertation adviser, with at least three members

coming from the Biology Department. At least one member will be from a department other than Biology or from outside the university. The chair, or co-chair, must be a member of the program graduate faculty of the Department of Biology.

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Students are required to register for 9 credit hours in fall and spring and 6 credit hours in summer before their candidacy exam. After being admitted to candidacy, minimum enrollment is 3 credit hours of dissertation research each semester.

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The written qualifying examination should be completed as early as the fall semester following the first academic year, but no later than the end of the fall semester of the second year. This examination measures the student's proficiency in all subject matter related to the chosen field. These questions are either directly related to the dissertation research proposal or designed to examine general knowledge and reasoning within the field.

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- **Specific Aims:** Describe concisely the problem(s) to be addressed and the specific goals of the dissertation research as they relate to the problem(s), including clear statements of hypotheses to be tested.
- **Background and Significance:** Review background literature relevant to the dissertation topic, indicating clearly where gaps in knowledge exist. Justify the need for the research by explaining its anticipated significance. Conclude by linking gaps in current knowledge to the proposed specific aims.
- **Methodology:** Outline carefully the study design (observations, experiments, models, statistical analysis, etc.) related to, and the methodology to be used for, each specific aim. Methodologies should be explained in sufficient detail to allow committee members to assess the validity of its use in the study. Potential outcomes and alternative approaches should be discussed.
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## Dissertation Defense

The dissertation is expected to represent an original and significant contribution to the discipline. Upon completion and approval of the doctoral dissertation by all appropriate faculty and university offices, the student will make a formal presentation of the research findings in seminar format to the dissertation committee and other university faculty and students who may wish to attend.

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offered by the UCF Faculty Teaching and Learning Center and the College of Sciences.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, a résumé, and a statement of research interest.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Résumé.
- Statement of research interest and purpose, including a summary of relevant work or research experience.

Students entering the graduate program with regular status are normally expected to have completed course work generally required for a bachelor's degree in biology.

Admission is based on an overall assessment of the qualifications submitted and the interview. All admissions to graduate status are competitive and based on availability of faculty for sponsoring research.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, the identification of a dissertation adviser, and the applicant's potential for completing the degree.

Applied Conservation Biology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

Students applying for summer or spring admission will be considered on an ad hoc basis.

## CONTACT INFO

Graham A. J. Worthy PhD  
 Professor  
 Program Director  
 gworthy@mail.ucf.edu  
 Telephone 407-823-4701  
 Department of Biology  
 BIO 301

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### *Conservation Biology PhD*

# Ecology and Organismal Biology PhD

## TRACK DESCRIPTION

The Ecology and Organismal Biology PhD program prepares students for independent research and roles within industry, nongovernmental organizations or government sectors combining traditional biological sciences with economics, law, urban/rural planning, politics, communication, philosophy and environmental engineering.

## CURRICULUM

**Total Hours Required for PhD—72  
 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.**

### **Required Core Courses—12 Credit Hours Minimum**

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology\* (1 credit hours)
- PCB 7052 Seminar in Conservation Biology\* (1 credit hours)
- PCB 7090 Advanced Research Communication I (1 credit hours)
- PCB 7049C Conservation Biology Practice (4 credit hours)



- PCB 7091 Advanced Research Communications II (1 credit hour)

\*Course is taken twice at 1 credit hour.

### **Electives—20 Credit Hours Minimum**

These regular graduate level courses could be from Biology, or other departments, and are selected in consultation with the advisor and the dissertation committee. The goal is to tailor the program of study to the individual students needs while maximizing exposure to a variety of disciplines including, amongst others, policy, economics, engineering, chemistry or sociology.

### **Directed Research (or Additional Electives)—16 Credit Hours Minimum**

- Professional internship hours can be substituted for directed research.

### **Dissertation—24 credit Hours Minimum**

- PCB 7980 Dissertation (24 credit hours)

## **Course Schedule and Sample Program of Study**

### **YEAR 1**

#### **Fall**

- PCB 7047 Conservation Biology I (4 credit hours)
- PCB 7052 Seminar in Conservation Biology (1 credit hour)
- PCB 7090 Advanced Research Communication I\* (1 credit hour)
- Elective (3 credit hours)

#### **Spring**

- PCB 7049C Conservation Biology Practice (4 credit hours)
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#### **Summer**

- Written Qualifying Exam
- Directed Research (6 credit hours)

### **YEAR 2**

#### **Fall**

- Elective (4 credit hours)

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- Directed Research and/or Elective (2 credit hours)

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- Elective (4 credit hours)
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#### **Summer**

- Directed Research and/or Elective (6 credit hours)

### **YEAR 3**

#### **Fall**

- PCB 7980 Dissertation (3 credit hours)

#### **Spring**

- PCB 7980 Dissertation (3 credit hours)

#### **Summer**

- PCB 7980 Dissertation (3 credit hours)

### **YEAR 4**

#### **Fall**

- PCB 7980 Dissertation (3 credit hours)

#### **Spring**

- PCB 7980 Dissertation (3 credit hours)

#### **Summer**

- PCB 7980 Dissertation (3 credit hours)

### **YEAR 5**

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- PCB 7980 Dissertation (3 credit hours)

#### **Spring**

- PCB 7980 Dissertation (3 credit hours)

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\* Students who have already completed an MS may substitute Directed Research for Research Communication.

## **Advisory Committee**

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dissertation adviser, with at least three members coming from the Biology Department. At least one member will be from a department other than Biology or from outside the university. The chair, or co-chair, must be a member of the program faculty of the Department of Biology.

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- PCB 7980 Dissertation (3 credit hours)

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An orientation for all incoming students will be scheduled one week prior to each fall semester. The orientation will include tours of the program facilities, a session on registration, university policies and procedures, and expectations of doctoral study. Further, Environmental Health and Safety will present a program on topics such as laboratory safety, chemical and fire safety, biohazard training, and radioisotope handling. Expectations for Graduate Teaching Assistants (GTA) and Graduate Research Assistants (GRA) will be fully covered. In addition, students will be required to participate in the program for GTAs offered by the UCF Faculty Teaching and Learning Center and the College of Sciences.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, a résumé, and a statement of research interest.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Résumé.
- Statement of research interest and purpose, including a summary of relevant work or research experience.

Students entering the graduate program with regular status are normally expected to have completed course work generally required for a bachelor's degree in biology.

Admission is based on an overall assessment of the qualifications submitted and the interview. All

admissions to graduate status are competitive and based on availability of faculty for sponsoring research.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, the identification of a dissertation adviser, and the applicant's potential for completing the degree.

Ecology and Organismal Biology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

Students applying for summer or spring admission will be considered on an ad hoc basis.

## CONTACT INFO

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 Professor  
 Program Director  
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 Department of Biology  
 BIO 301

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# Economics PhD

## PROGRAM DESCRIPTION

The Economics PhD program prepares students for professional careers in academia, business, and government. The program focuses on Environmental and Natural Resource (ENR) Economics and Behavioral and Experimental (BE) Economics. It equips students with theoretical, conceptual and quantitative skills to research a broad range of ENR and BE problems in a thoughtful and rigorous manner. This is achieved through a core curriculum of microeconomics,

macroeconomics and econometrics, in addition to courses in the field specializations in either ENR or BE Economics, or both.

## CURRICULUM

The Economics PhD program requires a minimum of 72 credit hours beyond the bachelor's degree or 42 credit hours beyond the master's degree. It requires 27 credit hours of core courses, 9 credit hours of courses based on ENR Economics and 6 credit hours of courses in BE Economics, up to 12 credit hours of electives within the department, up to 9 credit hours of non-economics electives (with approval of the Graduate Program Director), and 18 credit hours of dissertation.

### Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.

The Economics PhD program emphasizes ENR and BE economics. The curriculum offers the opportunity for students to tailor their program of study to their interests within these areas.

#### Core Courses—27 Credit Hours

- ECO 6403 Mathematical Economics (3 credit hours)
- ECO 6118 Microeconomic Theory I (3 credit hours)
- ECO 6206 Macroeconomic Theory I (3 credit hours)
- ECO 6424 Econometrics I (3 credit hours)
- ECO 7116 Microeconomic Theory II (3 credit hours)
- ECO 7205 Macroeconomic Theory II (3 credit hours)
- ECO 7426 Econometrics II (3 credit hours)
- ECP 7086 Advanced Topics in Economic Theory (3 credit hours)
- ECP 7307 Research Seminar (3 credit hours)

#### ENR Economics Courses—9 Credit Hours

- ECP 6309 Survey of Environmental and Natural Resource Economics (3 credit hours)
- ECP 7306 Environmental Economics (3 credit hours)
- ECP 7311 Natural Resource Economics (3 credit hours)

#### BE Economics Courses—6 Credit Hours

- ECO 6403 Games and Economic Behavior (3 credit hours)
- ECO 6453 Experimental Economics (3 credit hours)

#### Economics Electives Courses—up to 12 Credit Hours

- ECO 6505 Public Economics (3 credit hours)
- ECO 6705 International Economics (3 credit hours)
- ECO 7428 Time Series (3 credit hours)
- ECP 6408 Industrial Organization (3 credit hours)
- ECS 6015 Economic Development (3 credit hours)

#### Interdisciplinary Electives—up to 9 Credit Hours

Up to nine credit hours of approved non-economics electives may be completed from disciplines such as finance, marketing, mathematics, statistics, computer science and environmental engineering.

#### Dissertation—18 Credit Hours

The student must successfully defend a written dissertation to demonstrate the student's ability to conduct independent research and apply the tools of economic analysis.

### Typical Plan of Study for the PhD in Economics

#### YEAR 1

##### Fall Semester

- ECO 6403 Mathematical Economics (3 credit hours)
- ECO 6118 Microeconomic Theory I (3 credit hours)
- ECO 6206 Macroeconomic Theory I (3 credit hours)

##### Spring Semester

- ECO 6424 Econometrics I (3 credit hours)
- ECO 7116 Microeconomic Theory II (3 credit hours)
- ECO 7205 Macroeconomic Theory II (3 credit hours)



**YEAR 2****Fall Semester**

- ECO 7426 Econometrics II (3 credit hours)
- ECP 6309 Survey of Environmental and Natural Resource Economics (3 credit hours)
- Economics elective course (3 credit hours)

**Spring Semester**

- ECP 7086 Advanced Topics in Economic Theory (3 credit hours)
- ECP 7306 Environmental Economics (3 credit hours)
- Economics elective course (3 credit hours)

**YEAR 3****Fall Semester**

- ECP 7311 Natural Resource Economics (3 credit hours)
- Economics elective course (3 credit hours)
- Elective course (3 credit hours)

**Spring Semester**

- Economics elective course (3 credit hours)
- ECP 7307 Research Seminar (3 credit hours)
- Elective course (3 credit hours)

**YEAR 4****Fall and Spring Semesters**

- ECO 7980 Doctoral Dissertation (9 credit hours each semester)

**Qualifying Examination**

At the end of the first year, the student must pass the qualifying examination in microeconomic theory and macroeconomic theory to assess their readiness to advance to the next stage of the doctoral program.

**Candidacy Examination**

The Candidacy Examination is required upon completion of course work. The student must pass the Candidacy Examination administered by a Dissertation Advisory Committee to demonstrate his/her mastery of ENR or BE economics.

**Dissertation Proposal Examination**

The student must pass the Dissertation Proposal oral examination administered by a Dissertation Advisory Committee.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- A goal statement.
- A résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Admission decisions are made on the recommendation of the Graduate Program Committee in the Department of Economics. All interested students should contact the Graduate Program Director for information about applying to this program.

Economics PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

**CONTACT INFO**

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 Program Director  
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 Department of Biology  
 BIO 301

# Education EdD

## PROGRAM DESCRIPTION

The Doctor of Education EdD program is designed for experienced practicing educators and practitioners who wish to gain advanced skills in:

- Evaluating the effectiveness of educational and clinical programs and identifying impediments to program improvement;
- Analyzing and synthesizing educational and clinical research and scholarship to identify research-based practices;
- Developing and designing effective educational and clinical practices and materials.

The Doctor of Education program culminates with a major project and the dissertation in the student's area of specialization.

## CURRICULUM

The Education EdD program requires 15 credit hours of prerequisite courses that do not count toward the minimum 54 credit hours beyond the master's degree. Students must complete 24 credit hours of core courses, 15 credit hours within the chosen specialization area (curriculum, instruction, instructional technology, foundations, educational leadership and community college), and 15 credit hours of dissertation. Students must complete and pass a candidacy examination and dissertation defense.

### Total Hours Required for EdD—54 Credit Hours Minimum beyond the Master's Degree.

Students entering the EdD in Education program with a graduate degree in a field other than education or those whose master's degree did not include the prerequisite core classes must complete the prerequisite core classes they have not taken. This 15-credit-hour core of education foundation courses may be satisfied by a student's prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

Students without some or all of the foundation courses should apply to the EdD in Education program of their choice in either spring or summer prior to beginning the EdD in the fall semester.

Applicants without this prior foundational course work may be admitted in probational status and will only be converted to regular admission status upon satisfactory completion of the prerequisite core.

### Prerequisites—15 Credit Hours

The prerequisite core is defined by the course requirements listed below. Alternative prerequisite courses may be used with the approval of specialization faculty and the program coordinator.

- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours) (or equivalent)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

**Note:** Prerequisite courses do not count toward minimum program hours.

### Core Courses—24 Credit Hours

- EDF 6467 Mixed Methods for Evaluation in Educational Settings (3 credit hours)
- EDF 7916 Analysis and Synthesis of Educational Literature (3 credit hours)
- EDG 6285 Evaluation of School Programs (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7500 Seminar in Educational Research (3 credit hours)
- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7938 Research Cluster Seminar (6 credit hours)

### Specialization Area—15 Credit Hours Minimum

- Students must select a specialization area, for example: Curriculum and Instruction, Counselor Education, Instructional Technology, Math Education, or another area in the College of Education that offers doctoral-level course work.
- The specialization course work must include a minimum of 9 credit hours at the 7000 level. Specialization courses must be approved by the student's adviser and the program coordinator

by the end of the student's first semester in the program.

- Additional specialization course work may be required prior to entering candidacy to ensure that a student has adequate background knowledge and research skills to successfully complete their dissertation.
- Applicants are encouraged to contact faculty members in the area of specialization prior to applying. Additional information about specialization areas can be found on the program website: <http://education.ucf.edu/edd/>

### **Example I: Curriculum and Instruction**

The Curriculum and Instruction option provides students with a broad understanding of the factors affecting education and approaches to addressing systemic problems. For example, a student interested in focusing on improving the curriculum at her school and in her school district might work with her adviser to construct the following specialization:

- EDF 7232 Analysis of Learning Theories in Instruction (3 credit hours)
- EDG 7221 Advanced Curriculum Theory (3 credit hours)
- EDG 7692 Issues in Curriculum (3 credit hours)
- ESE 6217 Curriculum Design (3 credit hours)
- EDG 6224 Curriculum Policy Analysis (3 credit hours)

A student interested in this area of specialization might have also chosen courses in one of the following areas: instruction, learning theory, social foundations of education, or subject specific courses that focus on curriculum such as science education or social studies education.

### **Example II: Instructional Technology**

The Instructional Technology specialization prepares students for teaching, research and instructional design in primarily higher education and corporate settings. Students in this specialization often focus on applying research-based pedagogies to the use of emerging technologies for adult learners. For example, a student with this interests seek approval to substitute IDS 6504 Adult Learning for the prerequisite class EDF 6259 Learning Theories Applied to Classroom Instruction and Management, and might request to substitute EME 6613 Instructional Systems Design for EDG 6223

Curriculum Theory and Organization. Their adviser might then recommend the following specialization classes:

- IDS 6503 International Trends in Instructional Systems (3 credit hours)
- EME 7634 Advanced Instructional Systems Design (3 credit hours)
- EME 7942 Doctoral Internship in Educational Technology (3 credit hours)
- EDF 7232 Analysis of Learning Theories in Instruction (3 credit hours)
- EME 6062 Research in IT (3 credit hours)
- EME 6607 Planned Change or EME 6705 Administration of IS (3 credit hours)

For more information about the Instructional Technology program, visit the program website at <http://insttech.education.ucf.edu>

### **Example III: Counseling Education**

- MHS 7406 Advanced Theories in Counseling (3 credit hours)
- MHS 7901 Advanced Practicum in Counselor Education (3 credit hours)
- MHS 6510 Advanced Group Counseling (3 credit hours)
- MHS 7611 Supervision in Counselor Education (3 credit hours)
- MHS 7340 Advanced Career Development (3 credit hours)
- Electives approved by adviser (12 credit hours)

For more information about the Counseling Education program, visit the program website at <http://www.ucfcounselored.org>

### **Example IV: Exceptional Education**

- EEX 7936 Current Issues/Trends in Special Education (3 credit hours)
- EEX 7527 Professional Writing/Grant Writing in Special Education (3 credit hours)
- EEX 7320 Program Evaluation and Planning in Special Education (3 credit hours)
- EEX 7939 Urban Special Education Leadership (3 credit hours)

And one of the following 3-credit-hour internships:

- EEX 7865 Internship in College Instruction in Special Education (3 credit hours)
- EEX 7866 Internship in Practicum Supervision in Special Education (3 credit hours)
- EEX 6946 Internship (3 credit hours)

## Dissertation—15 Credit Hours Minimum

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

## Candidacy

To enter candidacy for the EdD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass the required examination.

- The examination must be completed prior to admission to candidacy.
- The examination will be scheduled by the student and major adviser. The associate dean for graduate studies must be notified of the date and location of the exam 30 days in advance.
- Students must be enrolled in the university during the semester an examination is taken.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A goal statement detailing the applicant's intended area of specialization and explains how the degree will contribute to the applicant's career development plan.
- Résumé with at least three to five years of successful professional practice.
- Three letters of recommendation.

Applicants who are not certain if the courses they completed are equivalent to the prerequisite courses can submit their transcripts to the program coordinator for evaluation.

Applicants who have not completed the prerequisite courses as part of their master's program are encourage to apply for Graduate Nondegree status one or two semesters before admission, so they can complete the prerequisites prior to starting the program.

Education EdD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Feb 1		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Feb 1		

## CONTACT INFO

Lindsay Archambault  
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 larchamb@mail.ucf.edu  
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 Educational Studies  
 ED 220

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## Education PhD

- Communication Sciences and Disorders PhD
- Counselor Education PhD
- Elementary Education PhD
- Exceptional Education PhD
- Higher Education PhD
- Hospitality Education PhD
- Instructional Technology PhD
- Mathematics Education PhD
- Science Education PhD
- Social Science Education PhD

## PROGRAM DESCRIPTION

The PhD in Education is a research-oriented degree appropriate for those who seek positions in the professoriate or in school districts, businesses, industry, educational agencies and other educational settings that require a strong research base.

It is the intent of this program to be interdisciplinary, allowing flexibility for students who will work in research clusters and learning communities with faculty on education-related research. Programs of study can be designed for

those who seek faculty positions in a research university or research-oriented education positions in business and industry.

## CURRICULUM

The Education PhD requires a minimum of 69 credit hours beyond the master's degree; minimum credit hour requirements vary by track. Students from all tracks must complete 24 credit hours of core courses, 24 credit hours of dissertation, and 3 credit hours of internship; the Hospitality Education track does not require internship hours; the Communication Sciences and Disorders track requires 2 credit hours in university teaching and 2 credit hours in clinical supervision. Additional course requirements vary by track. All students must also complete the candidacy examination.

### Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

#### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

#### Internship

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children,

adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

#### Dissertation—24 Credit Hours Minimum

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

#### Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

#### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		

Education PhD	Fall Priority	Fall	Spring	Summer
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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 Department of Child, Family and Community  
 Sciences  
 ED 322-N

### Education PhD

# Communication Sciences and Disorders PhD

## TRACK DESCRIPTION

The Communication Sciences and Disorders doctoral program is designed specifically for those who wish to pursue careers as scholars, teachers and leaders in the area of school speech-language pathology with a content focus on language disorders and literacy.

## CURRICULUM

### Total Hours Required for PhD—81 Credit Hours Minimum beyond the Master's Degree.

#### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)

- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or SPA 7492 Evidenced-Based Practice in Speech Language Pathology

### Required Specialization Courses—27

#### Credit Hours Minimum

- SPA 6843 Severe Language-Based Reading and Writing Disabilities (3 credit hours)
- SPA 7490 Advanced Studies in Language Disorders (3 credit hours)
- SPA 7493 Advanced Studies in School Speech-Language Pathology (3 credit hours)
- SPA 7494 Doctoral Seminar I: Spoken and Written Language Disorders (3 credit hours)
- SPA 7495 Doctoral Seminar II: Spoken and Written Language Disorders (3 credit hours)
- IDS XXXX Professional Collaboration Around Language Issues (3 credit hours)
- Advanced course work in Reading (3 credit hours)
- Advanced course work in Exceptional Education (3 credit hours)
- Additional course work in Teaching English to Speakers of Other Languages (3 credit hours)

### Internship—6 Credit Hours Minimum

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a three-part internship:

- University teaching (2 credit hours)
- Clinical supervision (2 credit hours)
- Professional development (2 credit hours)

### Dissertation—24 Credit Hours Minimum

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included

in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.

All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.

- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

#### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a

professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## **ADMISSIONS**

The PhD in Education is a research-oriented degree appropriate for those who seek positions in the professoriate or in school districts, businesses, industry, educational agencies and other educational settings that require a strong research base.

It is the intent of this program to be interdisciplinary, allowing flexibility for students who will work in research clusters and learning

communities with faculty on education-related research. Programs of study can be designed for those who seek faculty positions in a research university or research-oriented education positions in business and industry.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master's degree with an emphasis related to one of the tracks in the PhD program and master's level competency in educational research and statistics. For the Communication Sciences and Disorders Track, evidence of a master's degree in Communication Sciences and Disorders (Speech-Language Pathology).
- Competitive GRE score, taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé

Communication Sciences and Disorders PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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 Program Director  
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 Communication Sciences and Disorders  
 HPA2 109

## Education PhD

# Counselor Education PhD

## TRACK DESCRIPTION

The Counselor Education doctoral program is designed specifically for those who wish to pursue careers as counselor educators at the university level or as supervisors in schools or agencies.

## CURRICULUM

### Total Hours Required for PhD—84 Credit Hours Minimum beyond the Master's Degree.

#### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

#### Required Internship - 6 Credit Hours Minimum

- MHS 7840 Internship in Counselor Education (repeatable) (6 credit hours)

#### Required Specialization Courses—30 Credit Hours Minimum

- MHS 7406 Advanced Theories in Counseling (3 credit hours)
- MHS 7901 Advanced Practicum in Counselor Education (3 credit hours)
- MHS 6510 Advanced Group Counseling (3 credit hours)
- MHS 7700 Professional Issues in Counselor Education (3 credit hours)
- MHS 7311 Technology Issues in Counselor Education (3 credit hours)



- MHS 7611 Supervision in Counselor Education (3 credit hours)
- MHS 7808 Practicum in Counseling Supervision (3 credit hours)
- MHS 7340 Advanced Career Development (3 credit hours)
- MHS 6221 Individual Psychoeducational Testing II (3 credit hours)
- MHS 7730 Research Seminar in Counselor Education (3 credit hours)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The

internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.

- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field, three letters of recommendation, a goal statement, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field and master’s level competency in educational research and statistics.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé.

Counselor Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

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Education PhD

# Education PhD Elementary Education PhD

## TRACK DESCRIPTION

The Elementary Education doctoral program is designed to provide further education for those aspiring to work in the area of education at the post-secondary level (four-year colleges and/or research universities).

## CURRICULUM

**Total Hours Required for PhD—69  
 Credit Hours Minimum beyond the  
 Master’s Degree.**

### Core Courses—18-21 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Required Courses—21 Credit Hours Minimum**

- Philosophical Foundations for Studies in Education (3 credit hours)
- Writing for Professional Publication in Education (3 credit hours)
- Areas of emphasis: four additional courses in one or more areas including Science Education, Literacy Education, Technology Education, or Arts Education with one course from outside the college in a related field of study (12 credit hours)

### **Required Internship—3-6 Credit Hours Minimum**

- Elementary Education Internship

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### **Candidacy**

To enter candidacy for the PhD, students must have

an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

### ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score, taken within the last five years, a master's degree in a closely related field, three letters of recommendation, a goal statement, résumé, writing sample, and interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master's degree in a related field of study, including one Graduate Curriculum course, and master's level competency in educational research and statistics.
- A minimum of 12 credit hours of Graduate Education courses.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé.
- Writing sample
- Interview.
- Elementary certification, with a minimum of three years teaching experience in early childhood, elementary, or middle school.

Elementary Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

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### Education PhD

## Exceptional Education PhD

### TRACK DESCRIPTION

The Exceptional Education doctoral program is designed to prepare highly competent doctoral-level professionals to assume leadership positions in teaching, research and service in the area of special education.

### CURRICULUM

**Total Hours Required for PhD—69  
 Credit Hours Minimum beyond the  
 Master's Degree.**

#### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)

- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Required Specialization Courses—15 Credit Hours Minimum**

- EEX 7936 Current Issues/ Trends in Special Education (3 credit hours)
- EEX 7527 Professional Writing/ Grant Writing in Special Education (3 credit hours)
- EEX 7766 Technology Research/ Training in Special Education (3 credit hours)
- EEX 7428 Personnel Preparation: Special Education (3 credit hours)
- EEX 7320 Program Evaluation and Planning in Special Education (3 credit hours)

### **Required Internship—6 Credit Hours Minimum**

- EEX 7865 Internship in College Instruction in Special Education (3 credit hours)
- EEX 7866 Internship in Practicum Supervision in Special Education (3 credit hours)

Specialization in this track must include a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.

- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### Dissertation—24 Credit Hours Minimum

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

### ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field, three letters of recommendation, a goal statement, résumé, group interview, and a writing sample.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.

- Résumé
- Writing sample, that on the spot writing for 15 minutes.
- Group interview with faculty. Current doctoral students are also allowed to interview applicants.

Exceptional Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

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Education PhD

# Higher Education PhD

### TRACK DESCRIPTION

The Higher Education doctoral program is designed for applicants who have extensive experience as administrators or staff in postsecondary institutions who want to pursue careers as scholars and leaders.

### CURRICULUM

### Total Hours Required for PhD—69 Credit Hours Minimum beyond the Master’s Degree.

### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)

- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Required Specialization Courses—18 Credit Hours Minimum**

- EDH 7051 Educational Leadership in Higher Education (3 credit hours)
- EDH 7056 Politics/Governance /Finance Higher Education (3 credit hours)
- EDH 7408 Educational Personnel and Contract Negotiation (3 credit hours)
- EDA 7236 Legal Issues in Higher Education (3 credit hours)
- EDH 6065 History and Philosophy of Higher Education (3 credit hours)
- EDA 6540 Organization and Administration of Higher Education (3 credit hours)

### **Required Internship—3 Credit Hours Minimum**

- EDH 6946 Higher Education Internship (3 credit hours)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for

graduate studies and research must be notified of the date and location of the exam 30 days in advance.

- All PhD. candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

**Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

**Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

**Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

**ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field, three letters of recommendation, a goal statement, résumé, and a writing sample.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.

- Résumé
- Submit one of the following writing samples: research paper, journal article, grant proposal, policy analysis, or program evaluation.

Higher Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

**CONTACT INFO**

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Education PhD

**Hospitality Education PhD**

**TRACK DESCRIPTION**

The Hospitality Education doctoral program prepares candidates for teaching and research in the field of hospitality systems in professions such as a tenure-earning university professor and hospitality field consultants.

**CURRICULUM**

**Total Hours Required for PhD—69 Credit Hours Minimum beyond the Master’s Degree.**

**Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)



- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Specialization Courses—21 Credit Hours Minimum**

- Cognate or elective; approved by adviser (9 credit hours)
- HFT 7258 Strategies and Tactics: Lodging (3 credit hours)
- HFT 7546 Strategies and Tactics: Guest Service Management (3 credit hours)
- HFT 7715 Strategies and Tactics: Travel and Tourism (3 credit hours)
- HFT 7876 Strategies and Tactics: Foodservice (3 credit hours)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.

- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance

research methods course for 3 of the required 24 credit hours of dissertation.

## Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

## Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, master's degree in a closely related field, three letters of recommendation, a goal statement, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master's degree in a closely related field.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé

If you attended a college/university outside of the United States, a course-by-course evaluation of your transcript is required. Transcript evaluations are accepted from World Education Services (WES) or Josef Silvey Associates, Inc. only.

Hospitality Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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## Education PhD

# Instructional Technology PhD

## TRACK DESCRIPTION

The Instructional Technology doctoral program prepares students for teaching and research in the field of instructional systems in professions such as a university professor or corporate researcher.

## CURRICULUM

**Total Hours Required for PhD—69**  
**Credit Hours Minimum beyond the Master's Degree.**

### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)

- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Specialization Courses—18 Credit Hours Minimum**

- Cognate or elective; approved by adviser (9 credit hours)
- IDS 6504 Adult Learning (3 credit hours)
- IDS 6503 International Trends in Instructional Systems (3 credit hours)
- EME 7634 Advanced Instructional Systems Design (3 credit hours)

### **Required Internship - 3 Credit Hours Minimum**

- EME 7942 Doctoral Internship in Educational Technology (3 credit hours)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

## Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field, three letters of recommendation, a goal statement, résumé, and a writing sample.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé
- Ten to twenty page original paper on any topic.

Instructional Technology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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Education PhD

# Mathematics Education PhD

## TRACK DESCRIPTION

The Mathematics Education doctoral program is designed to prepare mathematics educators for various career options, including training educators, teaching postsecondary mathematics, and conducting research in mathematics education.

## CURRICULUM

**Total Hours Required for PhD—72 Credit Hours Minimum beyond the Master’s Degree.**

### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### Required Specialization Courses—18 Credit Hours Minimum

- MAE 7640 History of Mathematics Education (3 credit hours)

- MAE 7795 Seminar on Research in Mathematics Education (6 credit hours)
- MAE 6656 Using Technology in the Instruction of K-12 Mathematics (3 credit hours)
- MAE 6938 Seminar in Mathematics Education (3 credit hours)
- MAE 6899 Seminar in Teaching Mathematics (3 credit hours)

### **Required Internship—6 Credit Hours Minimum**

- MAE 6946 Mathematics Education Internship

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

### ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field and a master’s level competency in educational research and statistics, three letters of recommendation, a goal statement, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field and master’s level competency in educational research and statistics.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé

Mathematics Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

### CONTACT INFO

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Education PhD

## Science Education PhD

### TRACK DESCRIPTION

This Science Education doctoral program is designed to prepare science educators for various career options, including training science teachers, teaching postsecondary science, and conducting research in science education.

### CURRICULUM

#### Total Hours Required for PhD—75 Credit Hours Minimum beyond the Master’s Degree.

#### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

#### Specialization Courses—21 Credit Hours Minimum

- SCE 7746 Teaching Theory and Research in Science Education (3 credit hours)

- SCE 7XXX Design of Postsecondary Science Curriculum (3 credit hours)
- SCE 7XXX Assessment in Science Teaching and Learning (3 credit hours)
- SCE 7864 Science, Technology and Society (3 credit hours)
- SCE 7935 Special Seminar Professional Writing/Grant Writing in Science Education (3 credit hours)
- SCE 7146 Professional Issues in Science Education (3 credit hours)
- Additional electives (3 credit hours)

### **Required Internship—6 Credit Hours Minimum**

- SCE 7942 Internship/Practicum in Science Education (K-12 or Community College)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

#### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

#### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

#### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

#### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

## Candidacy

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master’s degree in a closely related field, three letters of recommendation, a goal statement, résumé, and an interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master’s degree in a closely related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé.
- Interview.

Science Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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Education PhD

# Social Science Education PhD

## TRACK DESCRIPTION

The Social Science Education doctoral program is designed to prepare social science educators for successful careers in research and teaching.

## CURRICULUM

**Total Hours Required for PhD—69  
 Credit Hours Minimum beyond the  
 Master’s Degree.**

### Core Courses—24 Credit Hours

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### Specialization Courses—18 Credit Hours Minimum

- SSE 7740 History of Social Studies Education Seminar (3 credit hours)
- SSE 7796 Research in Social Science Education Seminar (3 credit hours)



- SSE 7797 Content and Program Analysis in Social Science Education (3 credit hours)
- SSE 6387 Teaching with Film in the Social Studies (3 credit hours)
- SSE 6388 Digital History in the K-12 Classroom (3 credit hours)
- Cognate Courses in the social sciences (3 credit hours, course must be approved by adviser)

### **Internship—3 Credit Hours Minimum**

- SSE 7947 Internship in Social Science Education (3 credit hours)

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examinations**

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

Please note there may be variations in length of exam time and content based upon the respective requirements of each track.

### **Total Hours Required for PhD—99 Credit Hours beyond the Bachelor's Degree, 69 Credit Hours beyond the Master's Degree**

This section shows the elements of the curriculum that are in common for all of the tracks. The internship requirement is common to most of the tracks but not all and more detail is provided on the internship in each specialization section.

### **Core Courses—24 Credit Hours**

- IDS 7501 Issues and Research in Education (3 credit hours)
- IDS 7500 Seminar in Educational Research (variable credit and repeatable, 6 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- IDS 7502 Case Studies in Research Design (3 credit hours)
- IDS 7938 Research Cluster Seminar (3 credit hours) or approved research methods elective

### **Internship**

Specialization in all tracks must include a professional internship. In the Communication Sciences and Disorders Track, however, students must complete a two-part internship: one in university teaching (2 credit hours) the other in clinical supervision (2 credit hours) for children, adolescents and adults with disorders in language and literacy. The Hospitality Education Track does not require a professional internship.

### **Dissertation—24 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal and present it to the dissertation committee, and defend the final research submission with the dissertation committee. Students may substitute an approved 3 credit hour advance research methods course for 3 of the required 24 credit hours of dissertation.

### **Candidacy**

To enter candidacy for the PhD, students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

## Candidacy Examinations

- Examinations must be completed prior to admission to candidacy.
- Examinations will be scheduled by the student and major adviser. The associate dean for graduate studies and research must be notified of the date and location of the exam 30 days in advance.
- All PhD candidates will be required to complete two examinations. Students must be enrolled in the university during the semester an examination is taken.
- Research in the Specialization—8-hour written examination.
- Specialization—3-hour oral examination.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a master's degree in a closely related field, three letters of recommendation, a goal statement, résumé, writing sample, and interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master's degree in a closely related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Goals statement.
- Résumé.
- Writing sample.
- Interview.

Social Science Education PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Dec 20	Feb 15		
International Applicants	Dec 20	Jan 15		
International Transfer Applicants	Dec 20	Feb 15		

## CONTACT INFO

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# Educational Leadership EdD

## PROGRAM DESCRIPTION

The Education Leadership EdD program provides advanced graduate studies for students aspiring to leadership positions in education. The program offers doctoral study in either K-12 or higher education administration.

## CURRICULUM

The Educational Leadership EdD requires a minimum of 63 credit hours beyond the master's degree, including 15 credit hours of educational leadership core courses, 9 credit hours of research/data analysis, a minimum of 12 credit hours within an area of specialization, 6 credit hours of cognate courses, and 21 credit hours of dissertation.

## Total Hours Required for EdD—63 Credit Hours Minimum beyond the Master's Degree.

Content is offered in the areas of political and organizational theory, leadership, systems theory, planning and evaluation, school law and finance, decision making, communications, organizational planning, institutional climate and assessment, staff development, program analysis and evaluation, curriculum and instruction, and educational policy studies. The doctoral program provides structure essential to quality control and flexibility to permit specialization.

Candidates for the EdD degree can concentrate their doctoral study in either K-12 or higher education administration. Students who are enrolled in the K-12 track are typically employed in public and

private K-12 settings and must complete, if they have not already done so, all course work required for Florida Level 1 Educational Leadership Certification must be completed (Prerequisites). This includes a minimum of eight educational leadership courses (or their equivalent). Students who have not completed courses in graduate research methods and foundations of education must also include these courses in their program of study. Students who pursue the higher education concentration are typically employed in two- or four-year colleges or universities. The higher education focus requires a minimum of 18 semester hours of specified courses plus two elective courses. Students must complete the higher education core courses in addition to the educational leadership core courses, cognates, specialization, research and dissertation.

### **Prerequisite Courses**

- As necessary.

### **Core Courses—15 Credit Hours**

- EDA 7101 Organizational Theory in Education (3 credit hours)
- EDA 7192 Educational Leadership (3 credit hours)
- EDA 7195 Politics, Governance, and Financing of Educational Organizations (3 credit hours)
- EDA 7205 Planning, Research, and Evaluation Systems in Educational Administration (3 credit hours)
- EDA 7225 Educational Personnel Administration (3 credit hours)

### **Research and Data Analysis—9 Credit Hours Minimum**

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record, and Other Qualitative Data (3 credit hours)

### **Specialization Courses—12 Credit Hours Minimum**

### **Cognate Courses—6 Credit Hours**

The cognate component is satisfied through the completion of graduate study outside the College of Education. The courses support the area of specialization and academic interests. Typical areas of cognate study include public administration,

communications, psychology, labor relations and business administration.

### **Dissertation—21 Credit Hours Minimum**

Doctoral students must present a prospectus for the dissertation to the doctoral adviser, prepare a proposal, present the proposal to the dissertation committee, and defend the final research submission with the dissertation committee. Registration for dissertation hours is not permitted until the student is admitted to candidacy.

### **Candidacy**

To enter candidacy for the Education Leadership EdD program students must have an overall 3.0 GPA on all graduate work included in the planned program and pass all required examinations.

### **Candidacy Examination**

Candidacy examinations will be scheduled near the tenth week of the fall and spring semesters, and summer exams will be scheduled for the sixth week of the term. Students must be enrolled in the university during the semester an examination is taken. The exams are:

- General educational leadership (five hours)
- Area of specialization (three hours)

### **Examinations**

Education Leadership EdD program students must pass all applicable section of the Florida Education Leadership Examination if seeking initial certification.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Master's degree in a closely related field.

- Official, competitive GRE score, taken within the last five years.
- Three letters of recommendation.
- Résumé.
- A goal statement.

Educational Leadership EdD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 20	Sep 20	Feb 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Program Director

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Department of Educational Research, Technology, and Leadership

ED 222N.

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# Electrical Engineering PhD

## PROGRAM DESCRIPTION

The Doctor of Philosophy in Electrical Engineering is primarily intended for students with a master's degree in Electrical Engineering or a closely related discipline who wish to pursue a career in research or academia. Specializations include Communications, Digital Signal Processing/Image Processing, Controls and Robotics, Electromagnetics, Electro-Optics, Photonics, Power Electronics and Electronics, Solid-State/Microelectronics, and VLSI Design.

Research interests of the Electrical Engineering faculty include antennas, microwave and millimeter circuits/devices, communication systems, digital signal/image processing, power electronics, electronic circuits, IFF devices, electromagnetic theory, radar and microwave remote sensing, speech

processing, VLSI design, spread spectrum systems, SAW and ACT devices, spectral estimation, solid state device modeling and computer-aided design (CAD) techniques, communication networks, integrated services digital networks, neural networks, systems and controls, robotics, robust control, computer control, microelectronics, semiconductors, thin films, power system stability, bipolar device modeling, solid state lasers, optical propagation, fiber optics, optical signal processing, laser-induced damage, optical testing, diffractive optics, phase conjunction, infrared detectors, Fourier optics, lens design, and nonlinear optics.

## CURRICULUM

The Electrical Engineering PhD program requires a minimum of 72 credit hours beyond the bachelor's degree. Of these 72 hours, a minimum of 42 credit hours must be regular classroom course work and a minimum of 15 credit hours up to a maximum of 24 credit hours of dissertation hours can be credited toward the degree. No more than 12 credit hours of Independent Study are allowed as a part of the 36 hours of regular classroom course work. The remaining hours can be a combination of classroom course work and/or pre-candidacy doctoral research.

### Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree

Students admitted with an earned master's degree from a regionally accredited institution or recognized foreign institution may be eligible to have up to 30 credit hours of their doctoral program waived without a course-by-course review of completed course work. The student's doctoral adviser in conjunction with the doctoral program director will determine the number of hours to be allowed. These hours will be credited such that classroom course work will be credited against the required doctoral classroom course work with the exception that only six hours of Independent Study will be allowed and credited against the 12 credit hours of Independent Study allowed in the doctoral program. Thesis hours can also be credited as pre-candidacy doctoral research hours.

The program of study must be developed in consultation with an adviser within the first 9

credit hours of course work, and this requirement is strictly enforced by the program. The program of study must meet all the university requirements specified in the graduate catalog and must also meet departmental approval.

### **Regular Course Work—36 Credit Hours**

- No more than 12 hours of independent study and no directed research
- Courses may be chosen from the suggested lists below.

### **Electives—12-21 Credit Hours**

- May include directed research hours.
- Courses may be chosen from the suggested lists below.

### **Suggested Courses for the Doctoral Program**

The School of Electrical Engineering and Computer Science (Electrical Engineering Program) supports a number of technical research areas in which an Electrical Engineering PhD student is expected to do research. These technical areas are (in alphabetical order): Electromagnetics and Optics (EO), Signal Processing and Systems (SPS), and Micro-Systems and Nano-Systems (MNS). The Micro-Systems and Nano-Systems area covers the typical Electrical Engineering topic areas of Electronics, Power Electronics and Micro-Electronics, while the Signal Processing and Systems area covers the typical electrical topic areas of communications, controls, and signal processing.

In each one of these areas there is a suggested list of courses recommended for PhD students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research (technical) area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a PhD student is planning to take during his/her PhD studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### **Suggested Courses for Electromagnetics and Optics (EO)**

- EEL 5425 RF and Microwave Measurement Techniques (3 credit hours)

- EEL 5439 RF and Microwave Communication (3 credit hours)
- EEL 5462 Antenna Analysis and Design (3 credit hours)
- EEL 5482 EM Theory I (3 credit hours)
- EEL 5432 Satellite Remote Sensing (3 credits)
- EEL 5447 Introduction to Radar Systems (3 credit hours)
- EEL 5542 Random Processes (3 credit hours)
- EEL 6463 Antenna Analysis and Design II (3 credit hours)
- EEL 6488 EM Theory II (3 credit hours)
- EEL 6481 Numerical Techniques in Electromagnetics (3 credit hours)
- EEL 6489 Advanced Topics in Electromagnetics (3 credit hours)
- EEL 6504 Communication System Design (3 credit hours)
- EEL 6530 Communication Theory (3 credit hours)
- EEL 6564 Statistical Optics with Applications (3 credit hours)
- EEL 6XXX Microwave Remote Sensing (3 credit hours)
- EEL 6XXX Advanced Radar Systems (3 credit hours)
- MAA 5404 Complex Analysis (3 credit hours)
- MAP 5426 Special Functions (3 credit hours)
- MAP 5435 Advanced Mathematics for Engineers (3 credit hours)
- MAP 6424 Transform Methods (3 credit hours)
- OSE 5041 Introduction to Wave Optics (3 credit hours)
- OSE 5111 Optical Wave Propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)
- OSE 5143 Fiber Optics Communications (3 credit hours)
- OSE 5225 Radiometry and Detection (3 credit hours)
- OSE 5414 Fundamentals of Optoelectronic Devices (3 credit hours)
- OSE 5421 Integrated Optics (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)
- OSE 6445 High Speed Photonics (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)
- OSE 6615L Optoelectronic Device Fabrication Laboratory (3 credit hours)
- OSE 6560 Laser Engineering (3 credit hours)
- OSE 6211 Fourier Optics (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Electromagnetics and Optics area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Electromagnetics and Optics committee.

### **Suggested Courses for Micro-Systems and Nano-Systems (MNS)**

- EEL 5245 Power Electronics (3 credit hours)
- EEL 5317 Surface Acoustic Wave Devices and Systems (3 credit hours)
- EEL 5332 Thin Film Technology (3 credit hours)
- EEL 5352 Semiconductor Materials Characterization (3 credit hours)
- EEL 5353 Semiconductor Device Modeling and Simulation (3 credit hours)
- EEL 5355 Fabrication of Solid State Devices (3 credit hours)
- EEL 5370 Operational Amplifiers (3 credit hours)
- EEL 5378 CMOS Analog and Digital Circuit Design (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6317 Power Semiconductor Devices and Integrated Circuits (3 credit hours)
- EEL 6246 Power Electronics II (3 credit hours)
- EEL 6338 Advanced Topics in Microelectronics (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6371 Advanced Electronics I (3 credit hours)
- EEL 6372 Advanced Topics in Electronics (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Micro-Systems and Nano-Systems area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Micro-Systems and Nano-Systems committee.

### **Suggested Courses for Signal Processing and Systems (SPS)**

- EEL 5513 Digital Signal Processing Applications (3 credit hours)
- EEL 6502 Adaptive Digital Signal Processing Applications (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 6823 Image Processing II (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)

- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 5630 Digital Control Systems (3 credit hours)
- EEL 5173 Linear Systems Theory (3 credit hours)
- EEL 6621 Nonlinear Control Systems (3 credit hours)
- EEL 6671 Modern and Optimal Control Systems (3 credit hours)
- EEL 6674 Optimal Estimation for Control (3 credit hours)
- EEL 6617 Fundamentals of Modern Multivariate Control (3 credit hours)
- EEL 6616 Adaptive Control (3 credit hours)
- EEL 6680 Advanced Topics in Modern Control Systems (3 credit hours)
- EEL 5XXX Autonomous Robotic Systems (3 credit hours)
- EEL 6XXX Cooperative Control of Networked Autonomous Systems (3 credit hours)

**Note:** The aforementioned list is a representative list of courses recommended for the Signal Processing and Systems area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Signal Processing and Systems committee.

### **Dissertation—15-24 Credit Hours Minimum**

- EEL 7980 (15 credit hours minimum)

### **Qualifying Review**

The Qualifying Review relies on annual appraisals of the student's progress conducted by the student's research/academic adviser. The student's appraisal template that the adviser completes will assess the student's academic performance (course performance) and research performance (student's performance at the research adviser's lab and co-authorship of peer-reviewed publications).

On an annual basis, and based on the completed student's appraisal template, as well as additional student documentation (up to the discretion of the EECS Graduate Committee), the EECS Graduate Committee will rank the student's performance as "Above Expectation," "At Expectation," or "Below Expectation" toward the completion of the PhD degree. The evaluation by the EECS Graduate Committee will have detailed justification for the student's ranking, and the ranking and its associated

justification will be provided to the student and the student's adviser.

Students will be notified (no earlier than the end of the first year of their studies and no later than the end of the second year of their PhD studies) whether they have passed the Qualifying Review or not, that is, whether they are eligible to continue in their PhD studies. A student who passes the Qualifying Review will continue with the completion of the rest of the PhD program's milestones (i.e., Candidacy Examination, Dissertation Proposal Examination, and Dissertation Defense). A student who fails the Qualifying Review will be dismissed from the program and will be given the opportunity to finish their Master's degree (if applicable).

A student who in the EECS Graduate Committee's opinion fails the Qualifying Review will be given the opportunity to request a reevaluation of his or her case by the committee. The decision of the EECS Graduate Committee, as a result of this reevaluation, is final.

Annual appraisals will end after the student has passed the Qualifying Review.

## Candidacy Examinations

After passing qualifiers, students are required to successfully complete the candidacy examination. The purpose of this examination is for the student to demonstrate readiness for preliminary research in a chosen field of study. This exam is administered by the student's dissertation advisory committee and is comprised of written and oral portions. Preparedness for taking the candidacy examination requires the acceptance of a professional paper by a peer-reviewed conference or journal that is deemed acceptable to the student's advisory committee. It is expected that the requirements for candidacy will be satisfied within the first twenty-four months of graduate work. Candidacy is normally taken near the completion of required course work and must be passed before registering for doctoral dissertation hours (EEL 7980). Continuous enrollment in at least 3 hours of doctoral dissertation hours is required once a student starts taking 7980 credits.

After passing the candidacy examination, the student will write a dissertation proposal and present it orally to the dissertation advisory committee for approval. The proposal must include a description of the research performed to date and the research planned to be completed for the dissertation.

## Dissertation Committee

Doctoral students must have a Dissertation Advisory Committee prior to the Candidacy Examination. The Committee will consist of a minimum of four members. At least three members must be qualified regular faculty members from the student's department (or college, if a college-wide program) at UCF, one of whom must serve as the chair of the committee. One member must be from either outside the School of EECS or outside the university.

The committee chair must be a member of the department graduate faculty approved to direct dissertations. Joint faculty members serve as department-faculty committee members. Adjunct faculty and off-campus experts may serve as the outside-the-college person in the committee. Program areas may further specify additional committee membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-advisor.

In unusual cases, two professors may chair the committee jointly with approval from the program director. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs. All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must

provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's and bachelor's degree in Electrical Engineering or a closely related discipline.
- Résumé.
- Statement about educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting applicants into their research programs.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Electrical Engineering PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Michael Georgiopoulos PhD  
 Professor  
 Program Director  
 michaelg@mail.ucf.edu  
 Telephone 407-823-5338  
 Department of Electrical Engineering  
 Engineering 407B

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# Environmental Engineering PhD

## PROGRAM DESCRIPTION

The Environmental Engineering PhD program focuses on pollution control, pollution prevention, and the correction of pollution effects on natural and man-made environments. The program is

known for its strong faculty research interests. Areas of study include drinking water treatment, wastewater treatment, solid and hazardous waste management, atmospheric pollution control and modeling, community noise abatement, and stormwater management. The program's mission is to prepare students for careers in environmental engineering with consulting firms; with industry; within federal, state, and local governments; and/or in higher education.

The program offers an intensive, individually tailored research program suitable for development of an academic or similar research-oriented career. Graduates of the program will have technical knowledge in critical areas of environmental engineering, critical thinking skills, formed and maintained partnerships with industry, government agencies, and professional organizations, and have developed awareness of the changing environmental needs of society and the global environment.

## CURRICULUM

The Environmental Engineering PhD program requires a minimum of 72 credit hours beyond the bachelor's degree or a minimum of 42 credit hours beyond the master's degree, including 12 credit hours of formal course work taken at UCF, 12 credit hours of courses taken at the discretion of an adviser, to include research hours, special topics, directed studies as well as additional formal courses, and 18 credit hours of dissertation work. A program of study must be developed with an advisory committee and meet with departmental approval at the beginning of the PhD program, at which time transfer credit will be evaluated on a course-by-course basis.

**Total Required Hours for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.**

**Required Courses—12 Credit Hours Minimum**

- To be taken from approved Civil Engineering course work.

**Elective Courses—42 Credit Hours Minimum**

- To be approved by a faculty adviser.



## Dissertation—18 Credit Hours Minimum

- XXX 7980 (18 Credit Hours Minimum)

## Examinations

Students must pass three examinations. The first is the PhD qualifying examination. This examination must be taken within the first year of study beyond the master's degree. In addition to the qualifying examination, students must pass the candidacy examination and the dissertation defense examination. The candidacy examination is normally taken near the end of the course work and consists of a written portion and an oral presentation of a research proposal. A copy of the written examination will be kept as part of the student's official record. The dissertation defense examination is an oral examination taken as defense of the written dissertation.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's and/or master's degree in Environmental Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-

face or telephone interviews before accepting an applicant into their research program.

Final articulation requirements will be determined by the department after students have been admitted and after discussions with their advisers.

Environ. Engineering PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Program Director  
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 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

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# Industrial Engineering PhD

## PROGRAM DESCRIPTION

The Doctor of Philosophy in Industrial Engineering is primarily intended for a student with a master's degree in Industrial Engineering or a closely related discipline.

The PhD program is designed to produce highly skilled researchers with both broad knowledge of industrial engineering and in-depth knowledge of specialty fields for careers in academia, industry, and government. The program allows a candidate to thoroughly study some aspect of industrial engineering, such as engineering management, operations research, simulation modeling and analysis, interactive simulation, quality, manufacturing and human engineering/ergonomics.

The Industrial Engineering program is structured to support the emergence of Central Florida as a national center of high technology as well as supporting the diverse service industries in the region and throughout the nation.

## CURRICULUM

The Industrial Engineering PhD program requires a minimum of 81 credit hours beyond the bachelor's degree or a minimum of 51 credit hours beyond the master's degree. Students must complete 21 credit hours of required core courses, 9-15 credit hours in specialization core courses in a selected area (industrial engineering, interactive simulation, simulation modeling and analysis, operations research, quality, human engineering/ergonomics, manufacturing, or management systems), 21-27 credit hours of electives, and 24 credit hours of dissertation. There is a residency requirement of two continuous semesters in full-time graduate student status (minimum of 9 total credit hours) after acceptance into the doctoral program.

### **Total Hours Required for PhD—81 Credit Hours Minimum beyond the Bachelor's Degree; 51 Credit Hours Minimum beyond the Master's Degree.**

As a pre-doctoral student at the beginning of the PhD program, a preliminary program of study must be developed with the graduate program coordinator and meet with departmental approval. At this time transfer credit will be evaluated on a course-by-course basis. After completion of the Qualifying Examination and admission as a doctoral student, the official program of study is developed with an adviser and must meet with departmental approval. The student's dissertation committee approves the final program of study after the Candidacy Examination is passed. The degree must be completed within seven years from the date of admission as a pre-doctoral student and within four years of passing the Candidacy Examination.

The Department of Industrial Engineering and Management Systems monitors student progress and may revert any student to non-degree status if performance standards or academic progress are not maintained. Satisfactory academic performance in a program includes, but is not limited to, maintaining at least a 3.0 GPA in all graduate work taken as

part of (or transferred into) the program of study. Satisfactory performance also involves maintaining the standards of academic progress and professional integrity expected in our discipline. Failure to maintain these standards may result in dismissal from the program.

**Depending on a student's chosen area of specialization, this program can be taken entirely through FEEDS.**

### **Prerequisites/Co-requisites**

Students must have background in the following areas.

- Computer programming capability. C, C++, or Java recommended.
- Calculus through Differential Equations (MAP 2302)

### **Required Courses—21 Credit Hours**

- EIN 5140 Project Engineering (3 credit hours)
- EIN 6336 Production and Inventory Control (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

### **Required Specialization Core—9-15 Credit Hours, depending upon specialization**

Select one of the following areas of specialization.

#### **Industrial Engineering**

- EIN 5117 Management Information Systems I (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6418 Linear Programming and Extensions (3 credit hours)

#### **Interactive Simulation**

- EIN 5255 Interactive Simulation (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)

- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)

### **Simulation Modeling and Analysis**

- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

### **Operations Research**

- ESI 6336 Queueing Systems (or STA 5825 Stochastic Processes and Applied Probability Theory) (3 credit hours)
- ESI 6418 Linear Programming and Extensions (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)

### **Quality**

- ESI 5227 Total Quality Improvement (3 credit hours) or ESI 6224 Quality Management (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)

### **Human Engineering/Ergonomics**

- EIN 5248C Ergonomics (3 credit hours)
- EIN 6279C Biomechanics (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)

### **Manufacturing**

- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- EIN 5392C Manufacturing Systems Engineering (3 credit hours)
- EIN 6459 Concurrent Engineering (3 credit hours)

### **Management Systems**

- EIN 5108 The Environment of Technical Organizations (3 credit hours)
- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)

### **Electives—21-27 Credit Hours, including articulation courses**

- A maximum of 12 hours of independent study or directed research may be included in a PhD program of study.

### **Dissertation—24 Credit Hours**

### **Articulation**

Students without a B.S.I.E. (or M.S.I.E. from UCF) degree or without the F.E. or the P.E. in industrial engineering have four additional required courses. These students must take at least one course from each of the following areas and a second course from one of the areas.

### **Ergonomics**

- EIN 6270C Work Physiology (3 credit hours)
- EIN 6264C Industrial Hygiene (3 credit hours)
- EIN 6258 Human-Computer Interaction (3 credit hours)
- EIN 6279C Biomechanics (3 credit hours)
- EIN 6215 Systems Safety Engineering and Management (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 5248C Ergonomics (3 credit hours)

### **Quality/Manufacturing**

- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 5227 Total Quality Improvement (3 credit hours)
- EIN 6398 Advanced and Nontraditional Manufacturing Processes (3 credit hours)
- EIN 6330 Quality Control in Automation (3 credit hours)
- EIN 5607C Computer Control of Manufacturing System (3 credit hours)
- EIN 5415C Tool Engineering and Manufacturing Analysis (3 credit hours)
- EIN 5392C Manufacturing Systems Engineering (3 credit hours)
- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- EGN 5858C Prototyping and Product Realization (3 credit hours)
- EGN 5855C Metrology (3 credit hours)

**Other**

- EIN 5117 Management Information Systems I (3 credit hours)
- ESI 6336 Queueing Systems (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 5359 Risk Assessment and Management (3 credit hours)
- EIN 5346 Engineering Logistics (3 credit hours)
- EIN 5388 Forecasting (3 credit hours)

**Credit Waived from an earned Master's Degree**

A maximum of 30 semester credit hours from an earned master's degree may be applied toward these requirements. Waived credits are evaluated on a course-by-course basis.

**Examinations**

In addition to the Qualifying Examination, the student must pass a Candidacy Examination, a Dissertation Proposal Examination, and a Dissertation Defense Examination. The Candidacy Examination may be taken any time after successful completion of the Qualifying Examination and typically consists of a written and oral presentation of a research area to the Dissertation Committee followed by a written examination to determine if the student has the breadth and depth of knowledge required to conduct independent research in the proposed area. The Dissertation Proposal Examination consists of a written and oral presentation of a detailed dissertation proposal. The Dissertation Defense Examination is an oral examination taken in defense of the written dissertation.

**Dissertation Committee Requirement**

The Dean, through the Chairs, is responsible for committee formation, additions and deletions. The doctoral committee must consist of a minimum of four members: at least three must be faculty members from within the student's department, and one must be at large, from outside the Industrial Engineering graduate faculty. The committee chair must be a member of the graduate faculty who is approved to direct dissertations. Faculty members with joint appointments in IEMS may serve as department-faculty committee members. Adjunct faculty and off-campus experts may serve as the outside-the-department person on the committee,

as well as serve as co-chairs of the committee with the approval of the department Chair. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.

In unusual cases, two program graduate faculty members may chair the committee jointly with the approval from the program chair. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs.

All committee members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal or final dissertation must be approved by the advisory committee with no more than one dissenting vote.

**IEMS Graduate Courses by Areas of Study****Engineering Management**

- EIN 5108 The Environment of Technical Organizations (3 credit hours)
- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 5356 Cost Engineering (3 credit hours)
- EIN 5346 Engineering Logistics (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours)

**Ergonomics**

- EIN 5248C Ergonomics (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 6215 System Safety Engineering and Management (3 credit hours)
- EIN 6279C Biomechanics (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- EIN 6264C Industrial Hygiene (3 credit hours)
- EIN 6270C Work Physiology (3 credit hours)

**Manufacturing/Operations Management**

- EGN 5720 Internal Combustion Engine Analysis and Optimization (3 credit hours)

- EGN 6721C Experimental Methods for High Performance Engine Manufacturing (3 credit hours)
- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- EIN 5388 Forecasting (3 credit hours)
- EIN 5392C Manufacturing Systems Engineering (3 credit hours)
- EIN 5607C Computer Control of Manufacturing Systems (3 credit hours)
- EIN 6336 Production and Inventory Control (3 credit hours)
- EIN 6459 Concurrent Engineering (3 credit hours)
- EIN 6425 Scheduling and Sequencing (3 credit hours)
- EIN 6930 Manufacturing Engineering Seminar (3 credit hours)
- EGN 5858C Prototyping and Product Realization (3 credit hours)

### Operations Research

- ESI 5306 Operations Research (3 credit hours)
- ESI 5419C Engineering Applications of Linear and Nonlinear Optimization (3 credit hours)
- ESI 6336 Queueing Systems (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 6418 Linear Programming and Extensions (3 credit hours)
- ESI 6448 Network Analysis and Integer Programming (3 credit hours)
- ESI 6551C Systems Engineering (3 credit hours)

### Simulation

- EIN 5255C Interactive Simulation (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6647 Intelligent Simulation (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)
- EIN 6528 Simulation Based Life Cycle Engineering (3 credit hours)

### Statistics and Quality Control

- ESI 5227 Total Quality Improvement (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

### Other

- EIN 5936 Seminar in Industrial Engineering: Doctoral Research (1 credit hour)
- ESI 6891 IEMS Research Methods (3 credit hours)

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's degree in Industrial Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Selected outstanding applicants who have a GPA of

at least 3.4 in the last 60 attempted semester hours of their undergraduate degrees and have GRE scores above the 80th percentile in both the verbal and quantitative sections of the GRE may be considered for direct entrance as pre-doctoral students with bachelor's degrees.

Fellowships and assistantships may be awarded based on the student's GPA, GRE scores, letters of recommendation, curriculum vitae/resume, and goals statement.

Students must complete any needed articulation course work and pass a PhD Qualifying Examination in order to be admitted as a regular doctoral student. This exam is normally taken within the first year after all articulation work is completed.

Industrial Engineering PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Charles H. Reilly PhD

Professor

Program Director

gradiems@mail.ucf.edu

Telephone 407-823-2204

Industrial Engineering and Management Systems  
Engineering II, Room 312C

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# Materials Science and Engineering PhD

## PROGRAM DESCRIPTION

The Materials Science and Engineering PhD program is designed for students with a master's degree in materials science and engineering, or closely related disciplines. The program provides students with a fundamental and applied research-

based education suitable for seeking employment in industry or academia.

## CURRICULUM

The Materials Science and Engineering PhD program requires a minimum of 72 credit hours beyond the bachelor's degree. If students have already earned their master's degree, a minimum of 42 credit hours are required. No more than 12 credit hours of directed doctoral research may be taken toward fulfilling the degree program of study course work requirements.

### Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.

Students entering the Materials Science and Engineering PhD program with a bachelor's degree are required to complete 72 credit hours of graduate course work, of which 57 credit hours are the minimum hours of course work (may include up to 12 credit hours of directed research with approved Program of Study) and 15 dissertation credit hours minimum.

The rest of the hours in the PhD program can be chosen by the student in consultation with the adviser and the dissertation committee and with the approval of the program coordinator. These credit hours may include doctoral directed research hours or doctoral dissertation hours.

Unless a completed (signed) program of study itemizing the study plan is approved prior to the end of the first semester of studies, the program coordinator may choose not to accept any part of the course work (including independent studies and/or directed research) taken by the student on a program of study subsequently submitted by the student.

### Courses—57 Credit Hours Minimum

To be approved by a faculty advisor, with no more than 12 hours of directed research.

### Dissertation—15 Credit Hours Minimum

- XXX 7980 (15 Credit Hours Minimum)

## Examinations

Both a qualifying exam and a candidacy exam are required. The doctoral qualifying exam is offered twice each year, during the fall and spring semesters. This is a two-day written examination and is intended to evaluate the student's mastery of the field of Materials Science and Engineering. The subject matter for the examination includes undergraduate-level materials science topics in general, and at the graduate level the topics covered by the required courses of the MS degree are included. The candidacy exam must be taken in the academic semester immediately following the student's passing of the qualifying exam and is scheduled by mutual agreement of the student and his/her dissertation committee. The student must prepare a written description of their proposed dissertation research prior to the examination, and present that to their dissertation committee during the candidacy examination. Additionally, the student may be questioned orally by his/her committee on topics relevant to the proposed dissertation research.

## Dissertation Committee

The Dean, through the Chair of the MMAE Department, and the program coordinator are responsible for committee formation, additions, and deletions. The doctoral committee must consist of a minimum of five members: three must be faculty members of the graduate program faculty approved to direct dissertations (see <http://www.graduate.ucf.edu/CurrentGradCatalog/content/GradFaculty/>), one must be at large from outside the degree program. The committee Chair must be a member of the graduate program faculty approved to direct dissertations. Adjunct faculty and off-campus experts may serve as the outside-the-college person in the committee. Program areas may further specify additional committee membership. The College of Graduate Studies reserves the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.

In unusual cases, with approval from the department Chair, two professors may chair the committee jointly. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs.

All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The

dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's and/or bachelor's degree in Materials Science and Engineering or a closely related discipline.
- Résumé.
- Statement about educational, research, and professional career objectives should include the student's intention for full or part-time study and their desire for a assistantship or fellowship.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Materials Science and Engineering PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Program Director  
krcoffey@mail.ucf.edu  
Telephone 407-823-2175  
AMPAC  
ENG I Rm 381

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# Mathematics PhD

## PROGRAM DESCRIPTION

The Doctor of Philosophy degree in Mathematics is intended to provide a broad base in applied and industrial mathematics. The goal of the program is to produce students who will attain distinction in their fields of research. In order to achieve this, the program has required core courses as well as a set of electives providing cross-disciplinary subjects. All students are required to take electives outside the department.

Students in the program can specialize in one of many aspects of mathematics, including propagation through random media, nonlinear waves, graph theory, operator algebra and frame theory, tomography, approximation theory, differential equations, nonlinear dynamics and mathematical physics, as well as abstract algebra, real and complex analysis, and probability theory. Responding to this wide variety of interests, the program offers flexibility in the composition of the core courses as well as the qualifying examination. The program is comprehensive with opportunities for students to pursue research in a variety of disciplines.

Faculty research interests include: applied analysis, differential equations, methods of mathematical physics, nonlinear waves, probability and mathematical statistics, functional analysis, numerical analysis, approximation theory, nonlinear dynamics, fluid mechanics, wave propagation, algebra, number theory, combinatorics and graph theory, inverse problems, special functions and orthogonal polynomials, financial mathematics, and medical imaging.

## CURRICULUM

The Mathematics PhD program consists of at least 75 credit hours of course work beyond the bachelor's degree, of which a minimum of 15 credit hours are required for the dissertation. In addition to dissertation hours, program requirements include 18 credit hours of core courses, and the remainder is comprised of electives and independent study courses. No more than 12 credit hours of independent study or independent directed research may be credited toward the degree. At least one-half of the program courses must be taken at the 6000 level.

### **Total Hours Required for PhD—75 Credit Hours Minimum beyond the Bachelor's Degree; 45 Credit Hours Minimum beyond the Master's Degree.**

Electives are chosen in consultation with the student's advisory committee and may be chosen from the suggested options: Discrete Mathematics, General Applied Mathematics, Image Processing and Computer Graphics, Mathematical Optics, Mathematical Physics, Pure Mathematics, Rational Mechanics, Signal Analysis, and Statistics. A list elective course options can be obtained from the graduate program coordinator. If a student takes MAP 4363 (Applied Boundary Value Problems I) previously as part of an undergraduate program, then MAP 5435 (Advanced Mathematics for Engineers) cannot be applied toward the graduate program of study, but another alternative can be taken.

Courses taken outside the Mathematics department must be approved by the adviser or graduate coordinator. These courses are selected in consultation with the student's advisory committee.

### **Core Courses—18 Credit Hours**

Students must take six of the following courses. The choices must be approved by the graduate director.

- MAA 6405 Complex Variables (3 credit hours)
- MAA 6416 Topology (3 credit hours)
- MAA 6404 Complex Analysis (3 credit hours)
- MAA 6506 Functional Analysis (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)



- MAA 6238 Measure and Probability (3 credit hours)
- MAP 6356 Partial Differential Equations (3 credit hours)
- MAP 6408 Applied Mathematics II (3 credit hours)
- MAS 5311 Abstract Algebra with Applications (3 credit hours)

### **Electives—42 Credit Hours**

### **Dissertation—15 Credit Hours Minimum**

### **Qualifying Examination**

The qualifying examination is a written examination administered twice a year. Students obtain permission from the graduate program director to take the examination. Students normally start taking this exam at the end of the first year and are expected to have completed the exam by the end of the second year unless a written request for a postponement has been approved by the Graduate Committee at least two months prior to the examination date. To be eligible to take the PhD Qualifying Examination, the student must have a minimum grade point average of 3.0 (out of 4.0) in all post-baccalaureate work.

Depending on the choice of core courses, students choose to complete qualifying exams in either of the following two groups of courses:

- MAA 6404 Complex Analysis (3 credit hours)
- MAA 6416 Topology (3 credit hours)
- MAA 6506 Functional Analysis (3 credit hours)
- MAS 5311 Abstract Algebra with Applications (3 credit hours)

#### **Or**

- MAA 6405 Complex Variables (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 6356 Partial Differential Equations (3 credit hours)

After passing the qualifying exam, the student must select a dissertation adviser. Finding a dissertation adviser is the student's responsibility and should be done as soon as possible. The student forms an advisory committee in consultation with the dissertation adviser. The dissertation adviser is the chair of the student's advisory committee. This

committee approves a plan of study for the doctoral student and recommends courses outside the department to be taken.

### **Candidacy Examination**

The candidacy examination is administered by the student's committee and tailored to the student's individual program. It can be attempted anytime after passing the qualifying examination, and after the student has begun research but prior to the end of the second year following the qualifying examination. The candidacy examination cannot be taken more than two times.

### **Dissertation Defense**

Upon completion of a student's research, the student's committee schedules an oral defense of the dissertation. Most students complete the program within five years after obtaining their bachelor's degree. Students are expected to complete the dissertation in no more than seven years from the date of admission to the program.

The required 15 credit hours of dissertation will provide ample opportunities for students to gain the independent learning experience through studying published research papers and deriving, on their own, new and meaningful research results.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Competitive GRE score, taken in the last five years.
- Three letters of recommendation.
- Goal statement.
- Résumé.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities,

past performance, recommendations, match of the program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Transfer of credits from other programs will be considered on a course-by-course basis. Additionally, students entering the graduate program with regular status are assumed to have a working knowledge of undergraduate calculus, differential equations, linear algebra (or matrix theory), boundary value problems, statistics, computer programming, and maturity in the language of advanced calculus (at the level of MAA 4226). Students who are not adequately prepared in one or more of these areas can select appropriate courses from the undergraduate curriculum to make up such deficiencies. Such courses, unless specially approved, do not count toward the graduate degree. Applicants not qualified for regular status may initially be admitted to the university in nondegree-seeking status, although only nine hours in this status are transferrable into a graduate program.

Mathematics PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Program Director  
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 Department of Mathematics  
 Math and Physics 212

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# Mechanical Engineering PhD

## PROGRAM DESCRIPTION

The Doctor of Philosophy degree in Mechanical

Engineering is intended for students with a master's or a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline. The doctoral program is intended to allow students to study in depth, with an emphasis on research in Aerospace Systems, Mechanical Systems, or Thermofluids.

## CURRICULUM

The Mechanical Engineering PhD program requires a minimum of 72 credit hours beyond a bachelor's degree and a minimum 42 credit hours beyond a master's degree in Mechanical or Aerospace Engineering or a closely related field. This program requires 15 dissertation credit hours minimum and may include up to 12 credit hours of directed research with approved Program of Study. The rest of the hours can be chosen by the student in consultation with the adviser and the dissertation committee and with the approval of the Graduate Director.

### Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.

Students entering the program with a master's degree are required to complete 42 credit hours minimum, of which 21-27 credit hours minimum are course work and 15 credit hours minimum are dissertation. No more than 12 credit hours of directed doctoral research may be taken toward fulfilling the degree program of study course work requirements.

The rest of the hours in the PhD program can be chosen by the student in consultation with the adviser and the dissertation committee and with the approval of the Graduate Director. These credit hours may include doctoral directed research hours or doctoral dissertation hours.

Unless a completed (signed) program of study itemizing the study plan is approved prior to the end of the first semester of studies, the Graduate Director of the MMAE department may choose not to accept any part of the course work (including independent studies and/or directed research) taken by the student on a program of study subsequently submitted by the student.

Admission to doctoral status requires that the student (1) pass a PhD Qualifying Examination, (2) establish a Doctoral Advisory Committee and (3) submit a departmentally approved Program of Study. These steps are normally completed within the first year of study beyond the master's degree.

### **Courses—57 Credit Hours Minimum**

- No more than 12 hours of directed research can be taken.

### **Dissertation—15 Credit Hours Minimum**

- xxx 7980 (15 Credit Hours Minimum)

### **Examinations**

In addition to the Qualifying Examination discussed above, the student must pass a Candidacy Examination and a Dissertation Defense Examination. The Candidacy Examination is taken near the end of the course work and consists of a written and oral presentation of a research proposal. The MMAE department requires that a PhD student submits his/her candidacy exam the academic semester immediately following his/her successfully passing the PhD Qualifying Exam. The Dissertation Defense Examination is an oral examination taken in defense of the written dissertation. More information on these examinations and other requirements of the PhD program are contained in the Graduate Handbook available from the MMAE Department (<http://www.mmae.ucf.edu>).

### **Dissertation Committee**

The Dean, through the Chairs, is responsible for committee formation, additions, and deletions. The doctoral committee must consist of a minimum of five members: three must be faculty members from within the student's department, and one must be at large from outside the Mechanical, Materials, and Aerospace Engineering Department. The committee Chair must be a member of the department graduate faculty approved to direct dissertations. Joint faculty members serve as department-faculty committee members as well as chairs of dissertation committees. Adjunct faculty and off-campus experts may serve as the outside-the-college person in the committee. Program areas may further specify additional committee membership. The UCF College of Graduate Studies reserves the right to review appointments to advisory committees, place

a representative on any advisory committee, or appoint a co-adviser.

In unusual cases, with approval from the program Chair, two professors may chair the committee jointly. Joint faculty members may serve as committee chairs, but off-campus experts and adjunct faculty may not serve as committee chairs.

All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved by a majority of the advisory committee.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Master's and bachelor's degree in Mechanical or Aerospace Engineering or a closely related discipline.
- Résumé.
- Statement about educational, research, and professional career objectives.
- Three letters of recommendation.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the Graduate Director for more information.

<b>Mechanical Engineering PhD</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

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# Modeling and Simulation PhD

## PROGRAM DESCRIPTION

The Doctor of Philosophy in Modeling and Simulation is primarily intended for students with an academic or work background in mathematics, engineering, or computer science who wish to pursue a career in academia, defense, entertainment, or manufacturing.

Simulation is the quintessential utility tool. In one way or another, just about every engineering or scientific field uses simulation as an exploration, modeling, or analysis technique. Simulation is not limited to engineering or science. Simulation is used in training, management, and concept exploration. Simulation entails constructing human-centered, equipment-centered, and/or stand-alone computer-based models of existing as well as conceptual systems or processes. The purpose of simulation is to evaluate the behavior of the human(s), organization, equipment, and/or systems under study through the evaluation of output from the corresponding simulation construct. Because of the scale and complexity of modeling and simulation, practitioners have developed both generalized

and specialized skills. Input from industry and government modeling and simulation users and developers has been instrumental in identifying the key competencies for professionals and has been critical to the development of this curriculum.

## CURRICULUM

The Modeling and Simulation PhD requires a minimum of 72 credit hours of course work, including a minimum of 15 dissertation hours. The core consists of five required courses. These core courses will provide an interdisciplinary framework for all students. In addition, students are required to take three of the seven focus area cornerstone courses. Students are also expected to produce refereed publications as part of their doctoral studies.

### **Total Hours Required for PhD— 72 Credit Hours Minimum beyond the Bachelor’s Degree; 42 Credit Hours beyond the Master’s Degree.**

Students may fulfill the cornerstone-course requirements through the courses chosen in the restricted core. Such students will meet the total credit hour requirements with additional elective courses.

### **Required Courses—15 Credit Hours**

- IDS 5717C Introduction to Modeling and Simulation (3 credit hours)
- IDS 5719 Quantitative Aspects of Modeling and Simulation (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- IDS 6916 Simulation Research Methods and Practicum (3 credit hours)

### **Choose one advanced research methods course:**

- PSY 6216 Advanced Research Methodology I (4 credit hours)
- ESI 6891 IEMS Research Methods (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- CAP 5512 Evolutionary Computation (3 credit hours)

The purpose of the advanced research methods course is to give students an introduction to how to do research and prepare students for performing research for their dissertations.

### **Focus Area Cornerstone and Restricted Courses**

The purpose of these courses is to ensure that students have depth in their focus area as well as have breadth in interdisciplinary modeling and simulation. To achieve depth, students must take the cornerstone course from their track plus one restricted elective 6000-level course in that focus area. In addition, to achieve breadth, students must take the cornerstone course from one other focus area.

### **Quantitative Aspects of Simulation Focus Area—9 Credit Hours Minimum**

The Quantitative Aspects of Simulation focus area caters to those who seek to develop skill in the application of advanced quantitative methods to modeling and simulation. Building on backgrounds in mathematics or statistics they will gain experience in modeling and simulation. Graduates will be able to apply mathematics and statistics to build multidisciplinary models and simulations. Typical courses include: Mathematical Modeling, Statistical Aspects of Digital Simulation, Advanced Systems Simulation, and Splines and Data Fitting.

#### **Cornerstone Course**

- MAP 5117 Mathematical Modeling (3 credit hours)

#### **Restricted Electives**

- EML 6062 Boundary Element Methods in Engineering (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials, and Aerospace Engineering I (3 credit hours)
- EEL 5173 Linear Systems Theory (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 6529 Advanced Systems Simulation (3 credit hours)
- ESI 6546 Process Simulation (3 credit hours)
- MAP 5117 Mathematical Modeling (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 5396 Splines and Data Fitting (3 credit hours)

- MAP 6118 Introduction to Nonlinear Dynamics (3 credit hours)
- MAP 6207 Optimization Theory (3 credit hours)
- MAP 6408 Applied Mathematics II (3 credit hours)
- MAP 6445 Approximation Techniques (3 credit hours)
- MAP 6465 Wavelets and Their Applications (3 credit hours)
- STA 5825 Stochastic Processes and Applied Probability Theory (3 credit hours)
- STA 6246 Linear Models (3 credit hours)
- STA 5703 Data Mining Methodology I (3 credit hours)
- STA 6704 Data Mining Methodology II (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)
- STA 6714 Data Preparation (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

### **Simulation Infrastructure Focus Area—9 Credit Hours Minimum**

The Simulation Infrastructure focus area caters to those who wish to gain an in-depth understanding of the basic components of simulation systems and their patterns of configuration and communication, including hardware and software issues. Students gain experience in the development of distributed simulation and training environments. Graduates are able to implement such systems or manage a team capable of developing such systems. Typical courses include Performance Models of Computers and Networks, Simulation Design and Analysis, High Performance Computer Architecture, and Analysis of Computer and Communication Systems.

#### **Cornerstone Course**

- CDA 5530 Performance Models of Computers and Networks (3 credit hours)

#### **Restricted Electives**

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- CDA 6107 Advanced Computer Architecture II (3 credit hours)

- CNT 5008 Computer Communication Networks Architecture (3 credit hours)
- COP 6615 Operating Systems Theory (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- EEL 5708 High Performance Computer Architecture (3 credit hours)
- EEL 5762 Performance Analysis of Computer and Communication Systems (3 credit hours)
- EEL 5892 Continuous System Simulation II (3 credit hours)
- EEL 6785 Computer Network Design (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)
- EEL 6893 Advanced Topics in Continuous Simulation (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6885 Software Engineering Quality Assurance Methods (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)
- EML 5025 Engineering Design Practicum (3 credit hours)
- ISM 7027 Systems Support of Organizational Decision Making (3 credit hours)

### **Simulation Management Focus Area—9 Credit Hours Minimum**

The Simulation Management focus area caters to those who wish to gain expertise in the management of projects related to modeling, simulation, and training. Graduates are prepared to manage such projects for military agencies or Modeling and Simulation Training companies. Typical courses include Environment of Technical Organizations, Modeling and Simulation of Real-Time Processes, Management Information Systems, and Project Engineering.

#### **Cornerstone Course**

- EIN 5108 The Environment of Technical Organizations (3 credit hours) or EIN 6528 Simulation Based Life Cycle Engineering (3 credit hours)

#### **Restricted Electives**

- EEL 6887 Software Engineering Life-Cycle Control (3 credit hours)
- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 5346 Engineering Logistics (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)

### **Computer Visualization in Modeling and Simulation Focus Area—9 Credit Hours Minimum**

The Computer Visualization in Modeling and Simulation focus area caters to those who wish to gain expertise in technical aspects of computer graphic systems, virtual environments, and human-centered simulation systems. Graduates have knowledge and experience in applying the state-of-the-art in computer graphics and other human-interface technologies. Typical courses include Computer Graphics Systems, Computer Vision, Machine Perception, Human-Virtual Environment Interaction, and Sensation and Perception. Some students in this focus area may also have an interest in UCF's Digital Media program.

#### **Cornerstone Course**

- CAP 5725 Computer Graphics I (3 credit hours)

#### **Restricted Electives**

- CAP 5415 Computer Vision (3 credit hours)
- CAP 6411 Computer Vision Systems (3 credit hours)
- CAP 6412 Advanced Computer Vision (3 credit hours)
- EEL 5771C Engineering Applications of Computer Graphics (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- EEL 6823 Image Processing II (3 credit hours)
- EEL 6843 Machine Perception (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)

### **Simulation Modeling and Analysis Focus Area—9 Credit Hours Minimum**

The Simulation Modeling and Analysis focus area caters to those who desire to gain expertise in using simulation as a tool for effective design, planning, analysis, and decision-making. The emphasis of this track is on problem definition, model formulation, design of simulation experiments, and model-based analysis. Graduates are prepared to work with corporate and government decision makers as they model and evaluate the impacts of proposed policies and system designs. Typical courses include Discrete System Simulation, Experimental Design, and Object-Oriented Simulation.

#### **Cornerstone Course**

- ESI 5531 Discrete Systems Simulation (3 credit hours)

#### **Restricted Electives**

- EEL 5892 Continuous System Simulation II (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)
- EEL 6893 Continuous System Simulation II (3 credit hours)
- EIN 6524 Simulation Modeling Paradigms (3 credit hours)
- EIN 6529 Simulation Design and Analysis (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- ESI 6529 Advanced Systems Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)
- ESI 6546 Process Simulation (3 credit hours)

### **Interactive Simulation/Intelligent Systems Focus Area—9 Credit Hours Minimum**

The Interactive Simulation/Intelligent Systems focus area responds to the needs of those who wish to pursue or are currently pursuing careers in the training simulation/simulator industries. Graduates specializing in this focus area possess the basic tools to create system designs for simulators and simulator-based training systems and to apply expert systems and other intelligent systems in a simulation setting. Typical required courses include

Training Systems Engineering, Simulation of Real-Time Processes, and Intelligent Simulation.

#### **Cornerstone Course**

- EIN 5255C Interactive Simulation (3 credit hours)

#### **Restricted Electives**

- CAP 5512 Evolutionary Computation (3 credit hours)
- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- CAP 6637 Affective Computing with Artificial Intelligence (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- EEL 6875 Engineering of Artificial Intelligence Systems (3 credit hours)
- EEL 6876 Current Topics in Artificial Intelligence in Engineering Systems (3 credit hours)
- EEL 6878 Modeling Artificial Intelligence (3 credit hours)
- EEL 6895 Current Issues in Real-Time Simulation (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)
- EIN 5602C Expert Systems in Industrial Engineering (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6647 Intelligent Simulation (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- EIN 6946 Simulation Practicum (3 credit hours)
- EME 6613 Instructional Systems Design (3 credit hours)
- TTE 6270 Intelligent Transportation Systems (3 credit hours)

### **Human Systems in Modeling and Simulation Focus Area—9 Credit Hours Minimum**

The Human Systems in Modeling and Simulation focus area caters to those who wish to gain expertise in the content and techniques of human behavior in simulation systems, including human factors, human-computer interaction, virtual worlds,

statistical and quantitative procedures, experimental design, computer techniques, and other research methodologies. Typical problem areas for R&D include human-in-the-loop simulation; team performance under stress; and use of visual, audio, haptic, and other sensory input/output modalities to coordinate human-machine activities. Typical courses include Human Factors, Training Systems Engineering, Human Computer Interaction, Intelligent Simulation, and Distributed Learning.

### Cornerstone Course

- EXP 5256 Human Factors I (3 credit hours) or EIN 5251 Usability Engineering (3 credit hours)

### Restricted Electives

- EIN 5248C Ergonomics (3 credit hours)
- EIN 6215 System Safety Engineering and Management (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- EME 5051 Technologies of Instruction and Information Management (3 credit hours)
- EME 6457 Distance Education: Technology Process Product (3 credit hours)
- EME 6601 Instructional Simulation Design for Training and Education (3 credit hours)
- EME 6613 Instructional System Design (3 credit hours)
- EME 6614 Instructional Game Design for Training and Education (3 credit hours)
- EXP 5208 Sensation and Perception (3 credit hours)
- EXP 6255 Human Performance (3 credit hours)
- EXP 6257 Human Factors II (3 credit hours)
- EXP 6258 Human Factors III (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)
- EXP 6541 Advanced Human-Computer Interaction (3 credit hours)
- FIL 5810 Transmedia Story Creation (3 credit hours)
- INP 5825 Human-Computer Interface (HCI) Design: A Team Approach (3 credit hours)
- INP 6215 Assessment Centers and Leadership (3 credit hours)
- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- INP 6605 Training and Performance Appraisal (3 credit hours)
- PSY 6216 Advanced Research Methodology I (3 credit hours)

- IDS 5718 Science and Technology of Dynamic Media (3 credit hours)

## Qualifying Examination

A written test is required covering content of the four core courses. This may be waived if the student is a first or second author of (1) a refereed journal article dealing with modeling and simulation, or (2) a proposal to a major funding agency, external to the candidate and to the candidate's employer that is rated as technically acceptable.

Students in the Modeling and Simulation PhD program must also demonstrate consistent, strong performance in their required core courses, restricted core courses, and focus area corner stone courses. Specifically, students must receive a grade of "B" (3.0 out of 4.0) or better in each required core, restricted core, and focus area corner stone course that appear on their approved program of study. Additionally, students must earn a combined GPA of 3.4 (out of 4.0) in the required core, restricted core and focus area cornerstone courses.

## Candidacy Examination

The Candidacy Examination evaluates the student's preparation to undertake the research in the student's dissertation topic. A student may sit for the Candidacy Examination upon (1) passing the Qualifying Examination; (2) completing all conditions placed as a result thereof; and (3) completing all but six credits or less of the courses prescribed in the plan of study.

The Candidacy Examination is based on the following:

- The Candidacy **Proposal** developed by the student to identify the chosen area of research.
- **Literature Review** on the topic of the dissertation.
- A refereed publication (accepted) related to the dissertation research, which may be a proceedings publication.
- An **Oral Defense** of the candidacy proposal to the dissertation committee.

## Dissertation Committee

Students have the responsibility to select a dissertation adviser from a list of Modeling and Simulation faculty authorized to direct dissertations. The Program Director, assisted by the Program Academic Committee, assists the student and his/



her advisers with committee formation, additions, and deletions. The doctoral committee consists of a minimum of five members. All committee members should hold a doctoral degree and be in fields related to the dissertation topic. At least three members must be regular Modeling and Simulation faculty (one to serve as chair) from at least two colleges. At least one member must be from outside the regular Modeling and Simulation faculty. Non-Modeling and Simulation graduate faculty, adjunct graduate faculty, and off-campus experts may serve on the committee, but not as chair. Only regular Modeling and Simulation faculty may serve as chair. In unusual cases, with approval from the Program Director, two committee members may chair the committee jointly. The UCF College of Graduate Studies has the right to review appointments to advisory committees, place a representative on any advisory committee, or appoint a co-adviser.

All members vote on acceptance or rejection of the dissertation proposal and the final dissertation. The dissertation proposal and final dissertation must be approved with at most one dissenting member of the advisory committee. A student is normally given only one opportunity to pass the final dissertation defense, but the Program Director upon the recommendation of the Dissertation Committee may approve a second attempt.

## Transfer Credits

The doctoral program will allow up to 30 credit hours to be transferred into the program from an earned master's degree, whether from UCF or another institution or to transfer up to 9 hours from graduate credit hours taken elsewhere.

The dissertation is a project which constitutes independent learning conducted under the guidance of a committee chair and at least three other committee members, two of which must be members of the Modeling and Simulation graduate faculty.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive score on the GRE taken within the last five years.
- Résumé.
- Goal statement of purpose.
- Three letters of recommendation.
- Writing sample.

Applications are accepted for the fall and spring terms only.

Selected outstanding applicants who have a GPA of at least 3.4 in the last 60 attempted semester hours of their undergraduate degrees and a very strong GRE score may be considered for direct entrance as doctoral students from their bachelor's degrees. Students meeting these criteria may be admitted into the program with the approval of the Academic Advisory Board.

Modeling and Simulation PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Institute of Simulation and Training  
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# Nursing Practice DNP

## PROGRAM DESCRIPTION

The Doctor of Nursing Practice (DNP) program is designed to prepare nurse clinicians, nurse practitioners, and educators for leadership roles in specialized areas of advanced nursing practice. This program prepares nurses at the highest level of practice for the current health care environment based on a strong scientific foundation for practice; flexibility and emphasis on evidence-based practice, leadership, and organizational analysis; and analysis of practice including completion of the residency project during the capstone clinical residency year.

The objectives of the DNP program are to prepare graduates to:

- Critically analyze complex clinical situations and practice systems.
- Assume leadership roles in the development of clinical practice models, health policy and standards of care.
- Demonstrate advanced diagnostic reasoning skills and clinical judgment through scholarship and nursing practice.
- Analyze the social, economic, political, epidemiological and other scientific data to improve individual, aggregate and population health.
- Demonstrate information fluency and advanced communication skills to lead quality improvement initiatives to improve patient care and health care systems.
- Design, implement, and evaluate comprehensive care to clients within an area of advanced practice specialization.

## CURRICULUM

The Doctor of Nursing Practice curriculum requires a minimum of 45 credit hours beyond the master's degree, including 33 credit hours of core courses, 6 credit hours of residency, and 6 credit hours of an advanced clinical scholarly project. The core courses have been carefully constructed to incorporate the AACN competencies for DNP graduates.

**Total Required Hours for DNP—45 Credit Hours Minimum beyond the Master's Degree.**

Students will take course work corresponding to the eight essential competencies delineated by the American Association of Colleges of Nursing (AACN). The competencies address the following:

- Scientific underpinning for practice
- Organizational and systems leadership for quality improvement and systems thinking
- Clinical scholarship and analytical methods for evidence-based practice
- Information systems/technology and patient care technology for the improvement and transformation of health care
- Health care policy for advocacy in health care
- Inter-professional collaboration for improving patient and population health outcomes
- Clinical prevention and population health for improving the nation's health
- Advanced nursing practice

## Core Courses—33 Credit Hours

The core DNP courses serve to enhance the skill and science base of the graduate and strengthen the focus on research utilization. Safety and efficiency in health care systems is addressed and organizational and policy implications are emphasized within the context of care delivery. An emphasis is placed on evidence-based practice, state-of-the-art interventions and information fluency.

- NGR 6099 Advanced Skills or Elective (3 credit hours)
- NGR 6874 Nursing Environment Management (3 credit hours)
- NGR 7115 Philosophical and Theoretical Foundations of Nursing Science (3 credit hours)
- NGR 7123 Concept Development in Nursing (3 credit hours)
- NGR 7176 Advanced Pharmacology in Advanced Practice Nursing (3 credit hours)
- NGR 7190 Healthcare Systems and Policy (3 credit hours)
- NGR 7642 Epidemiological Principles for APN (3 credit hours)
- NGR 7793 Leadership and Economics in APN (3 credit hours)
- NGR 7671 Advanced Clinical Management for APN (3 credit hours)
- NGR 7748 Advanced Clinical Practice Selective for APN (3 credit hours)
- NGR 7817 Quantitative Methods in Nursing Research I (3 credit hours)

## Residency—6 Credit Hours

The DNP residency will serve to provide an in-depth clinical experience for students. This advanced practicum will provide the opportunity to link policy making with clinical systems, translate research into practice and serve as change agents for health care. The clinical residency experience will be facilitated by an advanced practice expert clinician/teacher.

- NGR 7948 DNP Residency (6 credit hours)

## Advanced Clinical Scholarly Project—6 Credit Hours

An advanced clinical scholarly project will be completed by all students in the DNP program. A scholarly project, derived from clinical practice will be developed in depth with faculty supervision.

- NGR 7974 DNP Project (6 credit hours)

## Progression

Students are required to maintain a 3.0 grade point average. Students who receive a grade of “C” in any course will be reviewed by the DNP Admissions, Progression and Graduation Committee for continuation in the program. Students may not receive more than two “C” grades in the course of their program of study. Grades of “C” or below are not acceptable in doctoral programs in the College of Nursing. Students who do not maintain a 3.0 GPA will be put on probation or dismissed from the program.

## Graduation Requirements

- All course work completed with a minimum grade of “B”
- A satisfactory DNP project
- Clinical performance evaluated at a satisfactory level
- A satisfactory public presentation of the DNP project
- A professional portfolio

An advanced clinical scholarly project will be completed by all students in the DNP program. A scholarly project, derived from clinical practice will be developed in depth with faculty supervision.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions

and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- MSN degree in an APN specialty role (ANP, FNP, PNP, CNS) or a post-MSN certificate (ANP, FNP, PNP, CNS) from an accredited institution.
- Official, competitive GRE score taken within the last five years.
- Licensure as a registered nurse in the state of Florida.
- Licensure and certification as an Advanced Registered Nurse Practitioner (ARNP) in the state of Florida (for out of state students intent to apply for Florida ARNP certification).
- A written essay of no more than 500 words addressing goals for the DNP program and professional practice addressing advanced nursing practice.
- A personal interview with two members of the College of Nursing Doctoral Committee.
- Three professional recommendations describing your ability to be successful in a DNP program. Include at least one clinical reference preferably from an Advanced Practice Nurse and one academic reference preferably from a nursing faculty member from a graduate program evaluating potential for doctoral study.
- Résumé (two-page limit).
- Writing sample.

Before submitting your application, it is recommended that applicants call the College of Nursing Graduate Office (407-823-3079) to speak with a DNP adviser to discuss your goals for doctoral study. It is advantageous to discuss the program before writing the required essay, because the essay must address your goals for doctoral-level preparation for advanced nursing practice.

Students are admitted to the program in the fall for the program of study; however, spring admissions are possible for a revised plan of study.

Admission to the program is competitive, based on evaluations of the applicant’s abilities, past performance, recommendations and match of UCF programs with the applicant’s career goals.

The College of Nursing accepts the most qualified students.

Students may not transfer courses into the program (including those courses taken in nondegree status). Students may petition to transfer course work in excess of 30 hours from their earned master's degree. Students must obtain a UCF Graduate Petition Form from the College of Nursing Graduate Office and submit the completed petition to the College of Nursing Graduate Office for review by the Doctoral Committee.

Nursing Practice DNP	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

## CONTACT INFO

Elizabeth Rash PhD  
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 Program Director  
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 College of Nursing  
 HPA 271

# Nursing PhD

## PROGRAM DESCRIPTION

The doctoral program in Nursing prepares nurse scholars to possess a body of knowledge about theory, processes and methods of inquiry in the discipline of nursing. The program allows students to contribute to disciplinary and interdisciplinary knowledge in nursing and healthcare from the basis of sound conceptual, methodological, and ethical decision-making. As well as adding to the knowledge generation and testing in the nursing care of vulnerable populations, application of innovative technologies in nursing and healthcare, and clinical and executive leadership in healthcare systems and policy.

The program focuses on the following areas:

- Vulnerable populations within Florida's multicultural environment
- Application of innovative technologies to nursing education and clinical care
- Health care systems and policy

## CURRICULUM

The Nursing PhD program requires a minimum of 57 credit hours beyond a master's degree in Nursing. This program requires 15 dissertation credit hours, 15 research credit hours and nine credit hours supporting course work allowing students to gain additional expertise in the area chosen for their dissertation. At least two of the three courses must be taken outside of the College of Nursing.

### Total Required Hours for PhD—57 Credit Hours Minimum beyond the Master's Degree.

Students in the Nursing PhD program must complete all course work with GPA of 3.0 ("B") or better, a professional portfolio, a satisfactory dissertation and defense of dissertation.

## Required Courses

### Foundation Areas—9 Credit Hours

- NGR 7190 Healthcare Systems and Policy (3 credit hours)
- NGR 7661 Healthcare for Vulnerable Populations (3 credit hours)
- NGR 7820 Innovative Technologies in Healthcare (3 credit hours)

### Knowledge Development—9 Credit Hours

- NGR 7115 Philosophical and Theoretical Foundations of Nursing Science (3 credit hours)
- NGR 7123 Concept Development in Nursing (3 credit hours)
- NGR 7939 Dissertation Seminar (3 credit hours)

### Research—15 Credit Hours

- NGR 7815 Qualitative Methods in Nursing Research (3 credit hours)
- NGR 7817 Quantitative Methods for Nursing Research I (3 credit hours)
- NGR 7816 Quantitative Methods for Nursing Research II (3 credit hours)

- NGR 7823 Psychometrics and Measurement for Nursing Research (3 credit hours)
- NGR 7919 Doctoral Research (3 Credit Hours)

## Doctoral Research

The course NGR 7919 Doctoral Research is designed for students to gain research experience with a faculty researcher. Students must obtain permission from the faculty member before registering for this course and complete the College of Nursing doctoral research form. The purpose of this course is for students to have an experience with research other than that of the dissertation. This course is not to be used as a pilot study for the student's dissertation.

## Elective Supporting Courses—9 Credit Hours Minimum

The supporting course work is designed to permit students to gain additional expertise and knowledge in the area chosen for the dissertation. At least two of the three courses must be taken outside of the College of Nursing.

## Dissertation Research—15 Credit Hours Minimum

The dissertation research addresses the design and conduct of research on a specific topic within one of the three foundational areas: vulnerable populations, innovative technologies, or healthcare systems and policy. Students conduct the dissertation in areas of faculty interest and expertise. Students are required to complete at least 15 credit hours of dissertation and are required to register for 3 credit hours of dissertation until they complete the degree requirements.

- NGR 7980 Dissertation Research (15 credit hours)

## Admission to Candidacy and Examinations

The process for candidacy will start the appointment of the dissertation advisory committee. The Candidacy Examination is a Candidacy Paper with both written and oral components. When these are completed successfully, the student becomes a doctoral candidate and is eligible to enroll in dissertation credits. When candidacy status is obtained, the student must enroll in at least three semester credits of dissertation credit each semester

until successful oral defense of the dissertation is made and all graduation requirements are completed. The university requires a minimum of 15 dissertation credits. Post-candidacy status is subject to the rules and regulations of the University of Central Florida Graduate Catalog.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Students are admitted to the program in the fall for the program of study; however, spring admissions are possible for a revised plan of study.

In addition to the general UCF graduate admission requirements, applicants must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A master's or bachelor's degree in nursing from an accredited institution.
- Licensure as a Registered Nurse in the state of Florida. (Does not apply to international applicants).
- Official, competitive GRE score taken within the last five years.
- An essay of no more than 500 words addressing goals for doctoral study related to the College of Nursing and the three areas of focus.
- A personal interview.
- Research interests that match faculty expertise.
- Résumé.
- Three letters of recommendation evaluating potential for doctoral study preferably by nursing instructors, nurse employers or nurses with advanced degrees.

Students may not transfer courses into the program (including those courses taken in nondegree status). Students may petition to transfer course work in excess of 30 hours from their earned master's degree. Students must obtain a UCF Graduate Petition Form from the College of Nursing Graduate Office and submit the completed petition to the College of Nursing Graduate Office for review by the Doctoral Committee.

Please call the College of Nursing Graduate Office (407) 823-3079 to speak with a doctoral adviser to

discuss your goals for doctoral study. It would be very advantageous to discuss the program before you write your essay in the admission application.

Nursing PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

## CONTACT INFO

Jean Kijek PhD  
Associate Dean  
College Coordinator  
ucfnurse@mail.ucf.edu  
Telephone 407-823-2744  
College of Nursing  
Health and Public Affairs 1 220 B

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# Optics PhD

## PROGRAM DESCRIPTION

The Optics PhD program provides the highest-quality education in optical science and engineering, allowing students to conduct scholarly, fundamental, and applied research, while aiding in the development of Florida's and the nation's technology-based industries.

Research activities cover all aspects of optics, photonics, and lasers, and the Center for Research and Education in Optics and Lasers (CREOL) and the Florida Photonics Center of Excellence (FPCE) are integral parts of the College of Optics and Photonics. Current research areas include: linear and nonlinear guided-wave optics and devices, high speed photonic telecommunications, solid state laser development, nonlinear optics, laser-induced damage, quantum-well optoelectronics, photonic information processing, infrared systems, optical diagnostics, optical system design, image analysis, virtual reality, medical imaging, diffractive optics, optical crystal growth and characterization, high intensity lasers, x-ray optics, EUV sources, optical glasses, laser materials processing, free-electron

lasers, and light matter interaction.

The College of Optics and Photonics is the first program to be offered the distinction of a college and to be headed by a dean. The College of Optics and Photonics (COP) has grown rapidly and now has 42 faculty members and faculty with joint appointments, 54 research scientists and 145 graduate students with research activities covering all aspects of optics, photonics, and lasers. Research expenditures are over \$23 million annually, with more than 20 percent of the funding coming from industrial partners, illustrating the effectiveness of the commitment to partnerships that is a foundational value of the COP.

## CURRICULUM

The Optics PhD program requires a minimum 72 credit hours beyond the bachelor's degree, of which more than 50 percent should be at the 6000 level or higher. These hours must be comprised of:

- 45 credit hours of graduate science and engineering course work, satisfying the following requirements:
  - at least 30 credit hours of Optics courses.
  - at least 6 credit hours must be science and engineering graduate laboratory courses.
  - at least 3 credit hours of laboratory hours must be in Optics
  - at least 15 credit hours of Dissertation (OSE 7980)
  - No more than 12 credit hours combined of directed research, doctoral research and independent study, (OSE 6918, 7919, or 6908) may be counted toward the PhD.

## Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.

The Optics PhD program is intended for students with a bachelors or master's degree in Optics, Electrical Engineering, Physics, or closely related fields who wish to pursue a career in research or academia. Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Students are required to pass a qualifying examination, usually taken after 12 months in

the program. About one year after passing the qualifying exam, students must take a candidacy examination, form a dissertation committee, and submit an approved program of study before being admitted to candidacy doctoral status. The PhD core courses are not required, but they have been designed to include a significant portion of the material upon which the qualifying examination is based. Consequently, students are strongly encouraged to include most of these courses in their programs of study.

Additional notes on the curriculum:

- One required Optics laboratory may be waived if the student can demonstrate an equivalent hands-on laboratory experience.
- A maximum of 12 credit hours of combined independent study and directed research credit hours are allowed in the program of study, but they may not be applied toward the course work requirements.
- Up to 30 credit hours of appropriate graduate courses in a master's program from accredited universities may be transferred with approval from the college. Only courses with grades of "B" or better can be transferred.

### **Optics Courses—30 Credit Hours Minimum**

The following courses are approved to meet the course requirements of the program.

#### **Recommended Core Courses**

- OSE 6111 Optical Wave Propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)
- OSE 5203 Fundamentals of Applied Optics (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)

#### **Approved Laboratory Courses**

- OSE 5234L Applied Optics Laboratory (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)
- OSE 6526L Laser Engineering Laboratory (3 credit hours)
- OSE 6615L Optoelectronic Device Fabrication Laboratory (3 credit hours)

- Other graduate science and engineering labs may be taken with college approval.

Any other graduate course with a prefix of OSE will be accepted toward the Optics course requirement. Additionally, the following courses may count toward the Optics course requirement.

- EEL 6564 Statistical Optics with Applications (3 credit hours)
- EMA 5610 Laser Materials Processing (3 credit hours)
- PHY 5455 Modern X-ray Science (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)

### **Dissertation—15 Credit Hours Minimum**

- OSE 7980 - Dissertation Research (15 credit hours)

### **Qualifying Examination**

Before students are eligible to take the candidacy examination, they must pass a written qualifying examination, which for full-time students is normally taken at the end of the first year of graduate study. The purpose of the qualifying exam is for the student to demonstrate mastery of the fundamentals of optics, photonics, and lasers. The exam is administered by the doctoral qualifying examination committee, which consists of several faculty members representing the appropriate disciplines, appointed by the director or designee. The committee's duties include the preparation and grading of the examination material, and it may solicit input from other interested faculty. The exam is a closed book written exam in the general area of electromagnetic foundations of optics, interference, diffraction, coherence, fundamentals of applied optics, optical science, and photonics. Students who do not pass the qualifying examination in two attempts will not continue in the program.

### **Candidacy Examination**

Students are required to successfully complete the candidacy examination before admission to full doctoral status. The purpose of the candidacy exam is for the student to demonstrate his or her readiness for the PhD program through preliminary research work in the chosen field of study. The candidacy exam is comprised of written and oral portions. The exam is administered by the members of the

student's dissertation advisory committee who are members of the Optics faculty. External committee members of the dissertation advisory committee are not appointed until after the student has passed the candidacy exam. The exam is normally taken near the completion of required course work. Students must pass the candidacy exam before registering for doctoral dissertation hours (OSE 7980).

## Dissertation Proposal and Defense

Within one year after passing the general candidacy examination, and after the student has begun research, the student will write a dissertation proposal and present it to the dissertation advisory committee for its approval. The proposal must include the research performed to date and the research planned to complete the dissertation. The committee, which consists of three faculty members from the College of Optics and Photonics and one faculty member from outside the college, must be approved by the director or designee and will meet annually to review the student's progress. The student's advisory committee also administers the dissertation oral defense examination.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**Before completing general UCF graduate admissions requirements, all applicants for programs in the College of Optics and Photonics are recommended to complete the pre-application process. The pre-application is located at [www.creol.ucf.edu/academics/prospective/PreApplication/](http://www.creol.ucf.edu/academics/prospective/PreApplication/).**

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Bachelor's or master's degree in Optics, Electrical Engineering, Physics or closely related discipline
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation
- Goals statement

- Résumé
- Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

Optics PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Associate Dean  
College Coordinator  
[gradprog@creol.ucf.edu](mailto:gradprog@creol.ucf.edu)  
Telephone 407-823-6986  
Optics Academic Programs  
CREOL/Optics 208

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# Physical Therapy DPT

## PROGRAM DESCRIPTION

The mission of the Doctorate in Physical Therapy (DPT) is to educate students to become competent, compassionate, and ethical practitioners in a variety of healthcare settings. Graduates will be highly dedicated professionals with excellent patient care, communication, critical thinking, patient education and advocacy, management and research skills.

### Goals of the Program:

- Strive as a faculty to meet the needs of the changing health care environment, continually improve our skills, and be good role models in all areas of practice
- Prepare physical therapists who demonstrate commitment to their profession through active participation in their communities and strong advocacy for patients
- Inspire physical therapy students throughout the educational process at UCF to be



intellectually aware of their responsibilities as a growing professional in the community

- Contribute to the achievements of faculty and students and produce measurable improvements in higher learning
- Foster an environment of creativity, cultural diversity, and innovation, preparing students to be active leaders in the profession

The DPT program is a three-year (nine consecutive semesters) professional curriculum designed to prepare entry-level therapists to practice in a variety of clinical settings. The professional curriculum is a full-time “lock-step” program with no opportunity to take courses other than those prescribed by the curriculum. The professional program includes clinical practica and internships ranging from six weeks to twelve weeks long. Applicants need to note that one or more of the clinical practica may be assigned at a site sufficiently removed from the Orlando area to require the student to provide transportation and housing. Students who successfully complete the course of study will be granted the DPT degree in Physical Therapy, enabling the graduate to seek membership in the American Physical Therapy Association and to qualify to take the national board examination leading to state licensure as a Physical Therapist. UCF’s Program in Physical Therapy is fully accredited by the Commission on Accreditation of Physical Therapy Education.

## CURRICULUM

The DPT is a full-time program requiring completion of 112 credits past the bachelor’s degree. The course work is taken in a prescribed sequence over nine semesters as provided here and all course work is required. The program requires a total of 32 weeks of full-time clinical training. During the clinical affiliations, students work under the direct supervision of a licensed physical therapist.

### **Total Hours Required for DPT—112 Credit Hours Minimum Beyond the Bachelor’s Degree.**

All students in the Doctor of Physical Therapy (DPT) program are required to engage in independent learning, a process in which individuals take the initiative, with or without help of others to attain knowledge, skills, and professional behaviors. Tangible assignments, such as “Grand Rounds” (i.e.,

patient case studies), research projects, scholarly reviews, and full-time clinical practica mandated by the program, give students ample opportunities to develop and demonstrate independent learning skills as a result of self-inquiry and group dialogue.

## Program Prerequisites

Before application to the program, each of the following prerequisite undergraduate courses must be completed with a minimum grade of “C” and a GPA grade point average of at least 3.0 in the prerequisites.

- General Psychology (3 credits) - PSY 2012 or equivalent\*
- Developmental Psychology (3 credits) - FAD 2230, DEP 2004, DEP 5057 or equivalent\*
- Statistical Methods (science majors) (3 credits) - STA 2023 or equivalent\*

### **All of the following require labs:**

- Biology (8 credits) BSC 2010C, BSC 2011C or Anatomy and Physiology (8 credits) ZOO 3733C, PCB 3703C
- Chemistry (8 credits) - CHM 2045C, CHM 2046C (or higher) or equivalent\*
- Physics (8 credits) - PHY 2053C, PHY 2054C (or higher) or equivalent\*

\*Refer to course descriptions in the UCF Undergraduate Catalog to determine course equivalency.

## Required Coursework

### **Summer Term 1 (17 Credit Hours)**

- PHT 5003 Foundations of Physical Therapy I (2 credit hours)
- PHT 5125 Clinical Kinesiology (2 credit hours)
- PHT 5125L Clinical Kinesiology Lab (2 credit hours)
- PHT 6115C Gross Anatomy/Neuroscience I (6 credit hours)
- PHT 6156C Applied Human Physiology for Health Science (5 credit hours)

### **Fall Term 1 (14 Credit Hours)**

- PHT 5240 Physical Assessment (1 credit hour)
- PHT 5240L Physical Assessment Lab (2 credit hours)
- PHT 5260 Patient Care Skills (2 credit hours)
- PHT 5260L Patient Care Skills Lab (1 credit hour)

- PHT 6118C Gross Anatomy/Neuroscience II (6 credit hours)
- PHT 6606 Research Methods in Physical Therapy (2 credit hours)

### **Spring Term 1 (14 Credit Hours)**

- PHT 5218 Theories and Procedures I (2 credit hours)
- PHT 5218L Theories and Procedures I Lab (1 credit hour)
- PHT 5241 Therapeutic Exercises I (2 credit hours)
- PHT 5241L Therapeutic Exercise Lab I (2 credit hours)
- PHT 6242 Orthopedic Physical Therapy (2 credit hours)
- PHT 6242L Orthopedic Physical Therapy Lab (1 credit hour)
- PHT 6306 Pathology/Pharmacology (4 credit hours)

### **Summer Term 2 (12 Credit Hours)**

- PHT 5718 Neurological Physical Therapy (2 credit hours)
- PHT 5718L Neurological Physical Therapy Lab (1 credit hour)
- PHT 6219 Theories and Procedures II (2 credit hours)
- PHT 6219L Theories and Procedures II Lab (1 credit hour)
- PHT 6245 Therapeutic Exercise II (3 credit hours)
- PHT 6245L Therapeutic Exercise II Lab (1 credit hour)
- PHT 6716C Advanced Orthopedic Physical Therapy I (2 credit hours)

### **Fall Term 2 (16 Credit Hours)**

- PHT 6521 Management of Physical Therapy Services (3 credit hours)
- PHT 6322C Pediatric Physical Therapy (3 credit hours)
- PHT 6381C Cardiopulmonary Physical Therapy (2 credit hours)
- PHT 6XXXC Radiology/Imaging for Physical Therapy (3 credit hours)
- PHT 6805C Clinical Education I (3 credit hours)
- PHT 7722C Physical Therapy Integration I (2 credit hours)

### **Spring Term 2 (13 Credit Hours)**

- PHT 6374 Gerontology in Physical Therapy (2 credit hours)

- PHT 6618 Research Applications in Physical Therapy (2 credit hours)
- PHT 6719 Advanced Neurological Physical Therapy II (2 credit hours)
- PHT 6719L Advanced Neurological Physical Therapy Lab II (1 credit hour)
- PHT 6723C Physical Therapy Integration II (2 credit hours)
- PHC 6160 Health Care Finance (3 credit hours)
- PHT 6938 Special Topics: Wound Care and Professional Issues (1 credit hour)

### **Summer Term 3 (6 Credit Hours)**

- PHT 7822C Advanced Clinical Education I (6 credit hours)

### **Fall Term 3 (9 Credit Hours)**

- PHT 6823 Advanced Clinical Education II (3 credit hours)
- PHT 7XXXC Primary Care for Physical Therapy (2 credit hours)
- PHT 7XXXC Advanced Orthopedic Physical Therapy II (1 credit hour)
- PHT 7XXXC Advanced Neurological Physical Therapy II (1 credit hour)
- PHT 7XXXC Advanced Gerontology in Physical Therapy I (1 credit hour)
- PHT 7XXXC Advanced Pediatric Physical Therapy I (1 credit hour)

### **Spring Term 3 (11 Credit Hours)**

- PHT 5005 Foundations of Physical Therapy II (2 credit hours)
- HSC 6636 Issues and Trends in Health Professions (3 credit hours)
- PHT 7XXX Capstone Project in Physical Therapy (3 credit hours)
- PHT 7XXX Advanced Clinical Education III (3 credit hours)

## **Examinations**

This program requires a final comprehensive examination on course work in the program of study. In addition, comprehensive examinations may be required at the end of each year of the program. Participation in a research project may also be required of each student.

“Grand Rounds” (i.e., patient case studies), research projects, scholarly reviews, and full-time clinical practica are mandated by the program and provide important independent learning experiences.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Competitive GPA or higher and no grade less than “C”.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation, including one from a licensed physical therapist.
- Personal statement.
- Résumé.
- Earn and submit documentation of a minimum of thirty hours of volunteer/work experience under the direct supervision of a licensed physical therapist in the field of physical therapy.
- Participate in an on-campus interview (by invitation only).

Admissions decisions will be made only once per academic year. Incoming students will begin the program in the summer semester.

Approximately 34 students are admitted to the program each year. The demographics of the class that entered in 2007 include an average age of 24 years and an overall grade point average of 3.4 (on a 4.0 scale) with competitive GRE scores.

Admission to the program is competitive, based on the above criteria, the applicant’s abilities, past academic performance, work experience and match of the applicant with the program’s mission and goals. Meeting minimum qualifications does not constitute an interview or admission to the program in Physical Therapy.

Physical Therapy DPT	Fall Priority	Fall	Spring	Summer
Domestic Applicants				Dec 15

Physical Therapy DPT	Fall Priority	Fall	Spring	Summer
International Applicants				Nov 1
International Transfer Applicants				Dec 15

## CONTACT INFO

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 Program Director  
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 Department of Health Professions  
 Health and Public Affairs 1 256

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## Physics PhD

### PROGRAM DESCRIPTION

The doctoral program in Physics offers research opportunities in condensed matter physics, nanostructure devices, surface science, optical physics, complex systems, biophysics, atomic and molecular physics, and planetary/space science. The department is characterized by rapid growth and dynamic partnerships. This activity, fueled by the university’s focus on industrial partnerships and research, strengthens the department and provides research and employment opportunities for our students.

### CURRICULUM

The Physics PhD program requires a total of 72 credit hours for completion. A specific set of eight required core courses (24 hours), five electives (15 hours), and a minimum of 15 hours of dissertation are part of those 72 hours. Electives are informally organized into specializations. A different mix of electives may be selected by the student in consultation with the student’s adviser. The remaining 18 hours may consist of appropriate directed research and elective courses. In addition, each student is required to participate in the Physics Colloquium/Seminar program. At least 6 credit hours of elective course work must be taken outside

of the department. Courses must be selected so that at least one-half of the required courses are taken at the 6000 level or higher. No more than 6 credit hours of independent study may be credited toward the Doctor of Philosophy degree.

### **Total Hours Required for PhD—72 Credit Hours Minimum beyond the Bachelors Degree; 42 Credit Hours Minimum beyond the Master's Degree**

#### **Required Core Courses—24 Credit Hours**

All students are required to take the core courses.

- PHY 5606 Quantum Mechanics I (3 credit hours)
- PHY 6624 Quantum Mechanics II (3 credit hours)
- PHY 5346 Electrodynamics I (3 credit hours)
- PHY 6347 Electrodynamics II (3 credit hours)
- PHZ 5156 Computational Physics (3 credit hours)
- PHY 5846C Methods of Experimental Physics (3 credit hours)
- PHY 5524 Statistical Physics (3 credit hours)
- PHY 6939 Physics Research Seminar (1 credit hour, taken 3 times)

#### **Elective Courses—33 Credit Hours**

- Elective and research courses are determined by the students chosen specialization.

#### **General Physics Specialization**

The General Physics Specialization emphasizes strong preparation in physics fundamentals. It is intended to prepare students for careers in theoretical physics teaching at the college level. A number of active research programs exist in the department to accommodate such students.

#### **Recommended Courses**

- PHY 6246 Classical Mechanics (3 credit hours)
- PHY 6667 Advanced Quantum Mechanics (3 credit hours)
- PHY 5933 Selected Topics in Biophysics and Macromolecules
- PHZ 6426 Condensed Matter Physics I (3 credit hours)
- PHZ 6428 Condensed Matter Physics II (3 credit hours)

- PHY 6667 Quantum Field Theory I (3 credit hours)
- PHY 7669 Quantum Field Theory II (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)
- PHY 5650 Introduction to Quantum Computation (3 credit hours)
- PHZ 5304 Nuclear and Particle Physics (3 credit hours)
- PHZ 6234 Atomic Physics (3 credit hours)
- PHY 6420 First Principles Computational Methods in Condensed Matter Physics and Materials Science (3 credit hours)
- PHY 6938 Theory and Computation of Molecular Wave Functions (3 credit hours)
- PHY 6938 Selected Topics in Scattering Theory (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- OSE 6347 Quantum Optics (3 credit hours)
- PHY 7919 Directed Research
- Other courses from Physics, Math, Optics, Materials Science, Engineering.

#### **Condensed Matter Physics Specialization**

The Condensed Matter Physics Specialization is intended to prepare students for careers in materials physics, nanoscale science and technology, semiconductors, and soft condensed matter physics. It emphasizes strong experimental preparation with hands-on courses in advanced materials characterization and processing instrumentation. Related research programs at UCF include magnetic nanostructures, soft condensed matter, electronic and optoelectronic devices, and nanoscale characterization.

#### **Recommended Courses**

- PHZ 6426 Condensed Matter Physics I (3 credit hours)
- PHZ 6428 Condensed Matter Physics II (3 credit hours)
- PHY 6420 First Principles Computational Methods in Condensed Matter Physics and Materials Science (3 credit hours)
- PHZ 5437 Nanoscale Surface Physics (3 credit hours)
- PHZ 5432 Introduction to Soft Condensed Matter Physics (3 credit hours)
- PHZ 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)
- PHY 5650 Introduction to Quantum Computation (3 credit hours)

- PHY 6667 Quantum Field Theory I (3 credit hours)
- PHY 7669 Quantum Field Theory II (3 credit hours)
- PHY 6938 Theory and Computation of Molecular Wave Functions (3 credit hours)
- PHY 6938 Selected Topics in Scattering Theory (3 credit hours)
- Two “studio lab” courses: PHY 5140C Ion-solid interactions (3 credit hours) and PHZ 5425C Electron Solid Interactions (3 credit hours)
- One approved elective selected from Materials Science, Physics, Optical Science and Engineering, Electrical Engineering, or Industrial Chemistry
- PHY 7919 Directed Research

### Optical Physics Specialization

The Optics Specialization coordinator is David Hagan, PhD, College of Optics and Photonics. Students are recommended to take at least one of the following courses.

- OSE 6111 Optical wave propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)

Select at least one of the following laboratory courses.

- OSE 6526L Laser Engineering Laboratory (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)

The remaining courses (up to three) may be selected from other graduate courses in Optics see [www.creol.ucf.edu](http://www.creol.ucf.edu).

### Dissertation—15 Credit Hours

#### Minimum

- PHY 7980 Dissertation Research (15 credit hours minimum)

All students require a minimum of 15 credit hours of dissertation prepared in consultation with a dissertation adviser. The fifteen-page written proposal is presented orally to the student’s dissertation committee within one year after the candidacy exam. The final oral defense of the dissertation is administered by the student’s dissertation committee following completion of a written dissertation describing the student’s research.

### Examinations

**Placement Exam**—A Physics field test is taken during the first year, for advisement purposes only.

**Candidacy Exam**—Part 1 is a written exam covering the common core. Part 2 is an oral exam based on upper-division undergraduate material. The exam is taken at the end of the second year. After passing the candidacy examination, the student can register for Doctoral Research (PHY 7919). Before passing the candidacy, research credit can be earned as Directed Research (PHY 7919). Two attempts at the candidacy exam are permitted. The second attempt must happen within one year after failing the first. Students are only allowed to register for dissertation hours (PHY 7980) after presenting the dissertation proposal.

The Physics PhD program requires a doctoral dissertation.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- The Physics Subject Test of the GRE is recommended, but not required.
- Students entering the Physics graduate program with regular status are normally expected to have completed course work generally required for a bachelor’s degree in physics, including mechanics, electricity and magnetism, thermal and statistical physics, and quantum mechanics.
- Three letters of recommendation.
- Statement of goals.
- Résumé.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this

program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Physics PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 15	Nov 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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# Clinical Psychology PhD

## PROGRAM DESCRIPTION

The Clinical Psychology PhD program emphasizes the ability of psychologists to design, conduct, and apply clinical research in administration, treatment, teaching, and supervision. The program is patterned on the scientist-practitioner model of the American Psychological Association (APA). The Doctoral Program in Clinical Psychology is also fully accredited by the American Psychological Association.

The advent of managed care has resulted in significant changes in the mental health care delivery system and the role of clinical psychologists in that system. Psychologists will be utilized less for the delivery of psychotherapy and more for performing professional duties such as administration, development of programmatic treatments, program evaluation, supervision, and research. Thus, there is a need to change the training for the professional roles of the clinical psychologist of the twenty-first century. The

Clinical Psychology PhD is designed to respond to these changing roles by inclusion of unique, niche course work and practica in the areas of administration, supervision, treatment development, and teaching. In combination with these unique emphases, traditional training in research methods, experimental psychology, psychotherapy and psychological assessment prepares students for their careers in the changing mental health care field.

Consistent with the mission of a major metropolitan university, the Clinical Psychology PhD program at UCF takes advantage of, and builds upon, a multitude of community partnerships. One specific example of programmatic efforts to develop partnerships with community agencies is our extensive partnership with public and private health service delivery resources in the central Florida area who participate as externship training sites.

## CURRICULUM

The Clinical Psychology PhD is designed to be a full-time program, with some summer enrollment expected. There are a total of 105 semester hours of courses, practica, and research requirements in the program. Courses are presented in sequential fashion and students entering with a baccalaureate degree must earn a master's degree in route to the PhD. Students who enter with a master's degree must complete at least 75 semester hours at UCF. A dissertation which represents a significant contribution to the discipline is required. Successful completion of the Qualifying and Comprehensive Examination is required to be admitted into candidacy and prior to initiation of dissertation research.

### **Total Hours Required for PhD—105 Credit Hours Minimum beyond the Bachelor's Degree; 75 Credit Hours Minimum beyond the Master's Degree.**

This is a nonterminal master's degree available only to students in the Clinical Psychology PhD program.

### **Psychology Foundation Courses—15 Credit Hours**

- DEP 5057 Developmental Psychology (3 credit hours)

- SOP 5059 Advanced Social Psychology (3 credit hours)
- PSY 5605 History and Systems of Psychology (3 credit hours)
- PSB 5005 Physiological Psychology (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)

### Research Courses—19 Credit Hours

- PSY 6216 Advanced Research Methodology I (4 credit hours)
- PSY 6217 Advanced Research Methodology II (4 credit hours)
- PSY 6219C Advanced Research Methods III (4 credit hours)
- PSY 6940C Research Practicum (1 credit hour)
- PSY 6971 Thesis (6 credit hours)

### Clinical Courses—38 Credit Hours

- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 7446C Child Psychological Assessment (3 credit hours)
- CLP 7447C Adult Psychological Assessment (3 credit hours)
- CLP 6195C Introduction to Psychotherapy (3 credit hours)
- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- CLP 7623 Ethical and Professional Issues in Clinical Psychology (2 credit hours)
- CLP 6461 Cognitive Behavioral Therapy (3 credit hours)
- CLP 7943C Clinical Practicum (taken 4 times at 3 hours; 12 credit hours)
- CLP 6949 Pre-doctoral Internship (taken 3 times at 2 credit hours; 6 credit hours)

### Unique/Niche Courses—12 Credit Hours

- EXP 6939 Teaching Seminar (3 credit hours)
- CLP 6491C Treatment Development (3 credit hours)
- CLP 6944 Clinical Supervision Seminar/Practicum (3 credit hours)
- PSY 6933 Administration Seminar/Practicum (3 credit hours)

### Electives—6 Credit Hours

- CLP 6459C Human Sexuality, Marriage and Sex Therapies (3 credit hours)
- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)

- CLP 6181 Psychological Theories of Substance Abuse Treatment(3 credit hours)
- CLP 6457C Group Psychotherapy (3 credit hours)
- CLP 6476 Developmental Psychopathology (3 credit hours)
- PSY 5937 Special Topics: Eating Disorders Seminar (3 credit hours)

### Dissertation—15 Credit Hours

- PSY 7980 - Doctoral Dissertation (15 credit hours)

### Quality/Comprehensive Doctoral Examinations

#### Domain A: Research (required)

- Theoretical or Review Article, or
- Empirical Article

#### Domain B: Government Proposals/Policy

- Grant Proposal, or
- Mental Health Policy/Administration

#### Domain C: Teaching

- Undergraduate Instructor Experience, or
- Professional Presentation Experience

#### Domain D: Clinical Practice/Consultation

- Comprehensive Case Presentation, or
- Program Development (Rx/Prevention)

**Purpose**—The purpose of the qualifying and comprehensive examination is to develop and assess competency of professional behaviors in doctoral-level graduate students in the Clinical Psychology program that are consistent with the program's professional training goals. These goals include but are not limited to the development and demonstration of skills and abilities that enable graduating students to (a) conduct and publish independent empirical research; (b) competently serve as innovative teachers/instructors in colleges, universities, and medical schools, and as presenters at local, regional, national, and international professional conferences; (c) prepare/review grants and develop knowledge and expertise in the area of administration and policies/legislation relevant to mental health issues; and (d) be expertly trained, empirically oriented clinicians capable of designing, implementing, and assessing programs concerned

with mental health and mental health delivery broadly defined.

### **Requirements, Rationale, and Objectives—**

Successful completion of qualifying and comprehensive examination requirements reflects the program's desire to ensure overall breadth of training in the field of Clinical Psychology that is complemented by individually tailored professional training experiences and competencies consistent with a student's professional career goals. The four professional domains outlined above are consistent with this intent. All students are required to complete the Research domain owing to the importance and centrality of research competency to the PhD degree in Clinical Psychology. Two of the other three professional competency domains must be fulfilled to complete qualifying/comprehensive examination requirements. Students are free to select any two of the three domains (Teaching, Government Proposals/Policy, Clinical Practice/Consultation) and are expected to discuss possible selections with their major professor/faculty adviser prior to formalizing their choices. Choice of domain is expected to reflect individual professional training goals and the desire for additional knowledge and expertise in a selected area. All competency domains contain two options, and students are free to select either option (see options "a" and "b" under each domain in above matrix) in consultation with their faculty adviser.

The American Psychological Association requires that students be evaluated at least annually, and provide written feedback to students. Because clinical psychology involves the provision of mental health services to the public, special care must be taken to ensure that students possess the requisite interpersonal sensitivity and skill. As a result, evaluation procedures within this track will focus not only on academic performance but also on: clinical proficiency; ethical and professional conduct; response to supervision; interpersonal behavior; and intrapersonal functioning. The Clinical Psychology Committee reserves the right to drop from the program students who continue to exhibit serious difficulties in these behavioral domains and do not respond to feedback and efforts at remediation.

## **MASTER OF SCIENCE IN CLINICAL PSYCHOLOGY**

Students enrolled in the Clinical Psychology PhD

earn a Master of Science in Clinical Psychology en route to their doctorate unless they are admitted with an acceptable master's degree.

As befits the nature of graduate training and the pursuit of a doctoral degree, graduate students in clinical psychology are expected to engage in independent learning throughout their graduate career. The completion of the masters thesis and the doctoral dissertation are two examples of independent learning in which all graduate students participate. In addition, depending upon their career goals, other experiences such as directed readings or additional research projects may be undertaken by the students.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must have a bachelor's or master's degree in Psychology or another allied area and completion of a minimum 15 semester hours of undergraduate psychology courses prior to matriculation. Competitive students will have completed courses in the following areas: abnormal psychology, developmental (lifespan preferred) or child psychology, personality theories, learning, physiological psychology, and courses in research methods and statistics.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Evidence of successful completion of undergraduate course work in statistics and general areas of psychology.
- Curriculum Vita.
- Three letters of reference, with at least two furnished by college or university professors who are acquainted with the applicant.
- A clear statement concerning the type of research you wish to pursue as a graduate student and the clinical faculty member you



believe would be best suited to serve as your major professor and mentor.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Due to the competitive nature of the application process, strong candidates are likely to meet criteria that are more stringent than those listed here. Strong candidates are also likely to have both research and fieldwork experience. A department admissions committee reviews the applicants' credentials and may invite a group of candidates for an interview. Final selection is based on both submitted credentials and the interview, if held.

In 2007, the Doctoral Program in Clinical Psychology received over 150 applications for admission, but only a total of seven students entered the PhD program. Accepted students had, on average, between 1.5 and 2 years prior research experience and were well matched with the faculty's research and training interests.

Previous graduate work will be considered on a case-by-case basis (including acceptance of a previously completed master's thesis). Applicants must have at least a bachelor's degree with a major in psychology or a bachelor's degree and completion of undergraduate or graduate courses in statistics/research methods, and six additional upper-division courses in core content areas of psychology (i.e., personality theories, abnormal psychology, learning, physiological psychology, developmental psychology, and social psychology).

## CONTACT INFO

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PSY 301E

# Applied Experimental and Human Factors Psychology PhD

## PROGRAM DESCRIPTION

The PhD program in Applied Experimental and Human Factors Psychology includes classroom studies and a variety of research, consulting, and internship opportunities. The program is accredited by the Human Factors and Ergonomics Society, and patterned on the scientist-practitioner model of the American Psychological Association (APA). It adheres to guidelines established by the committee for Education and Training of APA's Division 21 (Applied Experimental and Engineering Psychology).

Human Factors is an approach to practice and design focusing on the interaction between humans and the environment. It utilizes research, theory, and knowledge of human behavior, capabilities, and limitations to add the "human" into the scientific equation and make life easier, safer, and more enjoyable. The program's mission is to develop the capacity to design, conduct, and apply human factors research in a variety of professional settings.

Students learn about the content and techniques of human factors psychology—including statistical and quantitative procedures, experimental design, survey methods, computer techniques, and other research methodologies. Students select a concentration area within the Applied Experimental and Human Factors Psychology program, which may be in human-computer interaction, human-machine-environment interface, human performance, human factors in simulation and training, or other areas of interest with the adviser's authorization.

Once all course requirements have been fulfilled, students demonstrate their critical thinking skills by undergoing candidacy examinations and completing a dissertation representing a significant research contribution to the field.

## CURRICULUM

For students who enter with a baccalaureate degree, the Applied Experimental and Human Factors PhD program requires a minimum of 93 credit hours,

and students may earn the MA degree in route to the PhD by completing all of the requirements of the PhD except for dissertation. For students who already have a master's degree in Psychology, the MA is not available. Students who enter with a master's degree in psychology will be allowed to apply up to 30 hours of graduate course work to the doctoral program with approval of the program faculty, and will also be required to complete a minimum of 60 semester hours at UCF.

### **Total Hours Required for PhD— 93 Credit Hours Minimum beyond the Bachelor's Degree; 63 Credit Hours Minimum beyond the Master's Degree.**

#### **Required Courses—54 Credit Hours**

- EIN 5248C Ergonomics (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- EXP 5256 Human Factors I (3 credit hours)
- EXP 6257 Human Factors II (3 credit hours)
- EXP 6258 Human Factors III (3 credit hours)
- EXP 5208 Sensation and Perception (3 credit hours)
- EXP 6116 Visual Performance (3 credit hours)
- EXP 6255 Human Performance (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)
- EXP 6541 Advanced Human-Computer Interaction (3 credit hours)
- EXP 7089 Human Factors Professional Issues (3 credit hours)
- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- PSB 5005 Physiological Psychology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- PSY 6217 Advanced Research Methodology II (4 credit hours)
- PSY 6219C Advanced Research Methods III (4 credit hours)
- SOP 5059 Advanced Social Psychology (3 credit hours)

#### **Electives—18 Credit Hours**

Students should choose electives in concentrated course groupings: for example, human-machine systems, performance measurement and evaluation, or simulation and training. Other elective course

groupings may be developed for the student's specific interests.

- DEP 5057 Developmental Psychology (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EXP 5254 Human Factors and Aging (3 credit hours)
- PPE 5055 Personality Theories (3 credit hours)
- INP 5825 Human-Computer Interface (HCI) Design: A Team Approach (3 credit hours)

#### **Required Internship—6 Credit Hours**

- EXP 6945 Human Factors Internship (6 credit hours; to be completed sometime during the last two years of program)

#### **Dissertation—15 Credit Hours**

- PSY 7980 Doctoral Dissertation (15 credit hours)

### **Quality/Comprehensive Doctoral Examinations**

#### **Domain 1: Research**

- Published/Publishable Article (1st Author)

#### **Domain 2: Teaching/Professional Presentations**

- Undergraduate Instructor Experience, or
- Professional Presentation Experience

#### **Domain 3: Grant Proposal**

- Grant Proposal

#### **Domain 4: Professional Experience**

- Submit an Article to EID (Ergonomics In Design), or
- Patent, or
- Consulting, or
- Design Project, or
- Internship

#### **Domain 5: Research Methods/Critique**

- In Class Test Administration Offered in Spring, or
- In Class Test Administration Offered in Fall

**Purpose**—The purpose of the qualifying and comprehensive examination is to develop and assess competency of professional behaviors in doctoral-level graduate students in the Applied Experimental and Human Factors Psychology program that are consistent with the program's professional training

goals. These goals include but are not limited to the development and demonstration of skills and abilities that enable graduate students in (1) Research; (2) competently serve as innovative teachers/instructors in colleges and universities, and as presenters at local, regional, national, and international professional conferences; (3) prepare/review grants; (4) Professional Experience, and (5) Research Methods/Critique.

#### **Requirements, Rationale, and Objectives—**

Successful completion of qualifying and comprehensive examination requirements reflects the program's desire to ensure overall breadth of training in the field of Applied Experimental and Human Factors Psychology that is complemented by individually tailored professional training experiences and competencies consistent with a student's professional career goals. The five professional domains outlined above are consistent with this intent. Students are required to complete all domains. The student must meet all domain requirements during his or her tenure at UCF. Work completed outside the program will not be considered for domain completion. Some competency domains contain options, and students are free to select any option (see options under each domain in above matrix) in consultation with their faculty advisers.

- Students fulfill the **Research** domain by submitting an article to a refereed journal. Students must be first or solo author on empirical research that is either published or publishable in a peer-reviewed journal. If the student does not receive word on journal submission by 6 months **or** if article is rejected, the faculty committee will review the student's work and determine if it fulfills the requirement.
- Fulfillment of this component is intended to (a) complement the student's graduate level course work in research methods, design, statistics, and on-going research practica, (b) hone conceptual and professional writing skills related to publishing findings in scholarly journals, (c) encourage students to submit completed scholarly works to journals for peer review, and (d) provide students with the opportunity to receive and react to comments offered by professional journal reviewers.
- Fulfillment of the **Teaching/ Professional Presentations** domain requires first that all students complete the UCF College of Graduate Studies 2-day GTA Training session.

In addition, students need to either serve as instructor of record for an undergraduate class at UCF or complete 5 formal presentations. If the student opts for Instructor of Record of an undergraduate course, the student must do the following: Submit a syllabus, lecture notes, examinations, two course evaluations (mid and end-of-semester), as well as written feedback from the student's major professor or members of the student's doctoral committee who directly observed or viewed videotapes of at least three lectures. If the student opts to conduct professional presentations, that student must complete 5 presentations where he or she is an author and is also the primary presenter. Professional presentations do not include poster presentations or classroom presentations.

- Fulfillment of the traditional **Teaching** domain is intended to provide students with (a) additional training and opportunities to develop instructional skills consistent with university level instruction, (b) the opportunity to receive and react to constructive comments concerning their developing instructional skills, (c) additional opportunities to learn and develop expertise in using newly developed technology and methods relevant to university level instruction (e.g., active learning groups, computer assisted technology, software programs that facilitate and complement traditional instructional activities), and (d) additional expertise in select areas of psychology to prepare them for future professional instructional opportunities following graduation from the University. The **alternative option** under this domain is intended to encourage students to engage in research studies beyond those required by the program and to present their findings at professional meetings. Fulfillment of this requirement is expected to promote research involvement throughout graduate training and promote student competency in (a) developing written submissions of completed empirical works, (b) oral presentations skills with professional audiences, (c) learning and using innovative technology relevant to paper/poster presentations, and (d) receiving and reacting to constructive comments offered by professionals.
- Fulfillment of this domain requires each student to submit an independent grant application that he or she has initiated. The grant application must be submitted to a funding agency. If the

grant is not awarded, its acceptability to fulfill the domain's requirement will be reviewed by the HF faculty committee.

- Fulfillment of the **Grant/Proposals** domain is intended to (a) provide students with additional training and opportunities to critically review a specific area of empirical research related to applied experimental and human factors psychology, (b) hone conceptual and professional writing skills related to submitting grant applications to private and/or public granting agencies, (c) provide students with an opportunity to interact with department and university grant support facilities, (d) encourage extra-department financial support for conducting empirical studies (e.g., federal and private awards for dissertation research), and (e) provide students with an opportunity to receive and react to grant reviewer comments.
- Fulfillment of the **Professional Experience** domain requires students to engage in professional experience that has an end product that can be evaluated by the HF Faculty committee by doing one of the following: a) Internship (3 months long and consists of 480 hours), b) Submit an article to EID (Ergonomics in Design) or comparable publication [note: article submission cannot be used to meet Domain 1], or c) Consulting or completing a design project that has been pre-approved by the HF Faculty committee.
- Fulfillment of the **Research Methods** domain requires all students to take an in-class exam administered in either the Fall or Spring semester of each year.

### Procedures and Time Guidelines for Completing the Comprehensive Examination

Students admitted to the PhD Applied Experimental and Human Factors Program will complete all of the five professional activity domain options (Research, Teaching/Professional Presentations, Grant Proposals, Professional Experience, and Research Methods/Critique) to fulfill the requirements of the comprehensive exams. Students are strongly encouraged to discuss their preferences and planned course for fulfilling the examination requirements with their academic advisers. Students admitted to the PhD Applied Experimental and Human Factors Program will not be able to use previous work completed at any institution other

than the AEHF PhD program at the University of Central Florida (UCF) to fulfill the requirements.

Successful completion of the comprehensive examination criteria is expected within seven years, and must be completed before proposing the dissertation. Each student's comprehensive examination committee (which may be identical to the dissertation committee) will determine whether the student has successfully fulfilled the requirements of the comprehensive examination based on written grading procedures to be outlined by the AEHF faculty. A written summary of the results and the student's Professional Activity Domain dossier will be forwarded to the Applied Experimental and Human Factors Program faculty for review and final approval. The Applied Experimental and Human Factors Program faculty will review each submitted dossier within a three-week time interval. The Director of the Applied Experimental and Human Factors Program will notify students in writing following the successful completion of comprehensive examination requirements. Students may formally propose their dissertation following written notification that they have completed the comprehensive examination requirements.

### Mathematics and Computer Skills

Doctoral students must also demonstrate graduation proficiency in both mathematics (equivalent to first-level calculus) and computer skills (equivalent to a programming language beyond BASIC).

## MASTER OF ARTS IN APPLIED EXPERIMENTAL AND HUMAN FACTORS PSYCHOLOGY

Students enrolled in the Applied Experimental and Human Factors (AEHF) PhD track may elect to earn a Master of Arts in AEHF Psychology

en route to their doctorate. This is a nonterminal master's degree available only to students in the AEHF Psychology PhD track.

### Additional Program Requirements

Other program requirements, including research productivity, are detailed in the Applied Experimental and Human Factors Psychology Graduate Student Handbook.

Given the nature of graduate training and the pursuit of a doctoral degree, graduate students in Applied Experimental and Human Factors Psychology are required to become involved in independent learning throughout their graduate careers. The obtaining of the master's degree on route to the doctoral degree and the doctoral dissertation are examples of independent learning in which all graduate students participate. In addition, the comprehensive evaluation activities which include passing a research methods examination, teaching, research with publishing, and applied experience are required of all graduate students. Depending upon their career goals, other experiences such as directed readings or additional research projects may be undertaken by the students.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Degree(s) should be in psychology or an allied area.
- Evidence of successful completion of undergraduate courses in statistics and general areas of experimental psychology.
- Résumé or Curriculum Vita.
- A clear statement concerning the professional background, the type of research you wish to pursue as a graduate student and the faculty member you believe would be best suited to serve as your major professor and mentor.
- Three letters of reference, with at least two furnished by college or university professors who are acquainted with the applicant.

Students are not normally admitted to the program without having completed a minimum amount of basic preparation in content related to experimental psychology. This preparation is judged on an individual basis but typically consists of at least 18 semester hours in the following:

- Courses in research methods, computer applications, and statistical methods.
- General experimental psychology courses, e.g., learning, physiological, perception, human learning, cognition, motivation, and measurement.

Applicants are evaluated for program prerequisites and advised of any need for additional preparation. Previous graduate work is evaluated for credit on a case-by-case basis.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree. Admission criteria are more stringent because of the competitiveness of the application process.

## CONTACT INFO

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 PSY 301G

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# Industrial and Organizational Psychology PhD

## PROGRAM DESCRIPTION

The Industrial and Organizational Psychology PhD program develops competency through research and training for the application of psychological principles to organizations. The degree is patterned on the scientist-practitioner model of the American Psychological Association (APA).

Program graduates are involved in many issues of critical importance to society, including fairness in the selection and treatment of employees, the creation of work environments that maximize the satisfaction and productivity of employees, and the study of technological influences on human performance.

The doctoral program provides students with training consistent with the scientist-practitioner model. A key assumption of the program is that every graduate must be a highly competent scientist who can contribute to both the science and practice of the discipline.

To view our Industrial and Organizational Psychology Doctoral Program Handbook, please visit [www.psych.ucf.edu/graduate\\_degrees\\_iophd.php](http://www.psych.ucf.edu/graduate_degrees_iophd.php).

## CURRICULUM

The doctoral program in Industrial and Organizational Psychology (I/O) requires four to five years of full-time study beyond the baccalaureate and three to four years beyond the master's. The first few years are devoted to course work and the final year to the doctoral dissertation. Students enrolled in the doctoral program who wish to earn a master's degree in route to the PhD must complete the master's thesis requirement and meet with the program director for the MS program in Industrial and Organizational Psychology to plan a program of study.

The I/O program requires a minimum of 81 credit hours of graduate study for students who enter the program with a baccalaureate degree. The nature of this study is determined by the I/O Area Program Committee. For the typical student, the 81 hours of study will be distributed as follows.

### **Total Hours Required for PhD—81 Credit Hours Minimum beyond the Bachelor's Degree; 42 Credit Hours Minimum beyond the Master's Degree.**

After completing the required I/O Area courses and a majority of the other course requirements, students must pass a Candidacy Examination. This is a written examination covering the content of the field and is written and graded by the faculty. Candidacy Examinations may be taken a maximum of three times. Failure to pass the examination on three occasions will result in the student being dismissed from the program.

Having passed the Candidacy Examination, the student may begin dissertation-related research. After the completion of this research, the student must then pass an oral examination, which is a

defense of their dissertation.

### **Required I/O Area Courses—39 Credit Hours**

- INP 7075 Current Theory and Research in Industrial and Organizational Psychology (3 hours per semester for a total of 6 credit hours)
- INP 7214 Industrial Psychology I (3 credit hours)
- INP 7251 Industrial Psychology II (3 credit hours)
- INP 7310 Organizational Psychology I (3 credit hours)
- INP 7311 Organizational Psychology II (3 credit hours)
- INP 7081 Professional Issues in Industrial and Organizational Psychology (3 credit hours)
- PSY 7315 Psychometric Theory and Practice (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- PSY 6217 Advanced Research Methodology II (4 credit hours)
- PSY 6219C Advanced Research Methods III (4 credit hours)
- INP 6072 Applied Research Methods in I/O (3 credit hours)

### **Required Psychology Field Courses—3 Credit Hours**

- SOP 5059 Advanced Social Psychology (3 credit hours)

### **Elective Psychology Field Courses—6 Credit Hours**

Choose two courses from the following set. The courses in this set are selected by the student in conjunction with his or her adviser. Note, however, that all courses in the set must be approved by the I/O Program Committee. The courses may include:

- EXP 5208 Sensation and Perception (3 credit hours)
- EXP 5445 Psychology of Learning and Motivation (3 credit hours)
- EXP 6255 Human Performance (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)
- PPE 5055 Personality Theories (3 credit hours)
- PSB 5005 Physiological Psychology (3 credit hours)
- PSY 5605 History and Systems of Psychology (3 credit hours)

### **Elective Specialty Courses—12 Credit Hours**

Choose four courses from the following set. The courses in this set are selected by the student in conjunction with his or her adviser. Note, however, that all courses in the set must be approved by the I/O Program Committee. The courses may include:

- INP 7933 Seminar in Industrial and Organizational Psychology (3 credit hours; may be taken up to 4 times for credit)
- INP 7075 Current Theory and Research in Industrial and Organizational Psychology (3 credit hours; may be taken as a specialty course for up to 6 credit hours)
- EXP 5256 Human Factors I (3 credit hours)
- EXP 6257 Human Factors II (3 credit hours)
- MAN 6311 Advanced Topics in Human Resources Management (3 credit hours)
- MAN 7207 Organizational Theory (3 credit hours)
- MAN 6385 Human Resource Strategy (3 credit hours)

### **Directed Research—6 Credit Hours**

- PSY 6918 Directed Research (6 credit hours)

### **Dissertation—15 Credit Hours**

- PSY 7980 Doctoral Dissertation (15 credit hours)

Given the nature of graduate training and the pursuit of a doctoral degree, graduate students in industrial and organizational psychology are expected to engage in independent learning throughout their graduate career. The completion of the doctoral dissertation is an example of independent learning in which all graduate students participate. In addition, a master's thesis or other research projects will be undertaken by the students.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Bachelor's or master's degree in Psychology or another allied area.
- Evidence of successful completion of undergraduate courses in statistics and in the general area of experimental psychology.
- Résumé.
- Statement outlining the student's academic and professional background and goals, along with career aspirations and goals.
- Three letters of reference, with at least two furnished by college or university professors who are acquainted with the applicant.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Applicants to the program must either have a bachelor's degree with a major in psychology, or a baccalaureate degree and completion of undergraduate psychology courses in statistics and research methods; and four additional upper-division courses (12 credit hours) in the core content areas of psychology, for a minimum of 18 upper-division hours in psychology.

Applicants should note that admission to the PhD program is competitive, and successful applicants are expected to have an outstanding academic record. Admission to the program is based upon an overall assessment of the applicant's potential for completing it and for making significant contributions to the science and/or practice of I&O psychology. Admissions decisions are generally made by the second week in March and applicants are notified of their status shortly thereafter. Note that admission to the program is restricted to the fall semester of each academic year.

## **CONTACT INFO**

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 PSY 301E

# Public Affairs PhD

- Criminal Justice PhD

## PROGRAM DESCRIPTION

The Doctoral Program in Public Affairs is an interdisciplinary program drawing from the strengths of faculty in Criminal Justice, Health Management and Informatics, Public Administration, and Social Work. The program prepares students for academic positions in colleges and universities as well as research and leadership positions in public, nonprofit and private agencies. The dynamic mix of an interdisciplinary faculty with students of varied backgrounds creates a stimulating environment to examine contemporary organizational, institutional and community problems and issues. Graduates possess the theoretical, analytical and ethical foundation to produce new knowledge that impacts policies and programs and enhances institutional and community performance.

The program creates an environment for interdisciplinary study that enhances student understanding of the myriad important and interrelated public affairs issues confronting all communities. Often, the interrelated problems of crime and justice, health services and social welfare delivery, and the administration of organizations dealing with these problems have been approached in a discipline-specific and fragmented way. The program matches career goals of students through the interdisciplinary nature of course content, the interaction with faculty from all four disciplines, and the flexibility inherent in the choice of electives. Those seeking advancement within public agencies or nonprofit organization can choose a mix of electives, including course work from other UCF programs, while those seeking to teach at the college or university level can concentrate their course work more within a single discipline.

## CURRICULUM

The Doctoral Program in Public Affairs accommodates the needs of both traditional students and working professionals. All course work is offered in the evening hours and selected courses offer reduced seat time.

Students must complete 57 credit hours beyond the master's degree, including fourteen courses (42 credit hours) above the master's level distributed in

the following manner:

- a five-course, 15-credit required interdisciplinary core
- a four-course, 12-credit required research methods and quantitative analysis
- a five-course, 15-credit electives, configured into a specialization component tailored to meet students' individual goals
- 15 credit hours of dissertation minimum

A maximum of 6 credit hours of Independent Study or 6 credit hours of Doctoral Research may be used as electives with adviser's approval.

## Total Hours Required for PhD—57 Credit Hours Minimum

The Public Affairs PhD program curriculum comprises an interdisciplinary core with advanced studies in criminal justice, health and public administration, and social work. The program has a community-based focus with an emphasis on collaborative relationships across public, private and nonprofit sectors of the community.

If students receive grades of "C+" or lower in a required course, they may be dismissed from the program. Also, all students who receive a grade of "C+" or lower in a required course must repeat the course and obtain a grade of "B-" or better prior to taking the qualifying examination. A minimum of a 3.0 GPA in the specified graduate program of study is required to maintain graduate student status and for graduation.

## Interdisciplinary Core Courses—15 Credit Hours

- PAF 7000 Foundations of Public Affairs (3 credit hours)
- PAF 7110 Ethics and Social Justice in Public Affairs (3 credit hours)
- PAF 7230 Strategic Change and Management in Public Affairs (3 credit hours)
- PAF 7300 Policy Analysis in Public Affairs (3 credit hours)
- PAF 7315 Public Policy: Microeconomic Applications (3 credit hours)

## Research Methods Courses—12 Credit Hours

- PAF 7802 Advanced Research Methods in Public Affairs I (3 credit hours)
- PAF 7806 Advanced Research Methods in Public Affairs II (3 credit hours)



- PAF 7804 Advanced Quantitative Methods in Public Affairs I (3 credit hours)
- PAF 7805 Advanced Quantitative Methods in Public Affairs II (3 credit hours)

### **Electives —15 Credit Hours**

#### **Health**

- See advisers for appropriate Health Services Administration courses
- NGR 7190 Healthcare Systems and Policy (3 credit hours)
- NGR 7661 Healthcare for Vulnerable Populations (3 credit hours)
- NGR 7820 Innovative Technologies in Healthcare(3 credit hours)

#### **Public Administration**

- See advisers for appropriate Public Administration courses

#### **Social Work**

- See advisers for appropriate Social Work courses

#### **Research**

- PAF 7919 Doctoral Research
- PAF 7510 Seminar in Program Evaluation in Public Affairs (3 credit hours)
- PAF 7809 Applied Quantitative Methods in Public Affairs
- PAF 7810 Seminar in Survey Research in Public Affairs (3 credit hours)
- PAF 7820 Seminar in Qualitative Methods in Public Affairs (3 credit hours)
- PAF 7840 Seminar in Secondary Data Analysis in Public Affairs (3 credit hours)

#### **Public Affairs**

- PAF 6908 Independent Study
- PAF 7750 Pedagogy in Public Affairs (3 credit hours)
- PAF 7055 Public Affairs in State and Local Government
- PAF 7600 Legal Foundations of Public Affairs
- PAF 7601 Comparative Analysis in Global Public Affairs

#### **Criminal Justice**

A separate track is defined for this program. See Criminal Justice Track.

**Note:** Other 5000- and 6000-level courses may be accepted as electives per the approval of the program director, adviser, and coordinator.

### **Dissertation—15 Credit Hours**

- PAF 7980 Dissertation Research

### **Assignment of Faculty Advisers**

Upon acceptance of a student into the program, the program director provides students with an initial orientation and a general advising session. The director continues to advise students throughout the foundation stage of the program, assisting in the clarification of interests and goals and facilitating the introduction of students to faculty with research interests that can advance the student's program of study. Subsequently, students with clearly defined interests in Health Management and Informatics, Criminal Justice, Public Administration or Social Work are advised by the appropriate program director who is a faculty member in one of these disciplines. Students who have broader and more general interests are assigned to the Public Affairs faculty member who serves as program adviser. The program adviser helps the student select elective courses, finalize the program of study, and facilitate the discussion and review of dissertation topics. The dissertation chair should be selected by the student prior to the completion of the dissertation prospectus.

### **Qualifying Examination**

Following successful completion of all required courses, students are required to pass a qualifying examination. The examination is given at the end of fall or spring semesters and should be taken at the completion of the second year of study. Students are given two opportunities to pass all sections of the exam. Students who fail any section twice are dropped from the program.

### **Candidacy Status**

Students officially enter candidacy when the following has been accomplished:

- Completion of all course work, except for dissertation hours.
- Successful completion of the qualifying examination.
- Successful defense of the dissertation prospectus.

### **Equipment Fee**

Students in the Public Affairs Doctoral Program pay a \$40 equipment fee each semester that they are enrolled.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must hold a master’s degree from an accredited institution, preferably in criminal justice, health, public administration or social work. Applicants who do not have a master’s degree in a field directly related to public affairs may be required to take courses at the master’s level in preparation for doctoral level study. This preparatory course work requirement will be communicated at the time of acceptance into the program. These courses will not substitute for the doctoral degree requirements and will generally be taken prior to beginning the doctoral level course work. Admission decisions are made twice per academic year in fall and spring.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A narrative statement of 1000 words or less describing your educational expectations, career aspirations, level of computer skills, and any special qualifications or experiences that may enhance the overall learning environment of the PAF program
- Résumé
- A writing sample, i.e., academic paper, report, etc.
- Three letters of reference from faculty or professionals who can assess your ability to succeed in a doctoral program

Admission to the Doctoral Program in Public Affairs is granted on a competitive basis. Meeting minimum UCF admission standards does not guarantee program admissions. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match to the program, correspondence of the applicant’s career and academic interests with those of the core and affiliated faculty, and potential for completing the degree and making a significant contribution to

Public Affairs.

Public Affairs PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 23	Nov 4	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Program Director  
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 Public Affairs Ph.D. Program  
 Health and Public Affairs 343

Public Affairs PhD

# Criminal Justice PhD

## TRACK DESCRIPTION

The Doctoral Program in Public Affairs is an interdisciplinary program drawing from the strengths of faculty in Criminal Justice, Health Management and Informatics, Public Administration, and Social Work.

## CURRICULUM

### Total Hours Required for PhD—57 Credit Hours Minimum

Students must complete 57 credit hours beyond the master’s degree, including fourteen courses (42 credit hours) above the master’s level distributed in the following manner:

- a five-course, 15-credit required discipline specific courses
- a five-course, 15-credit required interdisciplinary core
- a four-course, 12-credit required research methods and quantitative analysis
- 15 credit hours of dissertation minimum

A maximum of 6 credit hours of Independent Study or 6 credit hours of Doctoral Research may be used as electives with adviser's approval.

If students receive grades of "C+" or lower in a required course, they may be dismissed from the program. Also, all students who receive a grade of "C+" or lower in a required course must repeat the course and obtain a grade of "B-" or better prior to taking the qualifying examination.

A minimum of a 3.0 GPA in the specified graduate program of study is required to maintain graduate student status and for graduation.

### **Interdisciplinary Core Courses—15 Credit Hours**

- PAF 7000 Foundations of Public Affairs (3 credit hours)
- PAF 7110 Ethics and Social Justice in Public Affairs (3 credit hours)
- PAF 7230 Strategic Change and Management in Public Affairs (3 credit hours)
- PAF 7300 Policy Analysis in Public Affairs (3 credit hours)
- PAF 7315 Public Policy: Microeconomic Applications (3 credit hours)

### **Research Methods Courses—12 Credit Hours**

- PAF 7802 Advanced Research Methods in Public Affairs I (3 credit hours)
- PAF 7806 Advanced Research Methods in Public Affairs II (3 credit hours)
- PAF 7804 Advanced Quantitative Methods in Public Affairs I (3 credit hours)
- PAF 7805 Advanced Quantitative Methods in Public Affairs II (3 credit hours)

### **Required Specialization Courses—15 Credit Hours**

- CCJ 7XXX Advanced Seminar in Law Enforcement (3 credit hours)
- CCJ 7XXX Advanced Seminar in Corrections (3 credit hours)
- CCJ 7XXX Advanced Seminar in Court Processes and Procedures (3 credit hours)
- CCJ 6217 Law and Social Control (3 credit hours)
- See adviser for appropriate methodological elective or directed independent study (3 credit hours)

### **Dissertation—15 Credit Hours**

- PAF 7980 Dissertation Research

### **Assignment of Faculty Advisers**

Upon acceptance of a student into the program, the program director provides students with an initial orientation and a general advising session. The director continues to advise students throughout the foundation stage of the program, assisting in the clarification of interests and goals and facilitating the introduction of students to faculty with research interests that can advance the student's program of study. Criminal Justice Track students will be advised by the Criminal Justice Coordinator. The program adviser helps the student select elective courses, finalize the program of study, and facilitate the discussion and review of dissertation topics. The dissertation chair should be selected by the student prior to the completion of the dissertation prospectus.

### **Qualifying Examination**

Following successful completion of all required courses, students are required to pass a qualifying examination. The examination is given at the end of fall or spring semesters. Students are given two opportunities to pass all sections of the exam. Students who fail any section twice are dropped from the program.

### **Candidacy Status**

Students officially enter candidacy when the following has been accomplished:

- Completion of all course work, except for dissertation hours.
- Successful completion of the qualifying examination.
- Successful defense of the dissertation prospectus.

### **Equipment Fee**

Students in the Public Affairs Program pay a \$40 equipment fee each semester that they are enrolled.

### **Total Hours Required for PhD—57 Credit Hours Minimum**

The Public Affairs PhD program curriculum comprises an interdisciplinary core with advanced studies in criminal justice, health and public administration, and social work. The program has

a community-based focus with an emphasis on collaborative relationships across public, private and nonprofit sectors of the community.

If students receive grades of “C+” or lower in a required course, they may be dismissed from the program. Also, all students who receive a grade of “C+” or lower in a required course must repeat the course and obtain a grade of “B-” or better prior to taking the qualifying examination. A minimum of a 3.0 GPA in the specified graduate program of study is required to maintain graduate student status and for graduation.

### **Interdisciplinary Core Courses—15 Credit Hours**

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- PAF 7230 Strategic Change and Management in Public Affairs (3 credit hours)
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- PAF 7315 Public Policy: Microeconomic Applications (3 credit hours)

### **Research Methods Courses—12 Credit Hours**

- PAF 7802 Advanced Research Methods in Public Affairs I (3 credit hours)
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- PAF 7804 Advanced Quantitative Methods in Public Affairs I (3 credit hours)
- PAF 7805 Advanced Quantitative Methods in Public Affairs II (3 credit hours)

### **Electives —15 Credit Hours**

#### **Health**

- See advisers for appropriate Health Services Administration courses
- NGR 7190 Healthcare Systems and Policy (3 credit hours)
- NGR 7661 Healthcare for Vulnerable Populations (3 credit hours)
- NGR 7820 Innovative Technologies in Healthcare (3 credit hours)

#### **Public Administration**

- See advisers for appropriate Public Administration courses

#### **Social Work**

- See advisers for appropriate Social Work courses

#### **Research**

- PAF 7919 Doctoral Research
- PAF 7510 Seminar in Program Evaluation in Public Affairs (3 credit hours)
- PAF 7809 Applied Quantitative Methods in Public Affairs
- PAF 7810 Seminar in Survey Research in Public Affairs (3 credit hours)
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#### **Public Affairs**

- PAF 6908 Independent Study
- PAF 7750 Pedagogy in Public Affairs (3 credit hours)
- PAF 7055 Public Affairs in State and Local Government
- PAF 7600 Legal Foundations of Public Affairs
- PAF 7601 Comparative Analysis in Global Public Affairs

#### **Criminal Justice**

A separate track is defined for this program. See Criminal Justice Track.

**Note:** Other 5000- and 6000-level courses may be accepted as electives per the approval of the program director, adviser, and coordinator.

#### **Dissertation—15 Credit Hours**

- PAF 7980 Dissertation Research

#### **Assignment of Faculty Advisers**

Upon acceptance of a student into the program, the program director provides students with an initial orientation and a general advising session. The director continues to advise students throughout the foundation stage of the program, assisting in the clarification of interests and goals and facilitating the introduction of students to faculty with research interests that can advance the student’s program of study. Subsequently, students with clearly defined interests in Health Management and Informatics, Criminal Justice, Public Administration or Social Work are advised by the appropriate program director who is a faculty member in one of these disciplines. Students who have broader and more

general interests are assigned to the Public Affairs faculty member who serves as program adviser. The program adviser helps the student select elective courses, finalize the program of study, and facilitate the discussion and review of dissertation topics. The dissertation chair should be selected by the student prior to the completion of the dissertation prospectus.

## Qualifying Examination

Following successful completion of all required courses, students are required to pass a qualifying examination. The examination is given at the end of fall or spring semesters and should be taken at the completion of the second year of study. Students are given two opportunities to pass all sections of the exam. Students who fail any section twice are dropped from the program.

## Candidacy Status

Students officially enter candidacy when the following has been accomplished:

- Completion of all course work, except for dissertation hours.
- Successful completion of the qualifying examination.
- Successful defense of the dissertation prospectus.

## Equipment Fee

Students in the Public Affairs Doctoral Program pay a \$40 equipment fee each semester that they are enrolled.

## ADMISSIONS

Applicants must possess a master's degree from an accredited institution, preferably in a field related to criminal justice, health, public administration or social work. Applicants without a master's degree in a field directly related to public affairs may be required to take courses at the master's level in preparation for doctoral level study, which will be communicated if a student is accepted into the program.

Applicants must hold a master's degree from an accredited institution, preferably in criminal justice, health, public administration or social work. Applicants who do not have a master's degree in a field directly related to public affairs may be required to take courses at the master's

level in preparation for doctoral level study. This preparatory course work requirement will be communicated at the time of acceptance into the program. These courses will not substitute for the doctoral degree requirements and will generally be taken prior to beginning the doctoral level course work. Admission decisions are made twice per academic year in fall and spring.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A narrative statement of 1000 words or less describing your educational expectations, career aspirations, level of computer skills, and any special qualifications or experiences that may enhance the overall learning environment of the PAF program
- Résumé
- A writing sample, i.e., academic paper, report, etc.
- Three letters of reference from faculty or professionals who can assess your ability to succeed in a doctoral program

Criminal Justice PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 23	Nov 4	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Professor  
 Program Director  
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 Telephone 407-823-3678  
 Public Affairs Ph.D. Program  
 Health and Public Affairs 343

# Sociology PhD

## PROGRAM DESCRIPTION

The Sociology PhD program is organized around a curriculum combining strong grounding in the acquisition of methodological skills with advanced study in one of the department's four areas of concentration: the Sociology of Crime/Deviance, Domestic Violence, Social Inequalities, and Urban/Environmental Sociology.

The program is one of only a few in the United States focusing on applied research. Students are trained in specific applied research skills such as data analysis and program evaluation. Combined with course work in one of the four substantive areas, graduates will be trained for employment in academic settings, industry, business, government and nonprofit agencies. The program provides training in the skills necessary to secure research careers in academic and nonacademic professions and emphasizes applied research in community-based settings.

## CURRICULUM

The Sociology PhD requires a minimum of 60 credit hours are required beyond the master's degree, with 15 credit hours coming from required core courses and three credit hours from a restricted elective in research methods and data analysis. Students select a minimum of 12 unrestricted elective credit hours in one of the department's four areas of concentration, Sociology of Crime/Deviant Behavior, Domestic Violence, Social Inequalities, or Urban/Environmental Sociology.

### Total Hours Required for PhD—60 Credit Hours Minimum beyond the Master's Degree.

Students must earn a grade of "B" (3.0) or better in the program's required courses. Courses may be retaken to achieve a better grade; however, students must maintain a minimum GPA of 3.0 in their program of study.

#### Required Courses—15 Credit Hours

- SYA 7019 Advanced Sociological Theory (3 credit hours)
- SYA 7309 Advanced Sociological Research Methods (3 credit hours)

- SYA 7407 Advanced Data Analysis (3 credit hours)
- SYA 6657 Program Design and Evaluation (3 credit hours)
- SYA 7658 Social Policy and Research Analysis (3 credit hours)

#### Research Methods and Data Analysis Restricted Electives—3 Credit Hours

Select one course from the list below.

- SYA 6315 Qualitative Research Methods (3 credit hours)
- SYA 6425 Design and Conduct of Social Surveys (3 credit hours)
- SYA 5652 Advanced Population (3 credit hours)
- SYA 7457 Topics in Data Analysis (3 credit hours)

#### Major Area of Concentration Electives—12 Credit Hours Minimum

Students will select a minimum of 12 credit hours of unrestricted electives in one of the department's four areas of concentration.

- Sociology of Crime/Deviant Behavior
- Domestic Violence
- Social Inequalities
- Urban/Environmental Sociology

#### Unrestricted Electives—15 Credit Hours Minimum

The unrestricted electives provide students with an opportunity to expand their doctoral training beyond the program's core courses and the restricted electives in the student's major area of concentration. Unrestricted electives may include regularly scheduled graduate courses, graduate-level courses in programs outside the Sociology Department, independent study courses with a highly focused student/faculty research component, and a research practicum, which enable students to gain valuable research experience in a nonacademic setting. Unrestricted electives may be taken at any point in the student's program of study. The research practicum and courses from other departments must be approved by the student's adviser and the graduate program director.

#### Qualifying Examinations

After completing the program's required courses, a student will take two qualifying examinations.

The qualifying examinations will be designed by a faculty grading committee and reflect the course work in the areas of Theory and Methods/Statistics. The qualifying examinations will be used to determine the student's eligibility to complete the doctoral degree. The exams will screen for research ability, technical skills, and mastery of the disciplines core content. Each examination will be a five hour examination that will be used to determine the student's eligibility to complete the doctoral degree. Qualifying examinations will be administered in December and August, at a date arranged by the graduate committee and a student must notify the Graduate Program Director in writing of their intent to take the qualifying examinations at least one month before the date fixed for examination. Students passing the qualifying exams will continue with their scheduled examination period. If an exam is failed a second time, the student will be dismissed from the Sociology doctoral program.

### **Major Area Examination**

After completing the program's two qualifying examinations and 12 hours of course work in their major area of concentration, a student will take a major area examination. The student's adviser and faculty who teach in the selected area will design and administer the examination, which will be based on course work completed in the student's major area of concentration.

### **Candidacy Examination**

The dissertation proposal hearing constitutes the program's candidacy examination, and students who successfully pass their proposal hearing shall be admitted to candidacy. The proposal will encompass an overview of the dissertation topic that includes an in-depth review of relevant literature, a precise statement of the research question, and specific research design (planned methodology and analysis). The student's Advisory Committee will supervise the preparation of the dissertation proposal and the proposal hearing.

### **Dissertation—15 Credit Hours Minimum**

A dissertation is required for completion of the PhD, along with an oral defense of the dissertation proposal and completed dissertation through a minimum of 15 credit hours, which students use to accomplish original research on a topic approved

by their adviser and three committee members. One committee member must be from a relevant field outside the Department of Sociology. The dissertation must conform to standard disciplinary, institutional, and departmental practices. Students may not enroll for dissertation credit until they have completed all examinations in their program of study.

### **Applied Research Practicum (Optional)**

An important component of the Sociology PhD program is the research practicum. The practicum is a three to six credit hours of directed research experience in a nonacademic setting, which will provide a "hands-on" approach for advanced doctoral students. Although completion of a research practicum will not be required for all doctoral students, it is expected that some students, including most of those seeking employment in research positions in public and private agencies, will take advantage of this opportunity. Doctoral students must pass their qualifying examinations before being eligible for a research practicum. The student's graduate adviser and the department's graduate program director must approve the research practicum. Hours completed in a research practicum will count as unrestricted electives in the student's program of study.

As with all graduate programs, independent learning is an important component in the Sociology doctoral program. Students will demonstrate independent learning through research seminars, directed research and the dissertation.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Master's degree in a related field from an accredited institution.

- Official, competitive GRE score taken within the last five years.
- Three letters of recommendations, at least two regarding the applicant's potential for success in the program.
- A 250-500 word personal statement identifying the area of research interest, faculty with whom they would like work with and a description of the applicant's academic and professional experiences and goals.
- Résumé.
- A writing sample, at least 2,500 words and demonstrating the ability to complete advanced graduate work.

Applicant's records will be reviewed on an individual basis for academic deficiencies and evaluated to assess their potential for success in the program. Supplemental course work may be recommended. Consult the graduate program director whenever questions arise.

Meeting minimum UCF admissions criteria does not guarantee program admission. Final admission is also based on evaluation of the applicant's abilities, past performance, recommendations, match of this program to the applicant's career/academic goals, and applicant's potential for completing the degree.

Sociology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Jan 1		
International Applicants	Jan 1	Jan 1		
International Transfer Applicants	Jan 1	Jan 1		

## CONTACT INFO

Jana Jasinski PhD  
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Program Director  
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Department of Sociology and Anthropology  
Phillips Hall 403

# Texts and Technology PhD

## PROGRAM DESCRIPTION

The doctoral program in Texts and Technology provides training in an interdisciplinary field combining scholarly study, creative production and critical assessment of digital media texts. Texts include visual, audio, multimedia and performance, as well as printed and spoken words. The curriculum emphasizes theory and practice in new media supplemented by historical grounding in pre-digital media studies. This program prepares students for positions in research, teaching and program development. Areas of research and production include web design, multimedia production, distributed education, entertainment, publishing, information architecture and visualization.

## CURRICULUM

The Texts and Technology PhD program requires four core courses (12 credits), three courses in the internship and teaching area (9 credits), three elective courses from within the Texts and Technology course offerings (9 credits), three advised interdisciplinary courses (9 credits), three credit hours for candidacy examination and at least 15 credit hours of dissertation work for a total of at least 57 semester hours of credit taken at UCF.

## Total Hours Required for PhD—57 Credit Hours Minimum Beyond the Master's Degree

Students must write a dissertation on their research that will explain and defend a significant original contribution to the field of Texts and Technology. Students choose their dissertation adviser and committee from within the program. Students will submit at least one substantial scholarly article to a national peer-reviewed journal with the approval and assistance of the dissertation chair and the director of the doctoral program.

## Required Core Courses—12 Credit Hours

- ENG 6800 Introduction to Texts and Technology (3 credit hours)



- ENG 6810 Theories of Texts and Technology (3 credit hours)
- ENG 6801 Texts and Technology in History (3 credit hours)
- ENG 6812 Research Methods for Texts and Technology (3 credit hours)

### **Internship and Practicum—9 Credit Hours**

- ENG 6813 Teaching Online in Texts and Technology (3 credit hours)
- ENG 6948 Teaching Practicum in Texts and Technology (3 credit hours)
- ENG 6947 Internship in Texts and Technology\* (3 credit hours)

\* With permission of the Texts and Technology program director, this course can be waived if the student has relevant experience working in industry. If the course is waived, the student must substitute three credit hours of restricted electives.

### **Restricted Electives in Texts and Technology—9 Credit Hours**

- ENC 6428 Rhetoric of Digital Literacy (3 credit hours)
- ENC 6XXX Acoustical Texts and Technology (3 credit hours)
- ENC 6426 Visual Texts and Technology (3 credit hours)
- ENC 6814 Gender in Texts and Technology (3 credit hours)
- ENG 6811 Cultural Contexts in Texts and Technology (3 credit hours)
- ENC 5225 Theory and Practice of Document Usability (3 credit hours)
- ENC 6XXX Ethics in Texts and Technology (3 credit hours)
- ENG 6939 Topics in Texts and Technology (3 credit hours)

### **Interdisciplinary Electives—9 Credit Hours**

Nine hours of advised interdisciplinary electives are required for students in the PhD Program in Texts and Technology. This requirement encourages students to find graduate-level coursework best suited to develop their research agendas and to prepare for their dissertation.

### **Candidacy Examination—3 Credit Hours**

- ENC 7919 Doctoral Research

Students are admitted to doctoral candidacy status upon completion of a written examination with three parts—one part based on a reading list reviewed annually by the Texts and Technology faculty and the other two parts based on reading lists prepared by each student and approved by the examination committee. The candidacy examination for each student is written and evaluated by a committee of three UCF graduate faculty chosen by the student; however, at least two members of each candidacy examination committee must be members of the Texts and Technology core faculty. Students must be registered for ENC 7919 during the semester in which they take their candidacy examination and they must find a Texts and Technology core faculty member to serve as the chair of their examination during the semester before taking ENC 7919. Students cannot register for dissertation credit ENC 7980 until the semester after they have successfully completed the candidacy examination. Students who fail the candidacy examination a second time cannot continue in the program.

### **Dissertation and Oral Defense—15 Credit Hours**

- ENC 7980 Doctoral Dissertation

Students choose their dissertation adviser and committee from among the faculty in the Texts and Technology PhD program. They choose the adviser and committee after they have completed approximately 27 credit hours toward the degree or after the first year-and-a-half of course work. All dissertation committee members, including outside readers, must hold a PhD or another relevant terminal degree.

Students must write a dissertation on their research that will explain and defend a significant original contribution to the field of Texts and Technology. It may be of a theoretical, historical or pragmatic nature, but must meet conventional academic standards. The dissertation committee administers the candidate's oral defense of the dissertation, with passing determined by acceptance by a majority of the committee. The dissertation adviser, the dissertation committee and the dean of the college or designee must approve the final dissertation. Format approval is required from the Thesis and Dissertation Office and final approval of degree requirement completion by the College of Graduate Studies (Millican Hall 230).

Students will submit at least one substantial scholarly article to a national peer-reviewed journal

with the approval and assistance of the dissertation chair and the director of the doctoral program.

## First-Year Review

At the end of the first year of study, each full-time student's performance will be reviewed. For part-time students this review will occur after 18 hours of course work or two years of study, whichever comes first. The first-year review is intended to help identify the student's strengths and weaknesses in completing the Texts and Technology program. Students who pass their first-year review continue in their course work and have no additional evaluations until their candidacy examinations. Students whose first-year reviews identify significant problems will be given feedback about those problems and will be required to have a second review during the regular (not summer) semester after their first review. Students who do not make sufficient progress in addressing the problems identified in their first review by the time of their second review cannot continue in the program.

The first-year review will be based on the student's progress in moving through the program's requirements and on evaluations written by instructors. The written evaluations are submitted to the Texts and Technology director, who summarizes the student's strengths and weaknesses and convenes a meeting with each student and another member of the Texts and Technology faculty.

## Residence Requirement

Each full-time student is expected to complete two continuous semesters in full-time graduate student status after acceptance into the doctoral program. Doctoral students must be registered for a minimum of nine semester hours during this time.

## Time Limitation

Students have seven years from the beginning of graduate status in the doctoral program to complete all requirements for the PhD degree.

## Teaching and Research Assistantships

The Texts and Technology PhD Program, in conjunction with the Department of English, offers a limited number of graduate teaching assistantships (GTA) each year on a competitive basis. These assistantships may also require some research

work, especially in the first year of the program. The program may also offer graduate research assistantships (GRA) on a competitive basis. Students who accept graduate assistantships should not hold any additional full-time employment.

Students awarded a GTA who have not taught at the college level must take ENC 5705 Theory and Practice in Composition. The credit hours for this course do not count toward the degree requirements.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must hold a master's degree from any accredited field. Fields with a technological and/or textual theory background, such as cultural studies or linguistics, are especially applicable.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendations, at least two regarding the applicant's potential for success in the program.
- Goal statement.
- Substantial writing sample and an optional digital portfolio illustrating the applicant's ability to engage in advanced academic work. Acceptable writing samples can include a chapter from a master's thesis, a conference paper, a term paper from a seminar course, scientific, or other research.
- Résumé.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Texts and Technology PhD	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

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## Masters Degree Programs

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# Accounting MSA

## PROGRAM DESCRIPTION

The Master of Science in Accounting (MSA) degree prepares students for careers as professional accountants and consultants in public practice, financial institutions, governments, industry, and nonprofit organizations. The program, along with appropriate foundation work, satisfies the Florida requirements to qualify to take the Certified Public Accountant (CPA) examination.

## CURRICULUM

The Master of Science in Accounting (MSA) degree is awarded upon satisfactory completion of a minimum of 30 credit hours. In the total program of study a minimum of 18 credit hours of the course work, including a minimum of 12 credit hours of accounting/tax course work must be at the 6000 level. Students, with the assistance and approval of the program adviser, may select courses that reflect their interests.

## Total Hours Required for MSA—30 Credit Hours Minimum

Faculty members in the Kenneth G. Dixon School of Accounting emphasize independent learning in various ways in all courses in the MSA program. Cases and research projects that involve independent work outside the classroom are incorporated into all course work. The cases and projects are both individual and team prepared. Students are asked to do research that requires they utilize library, internet and resources other than the material provided by the professor. The results of independent research activity are presented in either a written report or case analysis or oral presentation. Students work to develop and enhance skills and competencies that will support them professionally throughout their careers. The approaches used in our courses encourage students toward life-long learning. In addition, each student must pass a final oral examination that is administered by a committee of graduate faculty.

## Accounting and Business Foundation Core

The courses included in the accounting and business foundation core are listed below. A recent UCF accounting undergraduate degree satisfies the core requirement. Other recent related business administration course work may partially or fully satisfy this requirement. Any deficiencies must be satisfied before advanced course work can be taken. Students with a nonbusiness undergraduate degree will probably need to take 12-45 additional semester hours of business to satisfy the requirements of the CPA examination.

### Prerequisite Courses

#### Accounting Foundation Core—22 Credit Hours

- ACG 3131 Financial Accounting Concepts and Analysis (3 credit hours)
- ACG 3141 Intermediate Financial Accounting (3 credit hours)
- ACG 3361 Intermediate Managerial Accounting (3 credit hours)
- ACG 4401 Accounting Information Systems (3 credit hours)
- ACG 4651 Auditing or ACG 4671 Internal Auditing (3 credit hours)
- BUL 3130 Legal and Ethical Environment of Business (4 credit hours)
- TAX 4001 Taxation of Business Entities and Transactions (3 credit hours)

#### Business Foundation Core—12 Credit Hours

- ACG 6065 Accounting Foundations (3 credit hours)\*
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)\*
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)\*
- FIN 6404 Foundations of Finance (3 credit hours)\*

\* Or equivalent undergraduate course taken as an undergraduate student. If the course was not part of the undergraduate program, it must be taken at the 6000 level.

#### Required Courses—6 Credit Hours

- ACG 6636 Advanced Auditing Topics (3 credit hours)

- ACG 5405 Advanced Accounting Information Systems (3 credit hours)

### Restricted Electives—24 Credit Hours

Students must select eight elective courses for their programs of study. Five selections must be from the list below of restricted electives. At least three of these five selected courses must be accounting and/or taxation courses at the 6000 level.

#### Accounting and Taxation Restricted Electives

- ACG 5346 Advanced Managerial Accounting (3 credit hours)
- ACG 5517 Financial Accounting and Auditing for Governmental and Nonprofit Organizations (3 credit hours)\*
- ACG 6255 International and Multinational Accounting (3 credit hours)
- ACG 6519 Seminar in Governmental and Nonbusiness Accounting and Auditing (3 credit hours)
- ACG 6685 Seminar in Fraud Auditing (3 credit hours)
- ACG 6805 Seminar in Accounting Theory (3 credit hours)
- ACG 6835 Seminar in Ethics and Professionalism in Accounting and Auditing (3 credit hours)
- ACG 6946 Graduate Accounting Internship (3 credit hours)
- TAX 5015 Advanced Tax Topics (3 credit hours)\*\*
- TAX 6065 Tax Research (3 credit hours)
- TAX 6135 Taxation of Corporations and Shareholders (3 credit hours)
- TAX 6205 Partnership Taxation (3 credit hours)
- TAX 6405 Taxation of Estates and Gifts (3 credit hours)
- TAX 6946 Graduate Tax Internship (3 credit hours)
- TAX 6845 Tax Planning and Consulting (3 credit hours)
- TAX 6505 International Taxation (3 credit hours)

#### Business Restricted Electives

- BUL 5332 Advanced Business Law Topics (3 credit hours)\*\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)

- FIN 6425 Asset Management and Financial Decisions (3 credit hours)
- FIN 6475 Business Valuation (3 credit hours)
- FIN 6515 Analysis of Investment Opportunities (3 credit hours)
- ISM 6227 Management of Telecommunications (3 credit hours)
- ISM 6305 Information Resources Management (3 credit hours)
- ISM 6367 Strategic Information Systems (1.5 hours)
- ISM 6407 Decision Support Systems (1.5 hours)
- ISM 6485 Electronic Commerce (3 credit hours)
- ISM 6537 Quantitative Models for Business Decisions (3 credit hours)

\* Students who have not completed ACG 3501 Financial Accounting for Governmental and Nonprofit Organizations, or the equivalent must complete ACG 5517 Financial Accounting and Auditing for Governmental and Nonprofit Organizations or ACG 6519 Seminar in Governmental and Nonbusiness Accounting and Auditing. Either may be selected as an elective in the graduate program of study courses.

\*\* Students planning to take the CPA examination should include TAX 5015 Advanced Tax Topics and, if a second law course is needed, BUL 5332 Advanced Business Law Topics in their elective course selections.

### Other Electives

Three additional elective courses may be chosen from the list of restricted electives above, including accounting, taxation, and other business electives. They may also be selected from other graduate courses offered in the College of Business Administration or from outside the college. Courses not on the restricted elective list should be selected with the student's area of interest in mind and with approval of the program adviser. The university limits program of study courses outside the college to six semester hours.

Students must show clear evidence of proficiency in oral and written communication and computer usage.

## Comprehensive Examination

Satisfactory completion of an end-of-program comprehensive examination is required. The MSA program does not require a thesis.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- 3.0 GPA in upper-division accounting and tax courses.
- Official, competitive GRE or GMAT score taken within the last five years.
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Accounting MSA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 15	Dec 1	Mar 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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# Aerospace Engineering MSAE

- Accelerated BS to MSAE
- Space Systems Design and Engineering MSAE
- Thermofluid Aerodynamic Systems Design and Engineering MSAE

## PROGRAM DESCRIPTION

The Master of Science in Aerospace Engineering (MSAE) is designed to prepare students for careers as engineers in aerospace. Students may choose from three tracks: Accelerated BS to MSAE, Space Systems Design and Engineering, and Thermofluid Aerodynamic Systems Design and Engineering.

## CURRICULUM

The MSAE is awarded upon completion of a minimum of 30 credit hours. Students of the program must select a thesis or nonthesis option. All students are expected to identify an adviser and file an official degree program of study prior to the completion of nine semester hours of study. At least one-half of the required credits must be taken at the 6000 level. Students should consult the Graduate Director for assistance.

### Total Hours Required for MSAE—30 Credit Hours Minimum

The program offers three tracks: Space Systems Design and Engineering, Thermofluid Aerodynamic Systems Design and Engineering, and Accelerated BS to MSAE. The MSAE is awarded upon completion of a minimum of 30 credit hours, which includes 12 credit hours of required courses, 6 credit hours of specialization, 6-9 credit hours of electives and depending on whether a student selects a thesis or nonthesis option. Thesis option students will be required a minimum of 6 credit hours and nonthesis students will be required to take the course EML 6085 Research Methods in MMAE and make a presentation on a chosen topic before a committee of faculty members.

All students are expected to identify an adviser and file an official degree program of study prior to the completion of nine semester hours of study. At least one-half of the required credits must be taken at the 6000 level. Students should consult the Graduate Director for assistance.

For the Accelerated track, the BSAE is awarded after completion of 71 hours of engineering courses and all other university requirements, and the MSAE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Aerospace Engineering MSAE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Engineering 313

### *Aerospace Engineering MSAE*

# Accelerated BS to MSAE

## TRACK DESCRIPTION

The Accelerated BS to MS in Aerospace Engineering allows highly qualified undergraduate

students in Aerospace Engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program.

## CURRICULUM

The BSAE is awarded after completion of 71 hours of engineering courses and all other university requirements, and the MSAE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved 5000- and 6000-level courses of grades "B" (3.0) or better may be counted toward the BS and MS degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Aerospace Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B" (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

### Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

### Graduate Requirements

For thesis option students, these 18 hours include 6 credit hours of thesis (EAS 6971); for the nonthesis option, these 18 credit hours need to include either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours). The remaining credit hours can be selected from courses from other tracks.

### Total Hours Required for MSAE—30 Credit Hours Minimum

The program offers three tracks: Space Systems Design and Engineering, Thermofluid Aerodynamic Systems Design and Engineering, and Accelerated BS to MSAE. The MSAE is awarded upon completion of a minimum of 30 credit hours, which includes 12 credit hours of required courses, 6 credit hours of specialization, 6-9 credit hours of electives

and depending on whether a student selects a thesis or nonthesis option. Thesis option students will be required a minimum of 6 credit hours and nonthesis students will be required to take the course EML 6085 Research Methods in MMAE and make a presentation on a chosen topic before a committee of faculty members.

All students are expected to identify an adviser and file an official degree program of study prior to the completion of nine semester hours of study. At least one-half of the required credits must be taken at the 6000 level. Students should consult the Graduate Director for assistance.

For the Accelerated track, the BSAE is awarded after completion of 71 hours of engineering courses and all other university requirements, and the MSAE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general admission requirements, applicants must provide a bachelor's degree in Aerospace Engineering or a closely related discipline, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

- Bachelor's degree in Aerospace Engineering or closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the MMAE Graduate Director for further information.

Accelerated BS to MSAE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

### *Aerospace Engineering MSAE*

# Space Systems Design and Engineering MSAE

## TRACK DESCRIPTION

The Master of Science in Space Systems Design and Engineering (MSAE) is designed to prepare students for careers as engineers in aerospace.

## CURRICULUM

## Total Hours Required for MSAE—30 Credit Hours Minimum

### Prerequisites (or equivalent)

#### Requirements

- MAP 2302 Mathematics through Differential Equations
- EML 3034 Modeling Methods in Mechanical and Aerospace Engineering
- EAS 4134 High-Speed Aerodynamics
- EAS 4105 Flight Mechanics or EAS 4400 Spacecraft Attitude Dynamics
- EAS 4200 Flight Structures or EAS 4210 Space Structural Dynamics

### Required Courses—12 Credit Hours

- EAS 5407 Mechatronic Systems (3 credit hours)
- EAS 6507 Topics of Astrodynamics (3 credit hours)
- EML 5060 Mathematical Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials, and Aerospace Engineering I or EML 6XXX Modern Control Systems (currently EML 5311) (3 credit hours)

### Suggested Electives—18 Credit Hours

For thesis option students, these 18 hours include 6 credit hours of thesis (EAS 6971); for the nonthesis option, these 18 credit hours need to include either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours). The remaining credit hours can be selected from the following list or from courses from other tracks.

- EAS 6403C Attitude Determination and Control (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EAS 6415 Guidance, Navigation and Control (3 credit hours)
- EEL 6616 Adaptive Control (3 credit hours)
- EEL 6621 Nonlinear Control Systems (3 credit hours)
- EML 6808 Analysis and Control of Robot Manipulators (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)



- EML 6233 Fundamentals of Fatigue Analysis (3 credit hours)
- EML 5237 Intermediate Mechanics of Materials (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials and Aerospace Engineering I (3 credit hours)
- EML 6155 Convection Heat Transfer (3 credit hours)
- EML 6157 Radiation Heat Transfer (3 credit hours)
- EAS 6808 Space Environment and Payload Instrumentation (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EML 5311 System Control (3 credit hours)
- EEL 5432 Satellite Remote Sensing (3 credit hours)
- EEL 5542 Random Processes I (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6530 Communication Theory (3 credit hours)
- EAS 6405 Advanced Flight Dynamics (3 credit hours)
- EMA 6628 Materials Failure Analysis (3 credit hours)
- EML 6227 Nonlinear Vibration (3 credit hours)
- EML 6547 Engineering Fracture Mechanics in Design (3 credit hours)
- EML 6808 Analysis and Control of Robot Manipulators (3 credit hours)
- EAS 6971 Thesis (6 credit hours)
- EML 6508 Research Methods in MMAE (3 credit hours)
- EAS 6908 Directed Research (3 credit hours)

### **Total Hours Required for MSAE—30 Credit Hours Minimum**

The program offers three tracks: Space Systems Design and Engineering, Thermofluid Aerodynamic Systems Design and Engineering, and Accelerated BS to MSAE. The MSAE is awarded upon completion of a minimum of 30 credit hours, which includes 12 credit hours of required courses, 6 credit hours of specialization, 6-9 credit hours of electives and depending on whether a student selects a thesis or nonthesis option. Thesis option students will be required a minimum of 6 credit hours and nonthesis students will be required to take the course EML 6085 Research Methods in MMAE and make a presentation on a chosen topic before a committee of faculty members.

All students are expected to identify an adviser and file an official degree program of study prior to the completion of nine semester hours of study. At least one-half of the required credits must be taken at the 6000 level. Students should consult the Graduate Director for assistance.

For the Accelerated track, the BSAE is awarded after completion of 71 hours of engineering courses and all other university requirements, and the MSAE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

The nonthesis option requires either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours) as the independent learning experience.

## **ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting general admission requirements, applicants must provide a bachelor's degree in Aerospace Engineering or a closely related discipline, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Bachelor's degree in Aerospace Engineering or closely related discipline.
- Résumé.

- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the MMAE Graduate Director for further information.

Space Systems Design and Engineering MSAE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Alain Kassab PhD

Professor

Program Director

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Telephone 407-823-3402

Mechanical, Materials and Aerospace Engineering  
Engineering 313

## *Aerospace Engineering MSAE*

# Thermofluid Aerodynamic Systems Design and Engineering MSAE

## TRACK DESCRIPTION

The Master of Science in Thermofluid Aerodynamics Systems Design and Engineering (MSAE) is designed to prepare students for careers as engineers in aerospace.

## CURRICULUM

### Total Hours Required for MSAE—30 Credit Hours Minimum

### Prerequisite (or equivalent)

#### Requirements

- MAP 2302 Mathematics through Differential Equations
- EML 3034 Modeling Methods in Mechanical and Aerospace Engineering
- EAS 4134 High-Speed Aerodynamics
- EAS 4300 Aerothermodynamics of Propulsion Systems
- EAS 4105 Flight Mechanics
- EML 4703 Fluid Mechanics II

### Required Courses—12 Credit Hours

- EAS 6138 Advanced Gas Dynamics (3 credit hours)
- EML 5060 Mathematical Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5131 Combustion Phenomena (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)

### Electives—18 Credit Hours

For thesis option students, these 18 hours include 6 credit hours of thesis (EAS 6971); for the nonthesis option, these 18 credit hours need to include either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours). The remaining credit hours can be selected from the following list or from courses from other tracks.

- EAS 5123 Intermediate Aerodynamics (3 credit hours)
- EAS 6185 Turbulent Flow (3 credit hours)
- EAS 5315 Rocket Propulsion (3 credit hours)
- EML 5713 Intermediate Fluid Mechanics (3 credit hours)
- EML 6712 Viscous Flow (3 credit hours)
- EML 5402 Turbomachinery (3 credit hours)
- EML 5105 Gas Kinetics and Statistical Thermodynamics (3 credit hours)
- EML 6155 Convection Heat Transfer (3 credit hours)
- EML 6725 Computational Fluid Dynamics and Heat Transfer I (3 credit hours)

- EAS 5302 Direct Energy Conversion (3 credit hours)
- EAS 6807 Aerospace Measurements/Instrumentation (3 credit hours)
- EML 6124 Two-Phase Flow (3 credit hours)
- EML 6726 Computational Fluid Dynamics and Heat Transfer II (3 credit hours)
- EML 6154 Conduction Heat Transfer (3 credit hours)
- EML 5713 Intermediate Fluid Mechanics (3 credit hours)
- EML 6157 Radiation Heat Transfer (3 credit hours)
- EAS 5123 Intermediate Aerodynamics (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)
- EML 5237 Intermediate Mechanics of Materials (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EML 5546 Engineering Design with Composite Materials (3 credit hours)
- EML 6547 Engineering Fracture Mechanics in Design (3 credit hours)
- EAS 6971 Thesis (6 credit hours)
- EML 6085 Research Methods in MMAE (3 credit hours)
- EAS 6908 Directed Research (3 credit hours)

### **Total Hours Required for MSAE—30 Credit Hours Minimum**

The program offers three tracks: Space Systems Design and Engineering, Thermofluid Aerodynamic Systems Design and Engineering, and Accelerated BS to MSAE. The MSAE is awarded upon completion of a minimum of 30 credit hours, which includes 12 credit hours of required courses, 6 credit hours of specialization, 6-9 credit hours of electives and depending on whether a student selects a thesis or nonthesis option. Thesis option students will be required a minimum of 6 credit hours and nonthesis students will be required to take the course EML 6085 Research Methods in MMAE and make a presentation on a chosen topic before a committee of faculty members.

All students are expected to identify an adviser and file an official degree program of study prior to the completion of nine semester hours of study. At least one-half of the required credits must be taken at the 6000 level. Students should consult the Graduate Director for assistance.

For the Accelerated track, the BSAE is awarded after completion of 71 hours of engineering courses and all other university requirements, and the MSAE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

The nonthesis option requires either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours) as the independent learning experience.

## **ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting general admission requirements, applicants must provide a bachelor's degree in Aerospace Engineering or a closely related discipline, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Bachelor's degree in Aerospace Engineering or closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the MMAE Graduate Director for further information.

Thermofluid Aerodynamic Systems Design and Engineering MSAE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

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## Anthropology MA

- Archaeological Investigations in Forensics and Human Adaptation MA
- Cultural Competence in the Professions MA
- Maya Studies MA

## PROGRAM DESCRIPTION

The Department of Anthropology offers a graduate program leading to the Master of Arts degree in Anthropology. The program includes three tracks: Archaeological Investigations in Forensics and Human Adaptation, Cultural Competence in the Professions, and Maya Studies.

## CURRICULUM

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

Degree-seeking students in the Archaeological Investigations in Forensics and Human Adaptation,

the Cultural Competence in the Professions, and the Maya Studies options of the Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above. The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Anthropology MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Feb 15	Nov 1	
International Applicants	Jan 1	Jan 1	Jul 1	
International Transfer Applicants	Jan 1	Feb 15	Sep 1	

## CONTACT INFO

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 Department of Anthropology  
 Howard Phillips Hall 309

*Anthropology MA*

# Archaeological Investigations in Forensics and Human Adaptation MA

## TRACK DESCRIPTION

The Archaeological Investigations MA program provides intensive training in human skeletal analysis and archaeological field excavation as a means for individual and demographic reconstruction of recent contexts and for other interpretations of the past.

## CURRICULUM

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

Degree-seeking students in the Archaeological Investigations in Forensics and Human Adaptation Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree. Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above.

The MA degree is conferred when students have fulfilled the requirements of either the thesis or nonthesis option. No graduate credit will be given for any grade lower than a B- (2.75), but the grade will be counted toward the GPA. Courses may be retaken to achieve a better grade; however, the unsatisfactory grade will remain in the program of study. In order to stay in good academic standing, students must maintain a minimum Graduate Status GPA of 3.0 in their program of study.

Upon acceptance into the program students will be assigned a faculty adviser. Together the students and their advisers will determine the student's preliminary program of study, either in the thesis

or nonthesis option. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

Research studies are required in the required courses, and at the conclusion of all course work, an assessment of students independent research projects and papers is completed. The research study will focus on reviewing and analyzing contemporary research in a particular specialization within anthropology in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

### Core Courses—12 Credit Hours

These courses provide an in-depth understanding of the epistemological foundations of the discipline. Students are introduced to the theory and practice of anthropology at a level of synthesis that will prepare them for future doctoral study should they wish to pursue it. These courses also establish the foundations of understanding that will prepare students for nonacademic careers that employ anthropological perspectives and knowledge.

- ANG 6110 Archaeological Theory and Method (3 credit hours)
- ANG 6587 Seminar in Biological Anthropology (3 credit hours)
- ANG 6930 Seminar in Cultural Anthropology (3 credit hours)
- ANG 6931 Proseminar in Anthropology (3 credit hours)

### Required Courses—6 Credit Hours

The required courses designed for each track provide the fundamental disciplinary content and expertise necessary for competence in that specialization. Students will receive training in the theory, methods, and application of their respective areas of study.

- ANG 6123 Forensic Archaeology Field Methods (3 credit hours)
- ANG 6181C GIS Applications in Archaeology (3 credit hours)

### Elective Courses—9 Credit Hours

Electives will be selected in consultation with the student's faculty adviser. Students must select at least one course from each group. With prior approval, the student may take Anthropology electives other than those listed above, and may take

one elective (3 credit hours) in another department. Additional electives may be selected as they become available.

Under special circumstances, students may enroll in a graduate-level Directed Independent Study course or a Directed Independent Research course to fulfill their nonrestricted elective course requirements. These courses, like most graduate seminars, require written research reports. Enrollment in these courses requires written approval from the student's adviser. No more than 6 hours of graduate-level courses in Directed Independent Study or Directed Independent Research may be included in a student's program of study.

### Group 1

- ANG 5100 Archaeological Sciences (3 credit hours)
- ANG 5742 Problems in Forensic Anthropology (3 credit hours)
- ANG 6466C Advanced Human Osteology (3 credit hours)
- ANG 6740C Advanced Forensic Anthropology (3 credit hours)

### Group 2

- ANG 5165 Field Research in Maya Studies (3 credit hours)
- ANG 5272 Culture, Power, and Development (3 credit hours)
- ANG 5307 Peoples and Cultures of Latin America (3 credit hours)
- ANG 5341 Caribbean Cultures (3 credit hours)
- ANG 5437 Anthropology of Tourism (3 credit hours)
- ANG 5467 Nutritional Anthropology (3 credit hours)
- ANG 5620 Language and Culture (3 credit hours)
- ANG 5622 Language, Culture, and Pedagogy (3 credit hours)
- ANG 5741 Mortuary Archaeology (3 credit hours)
- ANG 5738 Advanced Medical Anthropology (3 credit hours)
- ANG 6168 The Ancient Maya (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)
- ANG 6701 Seminar in Applied Anthropology (3 credit hours)
- ANG 6801 Ethnographic Research Methods (3 credit hours)

## Thesis Option—6 Credit Hours

The thesis and oral defense are the culmination of the course work for those students who have elected the thesis option. Students electing to write a thesis must select a Thesis Advisory Committee. The student's faculty adviser will chair the Thesis Advisory Committee. The committee will consist of three members: two from Anthropology, one of whom is the Chair, and one from another Program or Department. Qualified individuals from outside the University of Central Florida may be eligible to serve as the third member of Thesis Advisory Committees. All members must be approved graduate faculty as cited in the most current UCF Graduate Catalog.

Students may enroll in thesis hours after they have successfully completed the three required courses. When a topic has been selected, students, in conjunction with their faculty adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee and a proposal hearing scheduled. All students must pass a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis. The thesis option is highly recommended for students interested in graduate work beyond the Master of Arts degree.

The completion of the thesis must be followed by an oral defense before the Thesis Advisory Committee. A successful format review, oral defense, and electronic submission of the thesis to the College of Graduate Studies for review completes the program requirements. Students are required to follow all procedures and timetables specified by the College of Graduate Studies.

- ANG 6971 Thesis (6 credit hours)
- Successful Oral Defense of Thesis

## Nonthesis Option—6 Credit Hours

Students selecting the nonthesis option take an additional 6 hours of elective course work for a total of 15 credit hours of electives.

- Electives (6 credit hours)

## Comprehensive Oral Examination

At the conclusion of course work, nonthesis students will be given a comprehensive oral examination. In consultation with the faculty

adviser, two additional faculty members shall be selected to serve on the Oral Examination Committee that will be chaired by the faculty adviser. This committee must be selected by the semester prior to the semester in which the student will take the oral exam. A successful comprehensive oral examination completes the requirements for the degree. Students are required to follow all procedures and timetables specified by the College of Graduate Studies. The examination will be based on the course work in the student's program of study. Students must notify the department's graduate program director in writing of their intent to take the exam at least one week before the date fixed for the examination. A committee composed of three faculty members will conduct the oral examination. The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail must retake the exam. Failure to pass the examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade.

### **Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.**

Degree-seeking students in the Archaeological Investigations in Forensics and Human Adaptation, the Cultural Competence in the Professions, and the Maya Studies options of the Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above. The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree.

Students who choose the thesis option will gain independent learning experiences through their thesis research where they are expected to design and conduct their own research which culminates with the writing and defense of their thesis. Students will also gain this experience through their core course requirements as each course contains

an independent research assignment. Students in the nonthesis option will gain independent learning experiences through all of their core courses, all of which contain an independent research component.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a personal statement of intent, and three letters of recommendation.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Personal statement of intent that includes the student's research interest, geographical area of interest, faculty they would like to work with, and future career plans (500 words).
- Three letters of recommendation.

The applicant's records will be reviewed on an individual basis for academic deficiencies and evaluated to assess the applicant's potential for success in the program. Supplemental course work may be recommended.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program to the applicant's career/academic goals, availability and match to a faculty adviser, and the applicant's potential for completing the degree. There is no automatic connection between acceptance as a non-degree-seeking student and acceptance into this degree-granting program. Please consult the graduate program director whenever questions arise.

Archaeological Investigations in Forensics and Human Adaptation MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Feb 15	Nov 1	
International Applicants	Jan 1	Jan 1	Jul 1	

Archaeological Investigations in Forensics and Human Adaptation MA	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 1	Feb 15	Sep 1	

The Master of Arts degree is conferred when students have fulfilled the requirements of either the thesis or nonthesis option. No graduate credit will be given for any grade lower than a B- (2.75), but the grade will be counted toward the GPA. Courses may be retaken to achieve a better grade; however, the unsatisfactory grade will remain in the program of study. In order to stay in good academic standing, students must maintain a minimum Graduate Status GPA of 3.0 in their program of study.

## CONTACT INFO

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 Howard Phillips Hall 309

Upon acceptance into the program students will be assigned a faculty adviser. Together the students and their advisers will determine the student's preliminary program of study, either in the thesis or nonthesis track. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

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### *Anthropology MA*

# Cultural Competence in the Professions MA

## TRACK DESCRIPTION

The Cultural Competence MA program provides training in strategies for providing effective cross-cultural services in areas such as education, healthcare, and international tourism.

Research studies are required in the required courses, and at the conclusion of all course work, an assessment of students independent research projects and papers is completed. The research study will focus on reviewing and analyzing contemporary research in a particular specialization within anthropology in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

## CURRICULUM

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

Degree-seeking students in the Cultural Competence in the Professions Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree. Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above.

### Core Courses—12 Credit Hours

These courses provide an in-depth understanding of the epistemological foundations of the discipline. Students are introduced to the theory and practice of anthropology at a level of synthesis that will prepare them for future doctoral study should they wish to pursue it. These courses also establish the foundations of understanding that will prepare students for nonacademic careers that employ anthropological perspectives and knowledge.

- ANG 6110 Archaeological Theory and Method (3 credit hours)
- ANG 6587 Seminar in Biological Anthropology (3 credit hours)
- ANG 6930 Seminar in Cultural Anthropology (3 credit hours)
- ANG 6931 Proseminar in Anthropology (3 credit hours)

### Required Courses—6 Credit Hours

The required courses designed for each track provide the fundamental disciplinary content and expertise necessary for competence in that



specialization. Students will receive training in the theory, methods, and application of their respective areas of study.

- ANG 6701 Seminar in Applied Anthropology (3 credit hours)
- ANG 6801 Ethnographic Research Methods (3 credit hours)

### **Elective Courses—9 Credit Hours**

Electives will be selected in consultation with the student's faculty adviser. Students must select at least one course from each group. With prior approval, the student may take Anthropology electives other than those listed above, and may take one elective (3 credit hours) in another department. Additional electives may be selected as they become available.

Under special circumstances, students may enroll in a graduate-level Directed Independent Study course or a Directed Independent Research course to fulfill their nonrestricted elective course requirements. These courses, like most graduate seminars, require written research reports. Enrollment in these courses requires written approval from the student's adviser. No more than 6 hours of graduate-level courses in Directed Independent Study or Directed Independent Research may be included in a student's program of study.

#### **Group 1**

- ANG 5272 Culture, Power, and Development (3 credit hours)
- ANG 5437 Anthropology of Tourism (3 credit hours)
- ANG 5467 Nutritional Anthropology (3 credit hours)
- ANG 5620 Language and Culture (3 credit hours)
- ANG 5622 Language, Culture, and Pedagogy (3 credit hours)
- ANG 5738 Advanced Medical Anthropology (3 credit hours)

#### **Group 2**

- ANG 5100 Archaeological Sciences (3 credit hours)
- ANG 5165 Maya Field Research (3 credit hours)
- ANG 5166 Problems in Maya Studies (3 credit hours)
- ANG 5167 Maya Hieroglyphs (3 credit hours)
- ANG 5228 Maya Iconography (3 credit hours)

- ANG 5307 Peoples and Cultures of Latin America
- ANG 5341 Caribbean Cultures (3 credit hours)
- ANG 5742 Problems in Forensic Anthropology (3 credit hours)
- ANG 6123 Forensic Archaeology Field Methods (3 credit hours)
- ANG 6168 The Ancient Maya (3 credit hours)
- ANG 6181C GIS Applications in Archaeology (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)
- ANG 6466C Advanced Human Osteology (3 credit hours)
- ANG 6740C Advanced Forensic Anthropology (3 credit hours)

### **Thesis Option—6 Credit Hours**

The thesis and oral defense are the culmination of the course work for those students who have elected the thesis option. Students electing to write a thesis must select a Thesis Advisory Committee. The student's faculty adviser will chair the Thesis Advisory Committee. The committee will consist of three members: two from Anthropology, one of whom is the Chair, and one from another Program or Department. Qualified individuals from outside the University of Central Florida may be eligible to serve as the third member of Thesis Advisory Committees. All members must be approved graduate faculty as cited in the most current UCF Graduate Catalog.

Students may enroll in thesis hours after they have successfully completed the three required courses. When a topic has been selected, students, in conjunction with their faculty adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee and a proposal hearing scheduled. All students must pass a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis. The thesis option is highly recommended for students interested in graduate work beyond the Master of Arts degree.

The completion of the thesis must be followed by an oral defense before the Thesis Advisory Committee. A successful format review, oral defense, and electronic submission of the thesis to the College of Graduate Studies for review completes the program requirements. Students are required to follow all

procedures and timetables specified by the College of Graduate Studies.

- ANG 6971 Thesis (6 credit hours)
- Successful Oral Defense of Thesis

### **Nonthesis Option—6 Credit Hours**

Students selecting the nonthesis option take an additional 6 hours of elective course work for a total of 15 credit hours of electives.

- Electives (6 credit hours)

### **Comprehensive Oral Examination**

At the conclusion of course work, nonthesis students will be given a comprehensive oral examination. In consultation with the faculty adviser, two additional faculty members shall be selected to serve on the Oral Examination Committee that will be chaired by the faculty adviser. This committee must be selected by the semester prior to the semester in which the student will take the oral exam. A successful comprehensive oral examination completes the requirements for the degree. Students are required to follow all procedures and timetables specified by the College of Graduate Studies. The examination will be based on the course work in the student's program of study. Students must notify the department's graduate program director in writing of their intent to take the exam at least one week before the date fixed for the examination. A committee composed of three faculty members will conduct the oral examination. The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail must retake the exam. Failure to pass the examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade.

### **Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.**

Degree-seeking students in the Archaeological Investigations in Forensics and Human Adaptation, the Cultural Competence in the Professions, and the Maya Studies options of the Anthropology MA

program may elect to follow either a thesis or a nonthesis program of study.

Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above. The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree.

Students who choose the thesis option will gain independent learning experiences through their thesis research where they are expected to design and conduct their own research which culminates with the writing and defense of their thesis. Students will also gain this experience through their core course requirements as each course contains an independent research assignment. Students in the nonthesis option will gain independent learning experiences through all of their core courses, all of which contain an independent research component.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a personal statement of intent, and three letters of recommendation.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Personal statement of intent that includes the student's research interest, geographical area of interest, faculty they would like to work with, and future career plans (500 words).
- Three letters of recommendation.

The applicant's records will be reviewed on an individual basis for academic deficiencies and evaluated to assess the applicant's potential for success in the program. Supplemental course work may be recommended.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program to the applicant's career/academic

goals, availability and match to a faculty adviser, and the applicant’s potential for completing the degree. There is no automatic connection between acceptance as a non-degree-seeking student and acceptance into this degree-granting program. Please consult the graduate program director whenever questions arise.

The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree. Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above.

Cultural Competence in the Professions MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Feb 15	Nov 1	
International Applicants	Jan 1	Jan 1	Jul 1	
International Transfer Applicants	Jan 1	Feb 15	Sep 1	

The Master of Arts degree is conferred when students have fulfilled the requirements of either the thesis or nonthesis option. No graduate credit will be given for any grade lower than a B- (2.75), but the grade will be counted toward the GPA. Courses may be retaken to achieve a better grade; however, the unsatisfactory grade will remain in the program of study. In order to stay in good academic standing, students must maintain a minimum Graduate Status GPA of 3.0 in their program of study.

Upon acceptance into the program students will be assigned a faculty adviser. Together the students and their advisers will determine the student’s preliminary program of study, either in the thesis or nonthesis track. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

Research studies are required in the required courses, and at the conclusion of all course work, an assessment of students independent research projects and papers is completed. The research study will focus on reviewing and analyzing contemporary research in a particular specialization within anthropology in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

**CONTACT INFO**

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 tdupras@mail.ucf.edu  
 Telephone 407-823-6725  
 Department of Anthropology  
 Howard Phillips Hall 309

*Anthropology MA*

**Maya Studies MA**

**TRACK DESCRIPTION**

The Maya Studies MA program provides intensive training in archaeological theory and method pertaining to the study of the Maya culture, both past and present.

**CURRICULUM**

**Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor’s Degree.**

Degree-seeking students in the Maya Studies Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

**Core Courses—12 Credit Hours**

These courses provide an in-depth understanding of the epistemological foundations of the discipline. Students are introduced to the theory and practice of anthropology at a level of synthesis that will prepare them for future doctoral study should they wish to pursue it. These courses also establish the foundations of understanding that will prepare students for nonacademic careers that employ anthropological perspectives and knowledge.

- ANG 6110 Archaeological Theory and Method (3 credit hours)
- ANG 6587 Seminar in Biological Anthropology (3 credit hours)
- ANG 6930 Seminar in Cultural Anthropology (3 credit hours)

- ANG 6931 Proseminar in Anthropology (3 credit hours)

### Required Courses—6 Credit Hours

The required courses designed for each track provide the fundamental disciplinary content and expertise necessary for competence in that specialization. Students will receive training in the theory, methods, and application of their respective areas of study.

- ANG 6168 The Ancient Maya (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)

### Electives—9 Credit Hours

Electives will be selected in consultation with the student's faculty adviser. Students must select at least one course from each group. With prior approval, the student may take Anthropology electives other than those listed above, and may take one elective (3 credit hours) in another department. Additional electives may be selected as they become available.

Under special circumstances, students may enroll in a graduate-level Directed Independent Study course or a Directed Independent Research course to fulfill their nonrestricted elective course requirements. These courses, like most graduate seminars, require written research reports. Enrollment in these courses requires written approval from the student's adviser. No more than 6 hours of graduate-level courses in Directed Independent Study or Directed Independent Research may be included in a student's program of study.

#### Group 1

- ANG 5165 Maya Field Research (3 credit hours)
- ANG 5166 Problems in Maya Studies (3 credit hours)
- ANG 5167 Maya Hieroglyphs (3 credit hours)
- ANG 5228 Maya Iconography (3 credit hours)
- CPO 5334 Contemporary Politics of the Mayan Region (3 credit hours)
- LAH 5937 Latin America: The Mayas (3 credit hours)

#### Group 2

- ANG 5100 Archaeological Sciences (3 credit hours)
- ANG 5272 Culture, Power, and Development (3 credit hours)

- ANG 5307 Peoples and Cultures of Latin America (3 credit hours)
- ANG 5341 Caribbean Cultures (3 credit hours)
- ANG 5437 Anthropology of Tourism (3 credit hours)
- ANG 5467 Nutritional Anthropology (3 credit hours)
- ANG 5620 Language and Culture (3 credit hours)
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- ANG 5741 Mortuary Archaeology (3 credit hours)
- ANG 5742 Problems in Forensic Anthropology (3 credit hours)
- ANG 5738 Advanced Medical Anthropology (3 credit hours)
- ANG 6123 Forensic Archaeology Field Methods (3 credit hours)
- ANG 6181C GIS Applications in Archaeology (3 credit hours)
- ANG 6466C Advanced Human Osteology (3 credit hours)
- ANG 6701 Seminar in Applied Anthropology (3 credit hours)
- ANG 6740C Advanced Forensic Anthropology (3 credit hours)
- ANG 6801 Ethnographic Research Methods (3 credit hours)

### Thesis Option—6 Credit Hours

The thesis and oral defense are the culmination of the course work for those students who have elected the thesis option. Students electing to write a thesis must select a Thesis Advisory Committee. The student's faculty adviser will chair the Thesis Advisory Committee. The committee will consist of three members: two from Anthropology, one of whom is the Chair, and one from another Program or Department. Qualified individuals from outside the University of Central Florida may be eligible to serve as the third member of Thesis Advisory Committees. All members must be approved graduate faculty as cited in the most current UCF Graduate Catalog.

Students may enroll in thesis hours after they have successfully completed the three required courses. When a topic has been selected, students, in conjunction with their faculty adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee and a proposal hearing scheduled. All students must pass

a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis. The thesis option is highly recommended for students interested in graduate work beyond the Master of Arts degree.

The completion of the thesis must be followed by an oral defense before the Thesis Advisory Committee. A successful format review, oral defense, and electronic submission of the thesis to the College of Graduate Studies for review completes the program requirements. Students are required to follow all procedures and timetables specified by the College of Graduate Studies.

- ANG 6971 Thesis (6 credit hours)
- Successful Thesis Defense

### **Nonthesis Option—6 Credit Hours**

Students selecting the nonthesis option take an additional 6 hours of elective course work for a total of 15 credit hours of electives.

- Electives (6 credit hours)

### **Comprehensive Oral Examination**

At the conclusion of course work, nonthesis students will be given a comprehensive oral examination. In consultation with the faculty adviser, two additional faculty members shall be selected to serve on the Oral Examination Committee that will be chaired by the faculty adviser. This committee must be selected by the semester prior to the semester in which the student will take the oral exam. A successful comprehensive oral examination completes the requirements for the degree. Students are required to follow all procedures and timetables specified by the College of Graduate Studies.

The examination will be based on the course work in the student's program of study. Students must notify the department's graduate program director in writing of their intent to take the exam at least one week before the date fixed for the examination. A committee composed of three faculty members will conduct the oral examination. The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail must retake the exam. Failure to pass the

examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade.

### **Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.**

Degree-seeking students in the Archaeological Investigations in Forensics and Human Adaptation, the Cultural Competence in the Professions, and the Maya Studies options of the Anthropology MA program may elect to follow either a thesis or a nonthesis program of study.

Both options require 33 hours of course work, at least 50 percent of which must be at the 6000 level or above. The thesis option is designed for students who plan to enter doctoral programs, while the nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree.

Students who choose the thesis option will gain independent learning experiences through their thesis research where they are expected to design and conduct their own research which culminates with the writing and defense of their thesis. Students will also gain this experience through their core course requirements as each course contains an independent research assignment. Students in the nonthesis option will gain independent learning experiences through all of their core courses, all of which contain an independent research component.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a personal statement of intent, and three letters of recommendation.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Personal statement of intent that includes the student's research interest, geographical area of

interest, faculty they would like to work with, and future career plans (500 words).

- Three letters of recommendation.

The applicant's records will be reviewed on an individual basis for academic deficiencies and evaluated to assess the applicant's potential for success in the program. Supplemental course work may be recommended.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program to the applicant's career/academic goals, availability and match to a faculty adviser, and the applicant's potential for completing the degree. There is no automatic connection between acceptance as a non-degree-seeking student and acceptance into this degree-granting program. Please consult the graduate program director whenever questions arise.

Maya Studies MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Feb 15	Nov 1	
International Applicants	Jan 1	Jan 1	Jul 1	
International Transfer Applicants	Jan 1	Feb 15	Sep 1	

## CONTACT INFO

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# Applied Learning and Instruction MA

## PROGRAM DESCRIPTION

The Master of Arts in Applied Learning and Instruction program is designed for students from

diverse academic majors who have an interest in the application of psychological theories and research to improving learning, instruction, and training, in a variety of instructional contexts. Graduates of the program will be prepared for a wide range of professional education, government, and industry positions, and for conducting activities such as instruction, training, evaluation, and consulting.

Students are able to tailor the program to meet their particular needs and interests by choosing among a large variety of courses for their concentration, including courses in teaching, instructional design, program evaluation, and psychological foundations.

Specialization and core courses are offered in the areas of the psychology of teaching and learning, motivation, human development, measurement, and research methodology. All students will be required to complete a comprehensive examination before completing the program.

## CURRICULUM

The Applied Learning and Instruction MA program requires a minimum of 33 credit hours beyond the bachelor's degree including 15 credit hours of core courses, 12 credit hours of specialization, and 6 credit hours of a research component. The research component can be completed by choosing the thesis option or taking two alternative courses. The program of study can be tailored to meet the specific needs of each student.

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

In addition to the course work, students are expected to enroll continuously, excluding summer semesters. If a program of study must be interrupted, the student may apply for leave status not to exceed one calendar year. For those pursuing the thesis option, continuous enrollment is required in three hours of thesis until graduation, including summers.

### Core Courses—15 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDP 6213 Applied Learning and Instruction Seminar I (3 credit hours)
- EDP 6217 Applied Learning and Instruction Seminar II (3 credit hours)

- EDF 6216 Motivation in Learning and Performance (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

### **Specialization Courses—12 Credit Hours**

Students have the choice of taking specialization courses in multiple areas. Specialization courses may be taken within one specialization, or from multiple specializations. The purpose of this choice is to provide course offerings which appeal to student interest, but concurrently facilitate depth of knowledge in a particular discipline.

The student, program director and student advisers together determine a course of study to meet the student's needs while simultaneously developing core knowledge in a specific area with the adviser's approval. In addition, the adviser may approve courses taken as part of a UCF certificate program for this area of the MA (up to 12 credit hours). The adviser must approve all specialization courses.

#### **Psychological Foundations\***

- DEP 5057 Developmental Psychology (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6141 Human Intelligence (3 credit hours)
- EDP 6056 Advanced Educational Psychology (3 credit hours)
- SPS 6225 Behavioral and Observational Analysis of Classroom Interactions in Schools (3 credit hours)
- EGC 6431 Guiding Human Relations I (3 credit hours)
- EGC 6432 Guiding Human Relations II (3 credit hours)

#### **Business/Training\***

- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- PSY 6216 Advanced Research Methodology I (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- MAN 6285 Change Management (3 credit hours)

#### **Instructional Design\***

- EME 6607 Planned Change in Instructional Technology (3 credit hours)

- EME 6602 Integrating Technology into Curriculum (3 credit hours)
- EME 6601 Instructional Simulation Design (3 credit hours)
- EME 6457 Distance Education (3 credit hours)
- EME 6507 Multimedia For Learning I (3 credit hours)
- EME 6613 Instructional Systems Design (3 credit hours)
- EME 6405 Application Software (3 credit hours)
- EME 6614 Instructional Game Design (3 credit hours)
- EME 6705 Administration of Instructional Systems (3 credit hours)
- EME 6053 Current Trends in Instructional Technology (3 credit hours)

#### **Teaching\***

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- ESE 6235 Curriculum Design (3 credit hours)
- EME 5053 Electronic Resources in Education (3 credit hours)

#### **Program Evaluation\***

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDG 6285 Evaluation of School Programs (3 credit hours)
- ESE 6146 Curriculum Evaluation (3 credit hours)

\*Other electives to be determined by adviser with program approval.

#### **Research Component—6 Credit Hours**

- EDF 6971 Thesis (6 credit hours)

OR

- EDF 6918 Directed Research (3 credit hours)
- AND
- Approved Research Elective (3 credit hours)

## Residency Requirement

Once admitted, the student is expected to enroll continuously, excluding summer sessions. If a program of study must be interrupted, the student may apply for leave status not to exceed one calendar year. For those pursuing the thesis option, continuous enrollment is required in three hours of thesis credit until graduation, including summers.

## Publication Requirement

The MA program requires the completion of a research project. Research projects are independent learning activities in which students must apply, reflect upon, and refine knowledge and skills required in the program. By the end of the fourth semester in this program, each student must satisfy a scholarly product requirement (Review I). This requirement can be met in one of two ways: students can submit a research study to a refereed journal, or submit a proposal for a presentation at an annual conference of a national or local organization. The student must be primarily responsible for conceptualizing, carrying out, and reporting the results in both of these options. The student is responsible for obtaining approval of the product from his or her master's committee.

## Thesis Proposal and Defense

If electing the thesis option, and after successfully completing Review I (i.e., satisfying the scholarly product requirement), students can submit a thesis proposal to their master's committee and submit the accompanying Thesis Prospectus form to the College's Graduate Office. The master's committee will meet and determine whether to accept or reject the prospectus. A prospectus can be accepted provisionally if the student follows the committee's suggestions in the thesis. Upon completion of the full thesis, a defense will be scheduled. This defense will be scheduled and conducted in accordance with the graduate policies for thesis and thesis completion.

The MA program requires the completion of a research project. Research projects are independent learning activities in which students must apply, reflect upon, and refine knowledge and skills required in the program. By the end of the fourth semester in this program, each student must satisfy a scholarly product requirement (Review I). This requirement can be met in one of two ways: students can submit a research study to a refereed

journal, or submit a proposal for a presentation at an annual conference of a national or local organization. The student must be primarily responsible for conceptualizing, carrying out, and reporting the results in both of these options. The student is responsible for obtaining approval of the product from his or her master's committee.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to meeting the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- One page statement of professional interests and goals addressing why the applicant is interested in the degree program.
- A scholarly or professional writing sample.

Applied Learning and Instruction MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Educational Studies  
 Education 220N



# Sociology MA, Applied

- Domestic Violence MA

## PROGRAM DESCRIPTION

The Department of Sociology offers a graduate program leading to a Master of Arts degree in Applied Sociology. Beyond a curriculum appropriate for general applied sociology, the program includes a graduate track in Domestic Violence as well as instruction and opportunity pertaining to the study of deviant behavior, social disorganization, social inequalities, and urban/environmental sociology.

A primary focus of the program is the variety of social problems in society with special attention given to the central Florida area and the different community policies that have evolved to confront them. Toward this objective, the program promotes the application of sociological and social psychological knowledge, principles, and research skills in a variety of organizational, community, and institutional settings. Examples of competencies in applied sociology include effective skills in program design and evaluation research; planning, feasibility and needs assessment studies; data management, analysis and presentation; and the application of general systems and social conflict theories to organizational problems, community development and planned change.

## CURRICULUM

Degree-seeking students in the Applied Sociology program may choose either the thesis or a nonthesis course of study. Both options require 30 hours of course work, at least half of which must be at the 6000 level or above. The thesis option is designed for students who plan to enter doctoral programs and is highly recommended for students interested in community college teaching. The nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree.

### Total Required Hours for MA—30 Credit Hours Minimum beyond the Bachelor's Degree.

The Master of Arts degree is conferred when

students have fulfilled the requirements of either the thesis or nonthesis option. Students must earn a grade of "B" (3.0) or better in the program's required courses. Courses may be retaken to achieve a better grade; however, students must maintain a minimum GPA of 3.0 in their program of study.

By the end of their first nine hours of course work in the program, students should select a permanent faculty adviser and determine their preliminary program of study, either in the thesis or nonthesis track. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

### Core Courses—12 Credit Hours

Students in the nonthesis option are required to complete a research study in each of the 12 hours of required courses to provide independent learning.

- SYA 5625 Proseminar (3 credit hours): Should be taken as early as possible in academic career.
- SYA 6126 Social Theory (3 credit hours)
- SYA 6305 Social Research (3 credit hours)
- SYA 6455 Research Analysis (3 credit hours)

### Electives—12 Credit Hours

Students will select a minimum of 12 credit hours of nonrestricted electives in consultation with their faculty adviser. No more than 3 hours may be taken in UCF graduate programs outside the department. The department's graduate director must approve all courses taken outside the department prior to enrollment.

Under special circumstances, students may enroll in a graduate-level Directed Independent Study course or a Directed Independent Research course to fulfill their nonrestricted elective course requirements. These courses, like most graduate seminars, require written research reports. Enrollment in these courses requires written approval from the student's adviser. No more than 6 hours of graduate-level courses in Directed Independent Study or Directed Independent Research may be included in a student's program of study.

Nonthesis students may substitute up to 6 hours of their elective course work by completing a graduate practicum/internship (SYA 6946). The practicum must be approved by the student's permanent adviser and the department's graduate program director.

### **Thesis Option—6 Credit Hours**

The thesis option requires a minimum of 6 hours of thesis credit and a successful defense of a thesis. Students may enroll in thesis hours after they have successfully completed the four required courses and their thesis committee has been approved by the department and college.

Students' permanent faculty adviser will chair their committee, which also will include two additional graduate sociology faculty members in the department. The additional members of the thesis committee are selected in consultation with the student's permanent faculty adviser.

When a topic has been selected, students, in conjunction with their permanent adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee and a proposal hearing scheduled. All students must pass a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis.

- Thesis (6 credit hours)

### **Nonthesis Option—6 Credit Hours**

The nonthesis option requires that students complete SYA 6657 Program Design and Evaluation and 3 additional hours of elective course work in their area of specialization. The Program Design and Evaluation course (SYA 6657) requires community-oriented research projects to develop research skills in sociology.

- SYA 6657 Program Design and Evaluation
- Elective (3 credit hours)

### **Comprehensive Examination**

Nonthesis students must take and pass a final written examination. The examination will be based on the sociology course work contained in the student's program of study, which includes the five courses required for the nonthesis option.

Before students may register for the final examination, they must earn a grade of "B" (3.0) or better in each of the five required courses. The examination will be given once each semester. Students must notify the department's graduate program director in writing of their intent to take the exam at least one week before the date fixed

for the examination. A committee composed of at least three graduate sociology faculty members in the department will supervise the nonthesis examination.

The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail to pass the examination must retake it at the next scheduled examination period. Failure to pass the examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade. A study guide is available to assist students in preparing for the examination.

As with all graduate programs, independent learning is an important component in the Applied Sociology master's program. Students will demonstrate independent learning through research seminars and the thesis (thesis students only). The nonthesis option requires the course, SYA 6657, program design and evaluation which requires a research study as the independent learning experience. Also, research studies are included in each of the 15 hours of required courses to provide independent learning.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation, including at least two from academic sources familiar with the applicant's abilities.
- A personal statement of 250-500 words identifying areas of research interest, and describing the applicant's academic and professional experiences and goals.

The applicant’s records will be reviewed on an individual basis for academic deficiencies and evaluated to assess their potential for success in the program. Supplemental course work may be recommended.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program to the applicant’s career/academic goals, and the applicant’s potential for completing the degree. Note also that there is no automatic connection between acceptance as a non-degree-seeking student and acceptance into this degree-granting program. Consult the graduate program director whenever questions arise.

<b>Sociology MA, Applied</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 1	Jul 1	Dec 1	Apr 1
International Applicants	Jan 1	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 1	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Phillips Hall 403

.....  
*Sociology MA, Applied*

**Domestic Violence MA**

**TRACK DESCRIPTION**

The Department of Sociology offers a graduate program leading to a Master of Arts degree in Applied Sociology. Beyond a curriculum appropriate for general applied sociology, the program includes a graduate track in Domestic Violence as well as instruction and opportunity

pertaining to the study of deviant behavior, social disorganization, social inequalities, and urban/ environmental sociology.

**CURRICULUM**

**Total Required Hours for MA—30 Credit Hours Minimum beyond the Bachelor’s Degree.**

Degree-seeking students in the Applied Sociology program may choose either the thesis or a nonthesis course of study. Both options require 30 hours of course work, at least half of which must be at the 6000 level or above.

The thesis option is designed for students who plan to enter doctoral programs and is highly recommended for students interested in community college teaching. The nonthesis option is more appropriate for students entering or continuing professional careers following the MA degree. The Master of Arts degree is conferred when students have fulfilled the requirements of either the thesis or nonthesis option. Students must earn a grade of “B” (3.0) or better in the program’s required courses. Courses may be retaken to achieve a better grade; however, students must maintain a minimum GPA of 3.0 in their program of study.

By the end of their first nine hours of course work in the program, students should select a permanent faculty adviser and determine their preliminary program of study, either in the thesis or nonthesis track. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

**Core Courses—12 Credit Hours**

Students in the nonthesis option are required to complete a research study in each of the 12 hours of required courses to provide independent learning.

- SYA 5625 Proseminar (3 credit hours): Should be taken as early as possible in academic career.
- SYA 6126 Social Theory (3 credit hours)
- SYA 6305 Social Research (3 credit hours)
- SYA 6455 Research Analysis (3 credit hours)

**Electives—12 Credit Hours**

Students who elect to pursue the Domestic Violence Track as a special area of study within the

Department's Master of Arts in Applied Sociology Program must complete the following requirements in place of their 12-hour elective course work.

**The following two courses must be completed. (6 credit hours)**

- SYP 5566 Seminar on Domestic Violence: Theory, Research and Social Policy (3 credit hours)
- SYP 6563 Reactions to Domestic Violence (3 credit hours)

Choose two of the following restricted electives. (6 credit hours)

- SYA 6657 Program Design and Evaluation\* (3 credit hours)
- SYP 6561 Child Abuse in Society (3 credit hours)
- SYP 6565 Elder Abuse and Neglect (3 credit hours)
- SYP 5525 Sociological Criminology (3 credit hours)
- SYP 6515 Deviant Behavior Issues (3 credit hours)
- SYP 6522 Sociological Perspectives on Victims (3 credit hours)
- SYP 6546 Crime, Law, Inequality (3 credit hours)
- SYD 6809 Seminar on Gender Issues (3 credit hours)

\* SYA 6657 cannot be taken for elective credit by nonthesis students because it is a required course for this option.

**Thesis Option—6 Credit Hours**

The thesis option requires a minimum of 6 hours of thesis credit and a successful defense of a thesis. Students may enroll in thesis hours after they have successfully completed the four required courses and their thesis committee has been approved by the department and college.

Students' permanent faculty adviser will chair their committee, which also will include two additional graduate sociology faculty members in the department. The additional members of the thesis committee are selected in consultation with the student's permanent faculty adviser.

When a topic has been selected, students, in conjunction with their permanent adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee

and a proposal hearing scheduled. All students must pass a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis.

- Thesis (6 credit hours)

**Nonthesis Option—6 Credit Hours**

The nonthesis option requires that students complete SYA 6657 Program Design and Evaluation and 3 additional hours of elective course work in their area of specialization. The Program Design and Evaluation course (SYA 6657) requires community-oriented research projects to develop research skills in sociology.

- SYA 6657 Program Design and Evaluation
- Elective (3 credit hours)

**Comprehensive Examination**

Nonthesis students must take and pass a final written examination. The examination will be based on the sociology course work contained in the student's program of study, which includes the five courses required for the nonthesis option.

Before students may register for the final examination, they must earn a grade of "B" (3.0) or better in each of the five required courses. The examination will be given once each semester. Students must notify the department's graduate program director in writing of their intent to take the exam at least one week before the date fixed for the examination. A committee composed of at least three graduate sociology faculty members in the department will supervise the nonthesis examination.

The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail to pass the examination must retake it at the next scheduled examination period. Failure to pass the examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade. A study guide is available to assist students in preparing for the examination.

## **Total Required Hours for MA—30 Credit Hours Minimum beyond the Bachelor's Degree.**

The Master of Arts degree is conferred when students have fulfilled the requirements of either the thesis or nonthesis option. Students must earn a grade of "B" (3.0) or better in the program's required courses. Courses may be retaken to achieve a better grade; however, students must maintain a minimum GPA of 3.0 in their program of study.

By the end of their first nine hours of course work in the program, students should select a permanent faculty adviser and determine their preliminary program of study, either in the thesis or nonthesis track. Students should maintain close contact with their faculty adviser in order to develop a viable program of study and avoid graduation delays.

### **Core Courses—12 Credit Hours**

Students in the nonthesis option are required to complete a research study in each of the 12 hours of required courses to provide independent learning.

- SYA 5625 Proseminar (3 credit hours): Should be taken as early as possible in academic career.
- SYA 6126 Social Theory (3 credit hours)
- SYA 6305 Social Research (3 credit hours)
- SYA 6455 Research Analysis (3 credit hours)

### **Electives—12 Credit Hours**

Students will select a minimum of 12 credit hours of nonrestricted electives in consultation with their faculty adviser. No more than 3 hours may be taken in UCF graduate programs outside the department. The department's graduate director must approve all courses taken outside the department prior to enrollment.

Under special circumstances, students may enroll in a graduate-level Directed Independent Study course or a Directed Independent Research course to fulfill their nonrestricted elective course requirements. These courses, like most graduate seminars, require written research reports. Enrollment in these courses requires written approval from the student's adviser. No more than 6 hours of graduate-level courses in Directed Independent Study or Directed Independent Research may be included in a student's program of study.

Nonthesis students may substitute up to 6 hours of their elective course work by completing a graduate practicum/internship (SYA 6946). The practicum must be approved by the student's permanent adviser and the department's graduate program director.

### **Thesis Option—6 Credit Hours**

The thesis option requires a minimum of 6 hours of thesis credit and a successful defense of a thesis. Students may enroll in thesis hours after they have successfully completed the four required courses and their thesis committee has been approved by the department and college.

Students' permanent faculty adviser will chair their committee, which also will include two additional graduate sociology faculty members in the department. The additional members of the thesis committee are selected in consultation with the student's permanent faculty adviser.

When a topic has been selected, students, in conjunction with their permanent adviser, will develop a thesis proposal. Copies of the proposal will be routed to members of their thesis committee and a proposal hearing scheduled. All students must pass a proposal hearing as well as a final oral defense of their thesis. Students who elect to write a thesis should become familiar with the university's requirements and deadlines for organizing and submitting the thesis.

- Thesis (6 credit hours)

### **Nonthesis Option—6 Credit Hours**

The nonthesis option requires that students complete SYA 6657 Program Design and Evaluation and 3 additional hours of elective course work in their area of specialization. The Program Design and Evaluation course (SYA 6657) requires community-oriented research projects to develop research skills in sociology.

- SYA 6657 Program Design and Evaluation
- Elective (3 credit hours)

### **Comprehensive Examination**

Nonthesis students must take and pass a final written examination. The examination will be based on the sociology course work contained in the student's program of study, which includes the five courses required for the nonthesis option.

Before students may register for the final examination, they must earn a grade of “B” (3.0) or better in each of the five required courses. The examination will be given once each semester. Students must notify the department’s graduate program director in writing of their intent to take the exam at least one week before the date fixed for the examination. A committee composed of at least three graduate sociology faculty members in the department will supervise the nonthesis examination.

The grading system for the examination is as follows: 1) Pass with Distinction, 2) Pass, 3) Conditional Pass, and 4) Fail. Students who receive a grade of Conditional Pass will be required to complete additional work as determined by the grading committee. Students who fail to pass the examination must retake it at the next scheduled examination period. Failure to pass the examination on the second attempt will result in dismissal from the program. Students who indicate their intent to take the examination but do not take the exam will be awarded a failing grade. A study guide is available to assist students in preparing for the examination.

As with all graduate programs, independent learning is an important component in the Applied Sociology master’s program. Students will demonstrate independent learning through research seminars and the thesis (thesis students only). The nonthesis option requires a research study in the SYA 6657 course on Program Design and Evaluation. In addition, research studies are required in each of the 15 hours of required courses to provide independent learning.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, and a personal statement identifying areas of research interest and identifying and describing the applicants academic and professional experience and goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.

- Three letters of recommendation, including at least two from academic sources familiar with the applicant’s abilities.
- A personal statement of 250-500 words identifying areas of research interest, and describing the applicant’s academic and professional experiences and goals.

The applicant’s records will be reviewed on an individual basis for academic deficiencies and evaluated to assess their potential for success in the program. Supplemental course work may be recommended.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program to the applicant’s career/academic goals, and the applicant’s potential for completing the degree. Note also that there is no automatic connection between acceptance as a non-degree-seeking student and acceptance into this degree-granting program. Consult the graduate program director whenever questions arise.

Domestic Violence MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 1	Jul 1	Dec 1	Apr 1
International Applicants	Jan 1	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 1	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Sociology and Anthropology  
 Phillips Hall 403

# Art Education MA

## PROGRAM DESCRIPTION

With the exception of the Community College Teaching track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.

The College of Education offers a Master of Arts in Art Education. The program is planned to provide the art-oriented person with a degree that includes certification. The program meets all state certification requirements. The MA also includes a Community College Teaching Track, which is designed for individuals planning to teach at that level and not requiring state teacher certification.

## CURRICULUM

The MA in Art Education requires a minimum of 37 credit hours beyond the bachelor's degree, including 15 credit hours of core courses, 16 credit hours of specialization, and six credit hours of internship.

### Total Required Hours for MA—37 Credit Hours Minimum beyond the Bachelor's Degree.

The MA requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

### Core Courses—15 Credit Hours

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Specialization Courses—16 Credit Hours

- ARE 5359 Teaching Art K-12 (4 credit hours)
- ARE 6905 Research Trends in Art Education (3 credit hours)
- ARE Elective Number One (with approval of adviser, 3 credit hours)
- ARE Elective Number Two (with approval of adviser, 3 credit hours)
- ARE Elective Number Three (with approval of adviser, 3 credit hours)

### Internship—6 Credit Hours

- ARE 6946 Graduate Internship (6 credit hours)

Satisfactory completion of Graduate Internship (ARE 6946, 6 credit hours) requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State Board of Education Rule 6A-5.065.

### Additional Program Requirements

- Complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Pass all required sections of the Florida Teacher Certification Examination.
- Students are required to have 30 credit hours of art course work to meet certification requirements to teach art in grades K-12. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

The MA requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the

accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to a MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into a MEd program.

Art Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Teaching and Learning Principles  
 Education 122U

# Art Education MEd

## PROGRAM DESCRIPTION

**This is a state-approved teacher education program that is currently undergoing revision in response to a change in Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a master's program in Art Education, leading to a Master of Education (MEd) degree. The MEd degree is designed to meet the expanding needs of the art teacher. Students in the program examine contemporary problems in art education, review recent curriculum developments, study innovations in art education, explore interdisciplinary concepts, and become involved in research problems specific to the art teacher. This degree requires previous certification in art.

## CURRICULUM

The MEd in Art Education requires a minimum of 36 credit hours beyond the bachelor's degree and offers a thesis, research report, or course based research study options. All students are required to take 9 credit hours of core courses, and 21 credit hours of a specialization option that must be approved by an adviser.

### **Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The MEd in Art Education requires a minimum of 36 credit hours beyond the bachelor's degree and offers a thesis, research report, or course based research study options. All students are required to take 9 credit hours of core courses, and 21 credit hours of a specialization option that must be approved by an adviser.

The MEd allows students to select from a thesis, research report, or course based research study. If a course based research study is selected, the research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research



based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### **Core Courses—9 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

### **Specialization Courses—21 Credit Hours**

Must be approved by an adviser and can include two studio ART courses.

### **Research Report, Thesis, or Nonthesis—6 Credit Hours**

Choose one of the following options.

#### **Research Report—6 Credit Hours**

- ARE 6905 Research Trends in Art Education (3 credit hours)
- ARE 6909 Research Report (2, 1 credit hours)

#### **Thesis—6 Credit Hours**

- EDF 6401 Statistics for Educational Data (3 credit hours)
- ARE 6971 Thesis (2,1 credit hours)

#### **Nonthesis (approved by adviser)—6 Credit Hours**

- Six hours of additional course work.

The MEd allows students to select from a thesis, research report, or course based research study. If a course based research study is selected, the research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A current Florida Professional Teaching Certificate in the program's subject area or have completed all requirements for that Professional Teaching Certificate.
- Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into a MEd program.

<b>Art Education MEd</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## **CONTACT INFO**

Thomas Brewer PhD  
 Professor  
 Program Director  
 tbrewer@mail.ucf.edu  
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 Department of Teaching and Learning Principles  
 Education 122U

# Biology MS

## PROGRAM DESCRIPTION

The Master of Science in Biology program offers the following areas of specialization: Botany, Cell Biology, Development, Ecology, Evolution, Genetics, Limnology, Conservation Biology, and Zoology.

## CURRICULUM

The Master of Science in Biology program offers a thesis and nonthesis option for students. The thesis option requires a minimum of 30 credit hours, 15 of which must be at the 6000 level. Students choosing the thesis option must receive a commitment from a faculty adviser for admission into the program. The nonthesis option requires a minimum of 40 credit hours, 20 of which must be at the 6000 level.

### Total Required Hours for MS—30 or 40 Credit Hours Minimum beyond the Bachelor's Degree.

The Biology MS program offers thesis and nonthesis options. The thesis option requires a minimum of 30 credit hours, 15 of which must be at the 6000 level. Students choosing the thesis option must receive a commitment from a faculty adviser for admission into the program. The nonthesis option requires a minimum of 40 credit hours, 20 of which must be at the 6000 level.

All nonthesis students are required to take a research report course (BSC 6909), where they are paired with individual faculty and organize and summarize knowledge in a research report. In addition, most graduate courses require reading and critical analysis of the primary literature in biology, and students are required to make presentations of their analysis or present proposals outlining a series of integrated experiments that would further knowledge in the field.

### Thesis Option—30 Credit Hours

#### Required Courses—7 Credit Hours

- PCB 6095 Professional Development in Biology I (1 credit hour)
- PCB 6096 Professional Development in Biology II (1 credit hour)
- BSC 6938 Biology Seminar (1 credit hour – taken twice)

- STA 5175 Biometry (3 credit hours)\* or STA 5206 Statistical Analysis (3 credit hours)

### Remaining Credit Hours—17 Credit Hours

A minimum of 17 additional credit hours must be selected in conjunction with the faculty adviser and advisory committee members and approved by the program graduate coordinator.

#### Thesis—6 Credit Hours

- BSC 6971 Thesis (6 credit hours)

\*If a student is deemed to have adequate training in statistics, the requirement for STA 5175 can be waived. If the waiver is granted, the student will take an additional 3 hours of elective credit to meet the 30 total hours required in the thesis program of study.

### Examination

A thesis proposal defense is required. The purpose of the proposal defense is to present the planned research and its foundations as a seminar to an interested audience of peers and the advisory committee. The proposal should be distributed to advisory committee members two weeks in advance of the defense, and the defense should be advertised (contact the graduate program administrator two weeks in advance). Public attendees typically have an opportunity to ask questions and comment following the seminar, after which the committee meets with the student to further discuss the proposal. The advisory committee must then vote to accept or reject the proposal. The thesis proposal defense must be passed a minimum of one semester preceding the oral thesis defense (i.e., the proposal defense and thesis defense cannot occur in the same semester).

### Nonthesis Option—40 Credit Hours

#### Group A—12 Credit Hours Minimum

Students must take at least one course approved by the graduate advisory committee from at least three of the five core areas listed below.

- Ecology
- Evolutionary Biology
- Genetics
- Physiology
- Cell and Developmental Biology

#### Group B—4 Credit Hours

- BSC 6909 Research Report (2 credit hours)

- BSC 6938 Biology Seminar (2 credit hours)

### Group C—22-24 Credit Hours

Restricted electives must be approved by the graduate advisory committee.

### Examinations

Nonthesis students must take the comprehensive exam no later than the semester preceding that of graduation. If a student fails the comprehensive examination, a minimum of four weeks must elapse before reexamination. The comprehensive exam may be taken a maximum of two times.

Nonthesis students are required to complete a research report as their independent learning experience.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants do not need to have an undergraduate degree in a biological science, but are expected to have 18 hours of biological sciences, including ecology and genetics. Courses in organic chemistry, calculus, and statistics are also recommended. After acceptance, minor deficiencies must be remedied by enrollment in the appropriate course at the first opportunity.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation
- Résumé
- A written statement of past experience and research, area of interest, and immediate and long-range goals.
- A score of at least 230 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not

the official language or applicants with degrees from a non-U.S. accredited institution.

Personal interviews are strongly encouraged but not required. Applicants who do not have a competitive GPA or GRE may occasionally be accepted if there is other convincing evidence of potential for high achievement and success. For U.S. applicants, GRE scores can be self reported prior by the submission deadline if the official score cannot be received in time. Admission will be conditional upon receipt of the official score. Applicants failing to satisfy minimum program criteria should submit a GRE Subject (Advanced) Biology Test score at or above the 50th percentile.

Biology MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

Students applying for summer or spring admission will be considered on an ad hoc basis but must complete their applications by December 1.

## CONTACT INFO

Graham A. J. Worthy PhD  
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 Program Director  
 gworthy@mail.ucf.edu  
 Telephone 407-823-4701  
 Department of Biology  
 BIO 301

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# Biotechnology MS

## PROGRAM DESCRIPTION

The Master of Science in Biotechnology program in the College of Medicine will prepare students to function in the industrial biotechnology environment. This program is designed to give students broad knowledge and training in the scientific and practical aspects of biotechnology.

It involves innovative, hands-on and multidisciplinary learning approaches to educate and train students in scientific aspects of biotechnology. The courses and research training required of all students in this program are designed to develop independent thinking, team work and communication skills, which are highly desirable in the biotechnology industry. Students will be provided an industrial perspective and an understanding of product development at the same time as they are trained in the biotechnology techniques required for such development.

In addition, students will have the option of completing an MBA degree in year 3 with the MS degree program. Completion of the MBA degree in addition to Biotechnology MS degree will provide appropriate training to perform jobs in laboratory that require scientific talent and management skills necessary in business administration.

## CURRICULUM

The Master of Science in Biotechnology program consists of 30 semester credit hours of graduate courses offered by the College of Medicine including 16 credits of required courses, 6 credits of restricted electives, 2 credits of graduate seminar and 6 credits of thesis research as detailed below.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

What makes this program unique is the focus on practical training offered to graduate students through master's thesis research in molecular biotechnology to perform jobs in laboratory environment that require scientific talent. MBA degree will provide management skills necessary in business administration.

### Required Courses—16 Credit Hours

- BSC 6407C Laboratory Methods in Molecular Biology (3 credit hours)
- BSC 6432 Structure-Function-Relationships of Biomolecular Science I (5 credit hours)
- BSC 6432 Structure-Function-Relationships of Biomolecular Science II (5 credit hours)
- MCB 5527 Genetic Engineering and Biotechnology (3 credit hours)

### Graduate Seminars—2 Credit Hours

Students will participate in at least two graduate seminar courses (MCB 6938, 1 credit). One of the seminar courses will prepare students for making professional presentations with emphasis in biotechnology, and the second seminar will involve participation of speakers from the biotechnology industry with emphasis on an industrial perspective on biotechnology applications and product development.

### Restricted Electives—6 Credit Hours

Students will select six credit hours of restricted electives from the list below.

- BSC 5418 Tissue Engineering (3 credit hours)
- CHS 6535 Forensic Analysis of Biological Materials (2 credit hours)
- CHS 6535L Forensic Analysis of Biological Materials (2 credit hours)
- CHS 6536 Forensic Analysis of DNA Data (2 credit hours)
- GEB 6516 Technology Commercialization (3 credit hours)
- IDS 5127 Foundation of Bio-Imaging Science (3 credit hours)
- MCB 5205 Infectious Processes (3 credit hours)
- MCB 5225 Molecular Biology of Disease (3 credit hours)
- MCB 5505 Molecular Virology (3 credit hours)
- MCB 5654 Applied Microbiology (3 credit hours)
- MCB 5722C Methods in Biotechnology (4 credit hours)
- MCB 5932 Current Topics in Molecular Biology (3 credit hours)
- MCB 6226 Molecular Diagnostics (3 credit hours)
- MCB 6417C Microbial Metabolism (3 credit hours)
- MCB 6938 Seminar (1-2 credit hours)
- PCB 5238 Immunobiology (3 credit hours)
- PCB 5239 Tumor Biology (3 credit hours)
- PCB 5275 Signal Transduction Mechanisms (3 credit hours)
- PCB 5937 Special Topics: Human Endocrinology (3 credit hours)
- PCB 6528 Plant Molecular Biology (3 credit hours)
- PCB 6596 Bioinformation and Genomics (3 credit hours)

- ZOO 5745C Essentials of Neuroanatomy (4 credit hours)

### **Thesis—6 Credit Hours**

Students will take a minimum of six credits of thesis research (MCB 6971) to complete their research and submit their thesis specializing in biotechnology research. During the first semester, students are expected to familiarize themselves with the research programs by direct interaction with faculty members, through attending seminars or by visiting faculty websites, before choosing a laboratory for thesis research. There will be no laboratory rotation. The student and the Thesis Adviser/Major Professor will jointly recommend an advisory committee comprised of at least three members. The committee composition must reflect expertise relevant to the student's thesis research and must be approved by the Graduate Committee. An oral thesis defense is required. The emphasis of thesis research will be on providing practical training to graduate students rather than research leading to scholarly publications in peer-reviewed journals.

### **Examinations**

- Students must pass a comprehensive exam to qualify for the Master of Science degree.

## **OPTION FOR ONE-YEAR, FULL-TIME MASTER OF BUSINESS ADMINISTRATION (MBA)**

Biotechnology MS students will have the option to complete a one-year, full-time MBA. The MBA program will begin each fall semester and the MBA Foundation courses (12 credit hours) are required for all non-business majors. They are offered in spring and summer and must be completed prior to starting the MBA Professional Core classes. Up to nine semester hours of graduate course work in MS Biotechnology at UCF may be transferred into the graduate MBA program.

### **Foundation Core—12 Credit Hours**

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)

- FIN 6404 Foundations of Finance (3 credit hours)

### **MBA Professional Core—39 Credit Hours**

#### **Typical Plan of Study**

#### **Fall (15 Credit Hours)**

- ACG 6425 Managerial Accounting Analysis (3 credit hours)
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- One elective course or internship (3 credit hours)

#### **Spring (15 Credit Hours)**

- BUL 6444 Law and Ethics (3 credit hours)
- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- Two elective courses and/or internship (6 credit hours)

#### **Summer (9 Credit Hours)**

- GEB 6365 International Business Analysis (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (3 credit hours)

For MBA course requirements, see [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu). More detailed information about the full-time MBA is available at [www.bus.ucf.edu/graduate/cgi-bin/site/sitew.cgi?page=/programs/mba\\_year.htx](http://www.bus.ucf.edu/graduate/cgi-bin/site/sitew.cgi?page=/programs/mba_year.htx).

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in life sciences.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- A written statement of research experience, area of interest, and immediate long range goals.

Admission into the MBA program will require a minimum grade point average of 3.3 in the last 60 hours of an undergraduate degree and a competitive GMAT score. However, for the MS Biotechnology students at UCF, GRE scores will be accepted in lieu of the GMAT. For admission criteria, visit [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu). The MBA program begins each fall semester.

Biotechnology MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

Henry Daniell PhD  
 Professor  
 Program Director  
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 Molecular Biology and Microbiology  
 BL 336

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# Business Administration MBA

- MBA (Lockstep Evening)
- Executive MBA
- MBA (1 year, full-time program)
- Professional MBA (Regional Campuses)

## PROGRAM DESCRIPTION

The College of Business Administration offers a Master of Business Administration (MBA) degree with four options for study: a full-time, one-year MBA; lockstep evening MBA; a professional MBA at regional campuses; and an executive MBA (Downtown).

The MBA program allows students to apply advanced theoretical concepts and knowledge from all functional areas of business through an analytical, decision-making process that focuses on solving practical problems. Students in the MBA program also learn to efficiently access, retrieve, and analyze information through technology. The program promotes the use of networking, leadership, and interpersonal competencies to develop and sustain effective relationships with peers, and to create an appreciation for the value of a diverse workforce.

## CURRICULUM

The total hours required for the master's in business administration is 39 credit hours minimum of which 30 credit hours are core courses and 9 credit hours are electives.

### Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor's Degree.

The MBA curriculum provides a challenging and creative learning environment in an intensive program of study that has a broad-based administrative emphasis. Recognizing that the management methods of tomorrow may bear little resemblance to techniques in current use, the program emphasizes sound general principles and decision-making techniques that provide a base for continued learning and professional development rather than upon business procedures that are subject to obsolescence.

### Prerequisite Courses

#### Foundation Core—12 Credit Hours

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student's prior

equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

**Professional Core—39 Credit Hours**

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

**Professional Core I: Decision-Making Tools—18 Credit Hours**

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\*Students planning to sit for the CPA Exam must substitute approved CPA courses for BUL 6444 and ACG 6425.

**Professional Core II: Decision Applications—12 Credit Hours**

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)

- MAN 6721 Applied Strategy and Business Policy (grade of “B-” or better is required in this course) (3 credit hours)

**Electives—9 Credit Hours**

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Business Administration MBA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

**CONTACT INFO**

Graduate Business Programs Office  
 Other  
 cbagrad@bus.ucf.edu  
 Telephone 407-UCF-GRAD  
 College Graduate Office  
 Business Administration 240

**Business Administration MBA****MBA (Lockstep Evening)****TRACK DESCRIPTION**

The Lockstep Evening MBA program is designed to accommodate the working professional or someone with no professional work experience.

**CURRICULUM****Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor's Degree.**

The Lockstep Evening MBA Program is targeted toward applicants who wish to obtain an MBA degree while continuing in their career path, students continuing from a bachelor's degree, or international students. This program offers evening courses. Students may attend on a part-time or full-time basis. Program highlights include:

- No work experience required
- Internship available option
- Guaranteed course offerings with two evenings per week schedule to accommodate working professionals
- Choice of elective options

**Foundation Core—12 Credit Hours**

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student's prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)

- FIN 6404 Foundations of Finance (3 credit hours)

**Professional Core—39 Credit Hours**

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core with decision-making tools courses and decision-application courses. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

**Decision-Making Tools—18 Credit Hours**

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\* Students planning to sit for the CPA exam must substitute approved CPA courses for ACG 6425 and BUL 6444.

**Decision Applications—12 Credit Hours**

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (grade of "B-" or better is required in this course) (3 credit hours)

**Electives—9 Credit Hours**

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from



the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

### **Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor's Degree.**

The MBA curriculum provides a challenging and creative learning environment in an intensive program of study that has a broad-based administrative emphasis. Recognizing that the management methods of tomorrow may bear little resemblance to techniques in current use, the program emphasizes sound general principles and decision-making techniques that provide a base for continued learning and professional development rather than upon business procedures that are subject to obsolescence.

### **Prerequisite Courses**

#### **Foundation Core—12 Credit Hours**

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student's prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

#### **Professional Core—39 Credit Hours**

The professional core consists of advanced course

work that substantially extends and applies knowledge developed in the foundation core. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

#### **Professional Core I: Decision-Making Tools—18 Credit Hours**

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\*Students planning to sit for the CPA Exam must substitute approved CPA courses for BUL 6444 and ACG 6425.

#### **Professional Core II: Decision Applications—12 Credit Hours**

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (grade of "B-" or better is required in this course) (3 credit hours)

#### **Electives—9 Credit Hours**

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, a bachelor's degree, three letters of recommendation, an essay, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu)).
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

MBA (Lockstep Evening)	Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jun 15	Nov 1	Mar 15
The Fall 2008 application deadline has been extended to July 15th.				
International Applicants		Jan 15	Jul 1	Nov 1
International Transfer Applicants		Mar 1	Sep 1	Dec 15

## CONTACT INFO

Robin Hoffer  
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 Telephone 407-823-6183  
 College of Business Administration Graduate Office  
 Business Administration 240

## *Business Administration MBA*

# Executive MBA

## TRACK DESCRIPTION

The Executive MBA program is designed to prepare executives and managers for the challenges they will face as they continue their career progression to positions of top leadership.

## CURRICULUM

### Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor's Degree.

The Executive MBA is a vehicle of continuous education designed specifically with the career professional in mind. It provides the optimal staging area to launch your career trajectory in the direction of your choice, be it a move from technical to managerial cadre, or upward mobility through the managerial/executive ranks. Choosing to continue your education to achieve an MBA is an important decision. We appreciate the competitive nature of the business world and have geared the EMBA curriculum so that you, as a participant in our program, will be well-equipped for future growth and challenges in your career. Our accelerated course of study (just 20 months with classes held all day Friday and Saturday, every other weekend) allows busy, working professionals to maintain their full-time position while earning a fully accredited MBA. The EMBA curriculum is revised continuously to reflect the demands and expectations of the business community. As such, courses and subjects may be different for future classes. Program highlights include:

- 20-month program with alternate Friday/Saturday classes
- High caliber peer group comprised of business leaders from diverse professional backgrounds
- Innovative pedagogy (consultative and case-based applied approach)
- International residency
- Prerequisite courses waived in lieu of professional work experience
- Personal interview required for admission

### Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor's Degree.

The MBA curriculum provides a challenging and creative learning environment in an intensive program of study that has a broad-based administrative emphasis. Recognizing that the management methods of tomorrow may bear little resemblance to techniques in current use, the program emphasizes sound general principles and decision-making techniques that provide a base for continued learning and professional development rather than upon business procedures that are subject to obsolescence.

## Prerequisite Courses

### Foundation Core—12 Credit Hours

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student's prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

### Professional Core—39 Credit Hours

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

#### Professional Core I: Decision-Making Tools—18 Credit Hours

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)

- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\*Students planning to sit for the CPA Exam must substitute approved CPA courses for BUL 6444 and ACG 6425.

#### Professional Core II: Decision Applications—12 Credit Hours

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (grade of "B-" or better is required in this course) (3 credit hours)

#### Electives—9 Credit Hours

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, a bachelor's degree, three letters of recommendation, an essay, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S.

accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu)).
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Executive MBA	Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jun 15	Nov 1	Mar 15
The Fall 2008 application deadline has been extended to July 15th.				
International Applicants		Jan 15	Jul 1	Nov 1
International Transfer Applicants		Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 UCF Executive Development Center  
 DTC 201D

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### *Business Administration MBA*

# MBA (1 year, full-time program)

## TRACK DESCRIPTION

The One-Year Full-Time MBA program is an accelerated twelve-month program focused on

students who wish to obtain an MBA and gain professional work experience at the same time.

## CURRICULUM

### Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor’s Degree.

The MBA (1 year, full-time program) Track is designed as a bridge for recent undergraduates to transition into the business world. Required classes are offered only during the daytime, and students complete the program as a group. Qualified students are accepted in order of application date up to the program limit. Minimum admission requirements for this program include a 550 GMAT or 1200 GRE score and a 3.3 GPA in the student’s last 60 hours in an undergraduate program. Program highlights include:

- Full-time, 12-month program
- Cohort group
- No work experience required
- Internship opportunities for experience

### Foundation Core—12 Credit Hours

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student’s prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

### Professional Core—39 Credit Hours

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core using

both decision-making tools courses and decision-applications courses. The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

### **Fall—15 Credit Hours**

Required classes meet 7:30 a.m. to 10:20 a.m, four days a week. Elective course times will vary.

- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ECO 6416 Applied Business Research Tools (3 credit hours)
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- ACG 6425 Managerial Accounting Analysis\* (3 credit hours)
- Elective or Internship Course GEB 6946 (3 credit hours)

### **Spring—15 Credit Hours**

Required classes meet 7:30 a.m. to 10:20 a.m, three days a week. Elective course times will vary.

- BUL 6444 Law and Ethics\* (3 credit hours)
- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- Elective and/or Internship Course GEB 6946 (3 credit hours)
- Elective and/or Internship Course GEB 6946 (3 credit hours)

### **Summer—9 Credit Hours**

Required classes meet throughout the summer.

- GEB 6365 International Business Analysis (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (grade of “B-” or better is required in this course) (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)

\*Students planning to sit for the CPA exam must substitute approved CPA courses for ACG 6425 and BUL 6444.

### **Four Semester Option—9 Credit Hours**

Follow the current One Year MBA course schedule for fall, spring and summer and use the following fall term to complete your internship or electives. If you choose this option, you will be able to walk

with the One Year MBA students at the summer graduation ceremony, and then receive your diploma after you complete the fall semester.

### **Internship—6 Credit Hours Maximum**

Begin your internship search immediately following your admission by submitting your resume to the Office for Corporate Partnerships and Career Management (OCPCM). Contact Dennis Farraro, OCPCM Assistant Director at (407) 823-JOBS or dferraro@bus.ucf.edu. To receive 3 credit hours GEB 6946, you must have your internship approved by the OCPCM and submit academic paperwork while completing the required 288 work hours.

### **Job Placement**

Full-time job placement is managed out of the OCPCM. Contact Diana Dorr at (407) 823-2981 or ddorr@bus.ucf.edu for more information.

### **Electives**

Take electives any term, including summer. Unrestricted electives are 5000 and 6000 level business courses, excluding all 6000 level MBA foundation courses. Restricted electives are a maximum of two courses or 6 credit hours taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course. Internships are a maximum 6 elective credit hours and may be used toward internship credit. Certain business electives will count as elective and certificate credit.\*

\*Must apply to Certificate program for this option.

### **Total Hours Required for MBA—39 Credit Hours Minimum beyond the Bachelor’s Degree.**

The MBA curriculum provides a challenging and creative learning environment in an intensive program of study that has a broad-based administrative emphasis. Recognizing that the management methods of tomorrow may bear little resemblance to techniques in current use, the program emphasizes sound general principles and decision-making techniques that provide a base for continued learning and professional development rather than upon business procedures that are subject to obsolescence.

## Prerequisite Courses

### Foundation Core—12 Credit Hours

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student's prior equivalent course work, provided such course work has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

### Professional Core—39 Credit Hours

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

### Professional Core I: Decision-Making Tools—18 Credit Hours

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\*Students planning to sit for the CPA Exam must substitute approved CPA courses for BUL 6444 and ACG 6425.

### Professional Core II: Decision Applications—12 Credit Hours

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy (grade of "B-" or better is required in this course) (3 credit hours)

### Electives—9 Credit Hours

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, a bachelor's degree, at least a 3.3 GPA or higher in the last 60 hours, three letters of recommendation, an essay, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu)).

- **Résumé.**
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

MBA (1 year, full-time program)	Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jun 15	Nov 1	Mar 15
The Fall 2008 application deadline has been extended to July 15th.				
International Applicants		Jan 15	Jul 1	Nov 1
International Transfer Applicants		Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Program Staff  
 cbagrad@bus.ucf.edu  
 Telephone 407-823-6183  
 College of Business Administration Graduate Office  
 Business Administration 240

Business Administration MBA  
**Professional MBA  
 (Regional Campuses)**

**TRACK DESCRIPTION**

The Professional MBA program is designed to prepare executives and managers for the challenges they will face as they continue their career progression to positions of top leadership.

**CURRICULUM**

**Total Hours Required for MBA—39  
 Credit Hours Minimum beyond the  
 Bachelor’s Degree.**

Modeled after our successful Executive MBA, the Professional MBA is targeted specifically at

the working professional with at least three years of professional work experience, and is offered at branch campus locations on a rotation schedule.

Using a practical, hands-on approach to learning, this cohort program meets two evenings a week, allowing students to work full time while being immersed in the latest business practices. This program promises an intense, interactive, and applied curriculum to equip students with the critical analytical tools, business techniques, and leadership skills needed to grow within their organizations. PMBA curriculum is revised continuously to reflect the demands and expectations of the business community. As such, courses and subjects may be different for future classes.

- Program highlights include:
- 22-month program with a convenient two evenings per week schedule
  - Small cohort group of working professionals
  - Innovative pedagogy (consultative and case-based applied approach)
  - Prerequisite courses waived in lieu of professional work experience
  - Personal interview required for admission

**Total Hours Required for MBA—39  
 Credit Hours Minimum beyond the  
 Bachelor’s Degree.**

The MBA curriculum provides a challenging and creative learning environment in an intensive program of study that has a broad-based administrative emphasis. Recognizing that the management methods of tomorrow may bear little resemblance to techniques in current use, the program emphasizes sound general principles and decision-making techniques that provide a base for continued learning and professional development rather than upon business procedures that are subject to obsolescence.

**Prerequisite Courses**

**Foundation Core—12 Credit Hours**

Students entering the MBA program without a business undergraduate degree or business minor may need to complete the MBA foundation core. This 12-credit-hour core of business foundation courses may be satisfied by a student’s prior equivalent course work, provided such course work

has been satisfactorily completed at a regionally accredited university either at the undergraduate or graduate level.

The foundation core courses are offered in spring and summer and are defined by the course requirements listed below.

- ACG 6065 Accounting Foundations (3 credit hours)
- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

### Professional Core—39 Credit Hours

The professional core consists of advanced course work that substantially extends and applies knowledge developed in the foundation core. The MBA program also requires the student to take three elective courses (9 credit hours). The professional core must be completed in four consecutive years. If a course falls outside the four-year rule, the student will be required to retake the course.

#### Professional Core I: Decision-Making Tools—18 Credit Hours

- BUL 6444 Law and Ethics (3 credit hours)\*
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)\*
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)

\*Students planning to sit for the CPA Exam must substitute approved CPA courses for BUL 6444 and ACG 6425.

#### Professional Core II: Decision Applications—12 Credit Hours

- MAR 6816 Strategic Marketing Management (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)

- MAN 6721 Applied Strategy and Business Policy (grade of “B-” or better is required in this course) (3 credit hours)

### Electives—9 Credit Hours

Students may take electives in any term, including summer.

**Unrestricted electives:** Any 5000- and 6000-level business courses, excluding all 6000-level MBA foundation courses.

**Restricted electives:** A maximum of two courses or 6 credit hours may be taken outside the College of Business Administration, with permission from the Graduate Programs Office prior to taking the course.

**Internship:** A maximum of 6 credit hours may be used toward internship credit.

**Certificates:** Certain business electives will count as elective and certificate credit. Students must apply to the certificate program for this option.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years, a bachelor’s degree, three letters of recommendation, an essay, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see [www.ucfmba.ucf.edu](http://www.ucfmba.ucf.edu)).
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.



Professional MBA (Regional Campuses)	Fall Priority	Fall	Spring	Summer
Domestic Applicants		Jun 15	Nov 1	Mar 15
The Fall 2008 application deadline has been extended to July 15th.				
International Applicants		Jan 15	Jul 1	Nov 1
International Transfer Applicants		Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 UCF Executive Development Center  
 DTC 201D

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# Career and Technical Education MA

## PROGRAM DESCRIPTION

The Career and Technical Education MA program is designed for students who have a bachelor's degree in education, have completed course work for regular Vocational/Career and Teaching Education Florida State or District Teaching Certification, or have a bachelor's degree in a discipline other than education. The program places emphasis on the intellectual growth of each student using research-based effective teaching techniques, scholarly learning, laboratory-field experience, and leadership development.

## CURRICULUM

The Career and Technical Education MA program requires a minimum of 42-45 credit hours beyond the bachelor's degree, including 12-15 credit hours of core courses, 9 credit hours of career education core courses, and 21 credit hours of adviser approved courses focused on a specialization within the field. The program also requires an internship or

a research report.

## Total Required Hours for MA—42-45 Credit Hours Minimum beyond the Bachelor's Degree.

A core class in the curriculum, required of all students, is the research methods course where examples are related directly to career education. The internship is an independent learning activity that takes place in face to face or web-based authentic setting in which students must apply, reflect upon, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary face to face or web classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

## Required Courses—18 Credit Hours

### Education Foundation Core—9 Credit Hours

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- IDS 6504 Adult Learning (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours) or EFG 6401 Statistics for Educational Data
- EDF 6886 Multicultural Education (3 credit hours)
- EDF 6725 Critical Issues in Urban Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6517 History and Philosophy of American Education (3 credit hours)
- EDG 6329 Quality Teaching Practices (3 credit hours)

**Career Education Core—9 Credit Hours**

- EVT 6067 History of Career Education in the United States (3 credit hours)
- EVT 6095 Issues in Career Education (3 credit hours)
- EVT 6791 Research in Career Education (3 credit hours)

**Elective Courses in Specialization—21 Credit Hours**

Areas of focus may include: health, technical training, teaching adults, or business education. The area of focus must be approved by an adviser.

**Internship or Research Report**

Choose one of the following options.

**Internship—6 Credit Hours**

- EVT 6946 Graduate Internship (6 credit hours)

**Research Report—3 Credit Hours**

- EVT 6909 Research Report (2,1 credit hours)

**Co-requisites**

If initial certification is desired, see adviser.

The internship is an independent learning activity that takes place in face to face or web-based authentic settings in which students must apply, reflect upon, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary face to face or web classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Career and Technical Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

Jo Ann Whiteman EdD

Program Director

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Telephone 407-823-2848

Department of Teaching and Learning Principles

Technical Education & Industry Training

**Civil Engineering MS**

- Structural and Geotechnical Engineering MS
- Transportation Systems Engineering MS
- Water Resources Engineering MS

**PROGRAM DESCRIPTION**

The Civil Engineering MS degree program reflects the very broad nature of the field, which encompasses the design, construction, and enhancement of the infrastructure of society. The program offers tracks in Structural and Geotechnical Engineering, Transportation Systems Engineering, and Water Resources Engineering. Course work includes structural analysis and design, geotechnical engineering and foundations, transportation planning and operations, traffic engineering and water resources engineering.

Faculty research interests include geotechnical studies of subsurface conditions, soil testing “superpave” mix design, intelligent transportation systems, traffic safety, structural dynamics, nonlinear structural analysis and software development, reinforced concrete, hydraulic modeling, coastal ocean modeling, stormwater management, and watershed management. Students completing the program find positions in consulting firms, construction and construction-

related industries, in city, county, state, and federal government agencies, and academic institutions.

## CURRICULUM

The MS degree requires 30 credit hours of acceptable graduate work and includes a thesis (6 credit hours), or 30 credit hours of acceptable graduate work with a comprehensive final examination.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor of Science degree in civil engineering or another closely related engineering degree.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

The MS degrees in specialized options are designed for students with appropriate baccalaureate backgrounds. Applicants who are applying to the programs without a directly related undergraduate degree should closely check the prerequisites. Additional undergraduate courses may be required.

Civil Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Program Director  
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 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

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*Civil Engineering MS*

# Structural and Geotechnical Engineering MS

## TRACK DESCRIPTION

The Structural and Geotechnical Engineering MS degree program reflects the very broad nature of the field, which encompasses the design, construction, and enhancement of the infrastructure of society.

## CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The department offers a Master of Science (MS) program in Structural and Geotechnical Engineering to students with appropriate science or engineering baccalaureate backgrounds. The degree requires 24 credit hours of acceptable graduate course work and a thesis (6 credit hours), or 30 credit hours of acceptable graduate course work with a comprehensive oral and /or written final examination. The student must develop an individual program of study with a faculty adviser and must have background or articulation course work as described below. At least one-half of the required credits must be taken at the 6000 level.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

#### Prerequisites

- CEG 4101C Geotechnical Engineering I (3 credit hours)
- CES 4101 Structural Analysis II (3 credit hours)
- CES 4605 Steel Structures (3 credit hours) OR CES 4702 Reinforced Concrete Structures (3 credit hours)
- EGN 3310 Engineering Analysis—Statics (3 credit hours)
- EGN 3321 Engineering Analysis—Dynamics (3 credit hours)
- EGN 3331 Mechanics of Materials (3 credit hours)

#### Required Courses—12 Credit Hours

Choose two courses from each of the following groups.

##### Geotechnical Engineering

- CEG 5015 Geotechnical Engineering II\* (3 credit hours)

- CEG 5700 Geo-Environmental Engineering\* (3 credit hours)
- CEG 6065 Soil Dynamics (3 credit hours)
- CEG 6115 Foundation Engineering\* (3 credit hours)
- CEG 6317 Advanced Geotechnical Engineering (3 credit hours)
- CES 6170 Boundary Element Methods in Civil Engineering\* (3 credit hours)
- TTE 5835 Pavement Design (3 credit hours)

##### Structural Engineering

- CES 5325 Bridge Engineering (3 credit hours)
- CES 5606 Advanced Steel Structures (3 credit hours)
- CES 5706 Advanced Reinforced Concrete (3 credit hours)
- CES 5821 Masonry and Timber Design (3 credit hours)
- CES 6116 Finite Element Structural Analysis (3 credit hours)
- CES 6209 Dynamics of Structures (3 credit hours)
- CES 6220 Wind and Earthquake Engineering (3 credit hours)
- CES 6230 Advanced Structural Mechanics (3 credit hours)
- CES 6715 Prestressed Concrete Structures (3 credit hours)
- CES 6840 Composite Steel Concrete Structures (3 credit hours)
- CES 6910 Research in Structural Engineering (3 credit hours)

Note: Courses with asterisks represent those with specific independent learning experiences. All non-thesis students are required to take one of the courses that has an asterisk.

#### Elective Courses—12-18 Credit Hours

For those pursuing the thesis option, four more courses (12 credit hours) of approved electives (primarily from the above listing) are required in addition to a completed thesis.

For those pursuing the nonthesis option, six more courses (18 credit hours) of approved electives (primarily from the above listing) are required in addition to successfully passing a comprehensive examination.

#### Thesis Option—6 Credit Hours

- CGE 6971 Thesis (6 credit hours)

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in civil engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor of Science degree in civil engineering or another closely related engineering degree.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

The MS degrees in specialized options are designed for students with appropriate baccalaureate backgrounds. Applicants who are applying to the programs without a directly related undergraduate degree should closely check the prerequisites. Additional undergraduate courses may be required.

Structural and Geotechnical Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

David Cooper PhD, PE  
 Professor  
 Program Director  
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 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

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### *Civil Engineering MS*

# Transportation Systems Engineering MS

## TRACK DESCRIPTION

The Transportation Systems Engineering MS degree program reflects the very broad nature of the field, which encompasses the design, construction, and enhancement of the infrastructure of society.

## CURRICULUM

### **Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.**

The Transportation Systems Engineering MS option is for students with appropriate science or engineering baccalaureate backgrounds. The degree requires 24 credit hours of acceptable graduate course work and a thesis (6 credit hours), or 30 credit hours of acceptable graduate course

work with a comprehensive oral and /or written final examination. The student must develop an individual program of study with a faculty adviser and must have background or articulation course work as described below. At least one-half of the required credits must be taken at the 6000 level.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

### Prerequisites

- STA 3032 Probability and Statistics for Engineers (3 credit hours)
- TTE 4004 Transportation Engineering (3 credit hours)

### Required Courses—15 Credit Hours

Choose five of the following courses.

- TTE 5204 Traffic Engineering\* (3 credit hours)
- TTE 5205 Highway Capacity and Traffic Flow Analysis (3 credit hours)
- TTE 5805 Geometric Design of Transportation Systems\* (3 credit hours)
- TTE 5835 Pavement Design (3 credit hours)
- TTE 6256 Traffic Operations\* (3 credit hours)
- TTE 6270 Intelligent Transportation Systems (3 credit hours)
- TTE 6315 Traffic Safety Analysis\* (3 credit hours)
- TTE 6526 Planning and Design of Airports\* (3 credit hours)
- CGN 6655 Regional Planning, Design and Development (3 credit hours)
- ENV 5071 Environmental Analysis of Transportation Systems (3 credit hours)
- STA 5156 Probability and Statistics for Engineers **or** STA 5206 Statistical Analysis **or** ESO 5219 Engineering Statistics (3 credit hours)

Note: Courses with asterisks provide independent learning experiences. These experiences encompass research reports, design projects, and literature studies.

### Elective Courses—9-15 Credit Hours

For those pursuing a thesis, three more courses (9 credit hours) of approved electives must be taken plus completing a thesis.

For those pursuing the nonthesis option, five more courses (15 credit hours) of approved electives must be taken plus successful completion of a comprehensive final exam. The electives should come preferably from the above list, but may include other courses with adviser's consent.

### Thesis Option—6 Credit Hours

- TTE 6971 Thesis (6 credit hours)

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in civil engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor of Science degree in civil engineering or another closely related engineering degree.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews with applicants before accepting them into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

The MS degrees in specialized options are designed for students with appropriate baccalaureate backgrounds. Applicants who are applying to the programs without a directly related undergraduate degree should closely check the prerequisites. Additional undergraduate courses may be required.

Transportation Systems Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

David Cooper PhD, PE  
 Professor  
 Program Director  
 gradcee@mail.ucf.edu  
 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

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### *Civil Engineering MS*

## Water Resources Engineering MS

### TRACK DESCRIPTION

The Water Resources MS degree program reflects the very broad nature of the field, which encompasses the design, construction, and enhancement of the infrastructure of society.

## CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The Water Resources Engineering MS option is for students with appropriate science or engineering baccalaureate backgrounds. The degree requires 30 credit hours of acceptable graduate course work, which includes a thesis (6 credit hours), or 30 credit hours of acceptable graduate course work with a comprehensive oral and /or written final examination. Each student must have an individual program of study approved by his/her faculty committee and have completed all required articulation course work as described below. At least one-half of the required credits must be taken at the 6000 level.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

### Prerequisites

- CEG 4101C Geotechnical Engineering I (3 credit hours)
- CWR 4101C Hydrology (3 credit hours)
- CWR 4203C Hydraulics (3 credit hours)
- EGN 3613 Engineering Economic Analysis (2 credit hours)
- STA 3032 Probability and Statistics for Engineers (3 credit hours)

### Required Courses—15 Credit Hours

Choose any five CWR courses.

- CWR 5205 Hydraulic Engineering (3 credit hours)
- CWR 5515 Numerical Methods in Civil and Environmental Engineering (3 credit hours)
- CWR 5545 Water Resources Engineering (3 credit hours)
- CWR 5125 Groundwater Hydrology (3 credit hours)
- CWR 6235 Open Channel Hydraulics (3 credit hours)

- CWR 6236 River Engineering and Sediment Transport (3 credit hours)
- CWR 6535 Modeling Water Resources Systems\* (3 credit hours)
- CWR 6102 Advanced Hydrology\* (3 credit hours)
- CWR 6126 Groundwater Modeling\* (3 credit hours)
- CWR 6539 Finite Elements in Surface Water Modeling (3 credit hours)
- CWR 6532 Modeling of Subsurface Reactive Chemical Transport (3 credit hours)

\* Courses with an asterisk provide an independent learning experience. Nonthesis students are required to take at least one course with an asterisk. Independent learning experiences involve research and design projects.

## Electives—9-15 Credit Hours

### Thesis Option

For those pursuing the thesis option, three more courses (9 credit hours) of approved electives are required plus successful completion of a thesis.

For those pursuing the nonthesis option, five more courses (15 credit hours) of approved electives are required plus successful completion of a comprehensive final exam.

### Thesis Option—6 Credit Hours

- CWR 6971 (6 credit hours)

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in civil engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines

for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor of Science degree in civil engineering or another closely related engineering degree.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

The MS degrees in specialized options are designed for students with appropriate baccalaureate backgrounds. Applicants who are applying to the programs without a directly related undergraduate degree should closely check the prerequisites. Additional undergraduate courses may be required.

Water Resources Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Civil and Environmental Engineering  
 Engineering II 211



# Civil Engineering MSCE

## PROGRAM DESCRIPTION

The Master of Science in Civil Engineering (MSCE) degree is designed for students who have an undergraduate degree in Civil Engineering or another closely related engineering degree. Graduate work and research in civil engineering reflects the very broad nature of the field, which encompasses the design, construction, and enhancement of the infrastructure of society. The program includes course work in structural analysis and design, geotechnical engineering and foundations, transportation planning and operations, traffic engineering and water resources engineering.

Faculty research interests include geotechnical studies of subsurface conditions, soil testing “superpave” mix design, intelligent transportation systems, traffic safety, structural dynamics, nonlinear structural analysis and software development, reinforced concrete, hydraulic modeling, coastal ocean modeling, stormwater management, and watershed management. Students completing the program find positions in consulting firms, construction and construction-related industries, in city, county, state, and federal government agencies, and academic institutions.

## CURRICULUM

The Civil Engineering MSCE program requires a minimum of 30 credit hours beyond the bachelor’s degree and has a thesis and nonthesis option. The thesis option includes 12 credit hours of required courses, 12 credit hours of electives, and 6 thesis credit hours. The nonthesis option includes 12 credit hours of required courses, and 18 credit hours of electives. Students in the nonthesis program must also pass a comprehensive examination at the end of the program.

### Total Required Hours for MSCE—30 Credit Hours Minimum beyond the Bachelor’s Degree.

The Civil Engineering MSCE program requires a minimum of 30 credit hours beyond the bachelor’s degree and has a thesis and nonthesis option. Student must develop an individual program

of study with a faculty adviser by their second semester of study. At least one-half of the required credits must be taken at the 6000 level.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student’s particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

### Thesis Option

The thesis option includes 12 credit hours of required courses, 12 credit hours of electives, and 6 thesis credit hours.

### Required Courses—12 Credit Hours

Take one course from each of the following four groups.

- Geotechnical Engineering: Any CEG course at the 5000 or 6000 level (CEG 5015, CEG 5700, CEG 6115, CEG 6065, etc.)
- Structural Engineering: Any CES course at the 5000 or 6000 level (CES 5325, CES 5606, CES 5706, CES 6715, CES 6840, etc.)
- Transportation Engineering: Any TTE course at the 5000 or 6000 level (TTE 5204, TTE 5805, TTE 6270, TTE 6315, etc.)
- Water Resources Engineering: Any CWR course at the 5000 or 6000 level (CWR 5205, CWR 5545, CWR 5125, CWR 6102, CWR 6126, CWR 6235, CWR 6236, CWR 6532, CWR 6535, CWR 6539, etc.)

### Electives—12 Credit Hours

- Take four courses (12 credit hours) of electives. All electives must be approved by an adviser.

### Thesis—6 Credit Hours

- XXX 6971 (6 credit hours)

### Nonthesis Option

The nonthesis option includes 12 credit hours of required courses, and 18 credit hours of electives. Students in the nonthesis program must also pass a comprehensive examination at the end of the program. The nonthesis option is only recommended for part-time students.

### Required Courses—12 Credit Hours

Take two courses from each of the following four groups.

- Geotechnical Engineering: Any CEG course at the 5000 or 6000 level (CEG 5015, CEG 5700, CEG 6115, CEG 6065, etc.)
- Structural Engineering: Any CES course at the 5000 or 6000 level (CES 5325, CES 5606, CES 5706, CES 6715, CES 6840, etc.)
- Transportation Engineering: Any TTE course at the 5000 or 6000 level (TTE 5204, TTE 5805, TTE 6270, TTE 6315, etc.)
- Water Resources Engineering: Any CWR course at the 5000 or 6000 level (CWR 5205, CWR 5545, CWR 5125, CWR 6102, CWR 6126, CWR 6235, CWR 6236, CWR 6532, CWR 6535, CWR 6539, etc.)

### Elective Courses—18 Credit Hours

- Take six courses (18 credit hours) of electives. All electives must be approved by an adviser.

### Comprehensive Examination

- Students must demonstrate their abilities in an oral and/or written exam.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A Bachelor of Science degree in civil engineering or another closely related engineering degree.
- Résumé.

- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

Civil Engineering MSCE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

David Cooper PhD, PE

Professor

Program Director

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Telephone 407-823-2841

Department of Civil and Environmental

Engineering

Engineering II 211

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## Clinical Psychology

### MA

- Clinical Psychology MA - Daytona Cohort
- Clinical Psychology MA - Heathrow Cohort

### PROGRAM DESCRIPTION

The Clinical Psychology MA program provides training and preparation for students desiring to deliver clinical services through community agencies. After completing the program and a two-year postgraduate internship, graduates are eligible to become Licensed Mental Health Counselors and practice independently.

The MA program is concerned with the application of psychological principles to individuals. The two primary areas of emphasis include assessment or evaluation skills and intervention or psychotherapy skills. Master's program graduates have been involved in mental health service delivery through individual, marital, family, and group psychotherapy, as well as crisis intervention and other specialized therapeutic procedures. The program curriculum is consistent with the educational criteria for licensure as a mental health counselor in the state of Florida. The program is offered at the Daytona Beach and Heathrow area campuses.

## CURRICULUM

The Clinical Psychology MA program requires a minimum of 61 credit hours beyond the bachelor's degree, including 49 credit hours of required courses, and 12 clinical internship credit hours. All students must also do a case presentation at the end of their studies.

### Total Required Hours for MA—61 Credit Hours Minimum beyond the Bachelor's Degree.

#### Required Courses—49 Credit Hours

- CLP 6181 Psychological Theories of Substance Abuse Treatment (3 credit hours)
- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 6192C Group Psychotherapy Experiential Lab (1 credit hour)
- CLP 6195C Introduction to Psychotherapy (3 credit hours)
- CLP 6321 Psychotherapy in Community Settings (3 credit hours)
- CLP 6441C Individual Psychological Assessment I (3 credit hours)
- CLP 6457C Group Psychotherapy (3 credit hours)
- CLP 6458C Behavior Therapy (3 credit hours)
- CLP 6459C Human Sexuality, Marriage, and Sex Therapies (3 credit hours)
- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practices (3 credit hours)
- CLP 6946 Clinical Practicum (2 hours)
- DEP 5057 Developmental Psychology (3 credit hours)

- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- MHS 6430 Family Counseling I\* (3 credit hours)
- SDS 6347 Career Development\* (3 credit hours)

\* These courses are offered in the Mental Health Counseling Track in the Counselor Education Program of the College of Education

#### Internship—12 Credit Hours

- CYP 6948C Psychology Internship (12 credit hours)

The purpose of the internship requirement is to provide the MA candidate in Clinical Psychology with comprehensive, practical-based experiences under the supervision of licensed mental health professionals. A public agency or nonprofit institution with nondiscriminatory practices is the prototype. The intern is assigned to an acceptable agency for a total of 1000 hours during three consecutive academic semesters (20 hours per week for 16 weeks during fall and spring terms, and 30 hours per week for 12 weeks during the summer term). An additional commitment of two hours per week is required for the interns to meet as a group with a departmental faculty member for review, feedback, and discussions. A major portion of intern training is in the area of psychotherapy/ counseling. The intern also engages in differential diagnosis and participates in a wide variety of psychological assessment procedures.

It is believed that supervision by qualified and experienced personnel is the primary learning mode by which the intern develops professional expertise and augments the classroom material previously acquired. Satisfactory completion of the following courses is generally required prior to internship: CLP 6191, CLP 6192C, CLP 6195C, CLP 6321, CLP 6441C, CLP 6457C, CLP 6458C and CLP 6946. The program director assigns internship placements. Interns are provided with a system for maintaining accurate accounts of their activity during the week. In addition, both the intern and supervisor(s) complete an Internship Evaluation form each semester.

#### Examination

The culminating academic experience in the

program is completed through an oral and written case presentation. During their final semester of internship training, students must present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students are to write a paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

### **Additional Program Requirements**

Successful completion of the Clinical MA program requires demonstration of academic and clinical excellence. Students who receive grades lower than B (including B- and grades of U in courses graded satisfactory/unsatisfactory) in six semester hours or more will be dismissed from the university. It is a program requirement that all course work with a grade lower than B be retaken and completed successfully, although both grades are still calculated in the GPA.

In addition to academic excellence, students are expected to demonstrate clinical skills and personal resources that are up to the demands of clinical work. At the end of each semester, students will receive written feedback from the faculty on the extent to which they are meeting the programs requirements and performance expectations. Student progress will be rated as satisfactory or unsatisfactory. Students who receive an unsatisfactory rating will be asked to complete remedial assignments as determined by the faculty. If the identified problems are not remedied and/or a second unsatisfactory rating is received, the student will be dismissed from the university.

There are several independent learning experiences built into the program of study that help to individualize the training program. The field experiences require that students, in consultation with the field placement supervisor and participating agencies, select practicum and internship placements, which will give them an opportunity to hone their clinical skills with supervision in an agency where they can work with specific populations of their choosing. The clinical case presentation is the culminating academic experience in this nonthesis program. During the final semester of internship training, students are required to present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning,

course of therapy, and available outcome data. Students also complete a written paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's degree with a minimum of 15 semester hours of undergraduate psychology courses prior to matriculation. Competitive students will have completed courses in the following areas: abnormal psychology, developmental or child psychology, personality theories, learning, physiological psychology, and courses in research methods and statistics.
- Curriculum vita.
- Personal statement outlining the student's academic and professional background and goals.
- Three letters of recommendation, with at least two from college or university professors.

Students are admitted to full-time, part-time, or nondegree-seeking status:

- Full-time students complete the MA program in two calendar years (including summers).
- Part-time students will follow a prescribed program of study that ensures foundation courses are completed before attempting more advanced work. Part-time students will complete this program in four years.
- Students who do not maintain satisfactory progress towards degree completion will be dismissed from the university.
- Community professionals may be admitted to nondegree-seeking status in order to meet job or licensing requirements after consultation with the program director.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Admission into the clinical master’s program is competitive, with all information that might be available to the committee (e.g., GRE scores, GPA, letters of reference, personal statement, clinical experience, research experience, and interview performance) considered in admissions decisions. Many applicants who meet minimum university requirements may not be admitted to the program. A department admissions committee reviews each student’s credentials and may invite candidates for an interview. Final selection is based on both submitted credentials and the interview.

Clinical Psychology MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

**CONTACT INFO**

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 Department of Psychology  
 Daytona Beach Campus D140 310

*Clinical Psychology MA*

**Clinical Psychology  
 MA - Daytona Cohort**

**TRACK DESCRIPTION**

The Master of Arts Clinical Psychology program is designed to provide training and preparation for

students desiring to deliver clinical services through community agencies. After completing the program and a two-year postgraduate internship, graduates are eligible to become Licensed Mental Health Counselors and practice independently.

**CURRICULUM**

The Clinical Psychology MA program requires a minimum of 61 credit hours beyond the bachelor’s degree, including 49 credit hours of required courses, and 12 clinical internship credit hours. All students must also do a case presentation at the end of their studies.

Total Required Hours for MA—61 Credit Hours  
 Minimum beyond the Bachelor’s Degree.

**Required Courses—49 Credit Hours**

- CLP 6181 Psychological Theories of Substance Abuse Treatment (3 credit hours)
- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 6192C Group Psychotherapy Experiential Lab (1 credit hour)
- CLP 6195C Introduction to Psychotherapy (3 credit hours)
- CLP 6321 Psychotherapy in Community Settings (3 credit hours)
- CLP 6441C Individual Psychological Assessment I (3 credit hours)
- CLP 6457C Group Psychotherapy (3 credit hours)
- CLP 6458C Behavior Therapy (3 credit hours)
- CLP 6459C Human Sexuality, Marriage, and Sex Therapies (3 credit hours)
- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practices (3 credit hours)
- CLP 6946 Clinical Practicum (2 hours)
- DEP 5057 Developmental Psychology (3 credit hours)
- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- MHS 6430 Family Counseling I\* (3 credit hours)
- SDS 6347 Career Development\* (3 credit hours)

\* These courses are offered in the Mental Health Counseling Track in the Counselor Education Program of the College of Education

### **Internship—12 Credit Hours**

- CYP 6948C Psychology Internship (12 credit hours)

The purpose of the internship requirement is to provide the MA candidate in Clinical Psychology with comprehensive, practical-based experiences under the supervision of licensed mental health professionals. A public agency or nonprofit institution with nondiscriminatory practices is the prototype. The intern is assigned to an acceptable agency for a total of 1000 hours during three consecutive academic semesters (20 hours per week for 16 weeks during fall and spring terms, and 30 hours per week for 12 weeks during the summer term). An additional commitment of two hours per week is required for the interns to meet as a group with a departmental faculty member for review, feedback, and discussions. A major portion of intern training is in the area of psychotherapy/ counseling. The intern also engages in differential diagnosis and participates in a wide variety of psychological assessment procedures.

It is believed that supervision by qualified and experienced personnel is the primary learning mode by which the intern develops professional expertise and augments the classroom material previously acquired. Satisfactory completion of the following courses is generally required prior to internship: CLP 6191, CLP 6192C, CLP 6195C, CLP 6321, CLP 6441C, CLP 6457C, CLP 6458C and CLP 6946. The program director assigns internship placements. Interns are provided with a system for maintaining accurate accounts of their activity during the week. In addition, both the intern and supervisor(s) complete an Internship Evaluation form each semester.

### **Examination**

The culminating academic experience in the program is completed through an oral and written case presentation. During their final semester of internship training, students must present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students are to write a paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

### **Additional Program Requirements**

Successful completion of the Clinical MA program requires demonstration of academic and clinical excellence. Students who receive grades lower than B (including B- and grades of U in courses graded satisfactory/unsatisfactory) in six semester hours or more will be dismissed from the university. It is a program requirement that all course work with a grade lower than B be retaken and completed successfully, although both grades are still calculated in the GPA.

In addition to academic excellence, students are expected to demonstrate clinical skills and personal resources that are up to the demands of clinical work. At the end of each semester, students will receive written feedback from the faculty on the extent to which they are meeting the programs requirements and performance expectations. Student progress will be rated as satisfactory or unsatisfactory. Students who receive an unsatisfactory rating will be asked to complete remedial assignments as determined by the faculty. If the identified problems are not remedied and/or a second unsatisfactory rating is received, the student will be dismissed from the university.

### **Total Required Hours for MA—61 Credit Hours Minimum beyond the Bachelor's Degree.**

#### **Required Courses—49 Credit Hours**

- CLP 6181 Psychological Theories of Substance Abuse Treatment (3 credit hours)
- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 6192C Group Psychotherapy Experiential Lab (1 credit hour)
- CLP 6195C Introduction to Psychotherapy (3 credit hours)
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- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practices (3 credit hours)

- CLP 6946 Clinical Practicum (2 hours)
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- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- MHS 6430 Family Counseling I\* (3 credit hours)
- SDS 6347 Career Development\* (3 credit hours)

\* These courses are offered in the Mental Health Counseling Track in the Counselor Education Program of the College of Education

### **Internship—12 Credit Hours**

- CYP 6948C Psychology Internship (12 credit hours)

The purpose of the internship requirement is to provide the MA candidate in Clinical Psychology with comprehensive, practical-based experiences under the supervision of licensed mental health professionals. A public agency or nonprofit institution with nondiscriminatory practices is the prototype. The intern is assigned to an acceptable agency for a total of 1000 hours during three consecutive academic semesters (20 hours per week for 16 weeks during fall and spring terms, and 30 hours per week for 12 weeks during the summer term). An additional commitment of two hours per week is required for the interns to meet as a group with a departmental faculty member for review, feedback, and discussions. A major portion of intern training is in the area of psychotherapy/ counseling. The intern also engages in differential diagnosis and participates in a wide variety of psychological assessment procedures.

It is believed that supervision by qualified and experienced personnel is the primary learning mode by which the intern develops professional expertise and augments the classroom material previously acquired. Satisfactory completion of the following courses is generally required prior to internship: CLP 6191, CLP 6192C, CLP 6195C, CLP 6321, CLP 6441C, CLP 6457C, CLP 6458C and CLP 6946. The program director assigns internship placements. Interns are provided with a system for maintaining accurate accounts of their activity during the week. In addition, both the intern and supervisor(s) complete an Internship Evaluation form each semester.

### **Examination**

The culminating academic experience in the program is completed through an oral and written case presentation. During their final semester of internship training, students must present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students are to write a paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

### **Additional Program Requirements**

Successful completion of the Clinical MA program requires demonstration of academic and clinical excellence. Students who receive grades lower than B (including B- and grades of U in courses graded satisfactory/unsatisfactory) in six semester hours or more will be dismissed from the university. It is a program requirement that all course work with a grade lower than B be retaken and completed successfully, although both grades are still calculated in the GPA.

In addition to academic excellence, students are expected to demonstrate clinical skills and personal resources that are up to the demands of clinical work. At the end of each semester, students will receive written feedback from the faculty on the extent to which they are meeting the programs requirements and performance expectations. Student progress will be rated as satisfactory or unsatisfactory. Students who receive an unsatisfactory rating will be asked to complete remedial assignments as determined by the faculty. If the identified problems are not remedied and/or a second unsatisfactory rating is received, the student will be dismissed from the university.

There are several independent learning experiences built into the program of study that help to individualize the training program. The field experiences require that students, in consultation with the field placement supervisor and participating agencies, select practicum and internship placements, which will give them an opportunity to hone their clinical skills with supervision in an agency where they can work with specific populations of their choosing. The clinical case presentation is the culminating academic experience in this nonthesis program. During the final semester of internship training, students are

required to present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students also complete a written paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

## ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree with a minimum of 15 semester hours of undergraduate psychology courses, a résumé or curriculum vita, a statement outlining their academic and professional background and goals, and three letters of recommendation.

- In addition to the general UCF graduate admission requirements, applicants to this program must provide: One official transcript (in a sealed envelope) from each college/ university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's degree with a minimum of 15 semester hours of undergraduate psychology courses prior to matriculation. Competitive students will have completed courses in the following areas: abnormal psychology, developmental or child psychology, personality theories, learning, physiological psychology, and courses in research methods and statistics.
- Curriculum vita.
- Personal statement outlining the student's academic and professional background and goals.
- Three letters of recommendation, with at least two from college or university professors.

Students are admitted to full-time, part-time, or nondegree-seeking status:

- Full-time students complete the MA program in two calendar years (including summers).
- Part-time students will follow a prescribed program of study that ensures foundation courses are completed before attempting more advanced work. Part-time students will complete this program in four years.
- Students who do not maintain satisfactory progress towards degree completion will be dismissed from the university.

- Community professionals may be admitted to nondegree-seeking status in order to meet job or licensing requirements after consultation with the program director.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Admission into the clinical master's program is competitive, with all information that might be available to the committee (e.g., GRE scores, GPA, letters of reference, personal statement, clinical experience, research experience, and interview performance) considered in admissions decisions. Many applicants who meet minimum university requirements may not be admitted to the program. A department admissions committee reviews each student's credentials and may invite candidates for an interview. Final selection is based on both submitted credentials and the interview.

Clinical Psychology MA - Daytona Cohort	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

## CONTACT INFO

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 Daytona Beach Campus D140 310



*Clinical Psychology MA*

# Clinical Psychology MA - Heathrow Cohort

## TRACK DESCRIPTION

The Master of Arts Clinical Psychology program is designed to provide training and preparation for students desiring to deliver clinical services through community agencies. After completing the program and a two-year postgraduate internship, graduates are eligible to become Licensed Mental Health Counselors and practice independently.

## CURRICULUM

The Clinical Psychology MA program requires a minimum of 61 credit hours beyond the bachelor's degree, including 49 credit hours of required courses, and 12 clinical internship credit hours. All students must also do a case presentation at the end of their studies.

Total Required Hours for MA—61 Credit Hours  
Minimum beyond the Bachelor's Degree.

### Required Courses—49 Credit Hours

- CLP 6181 Psychological Theories of Substance Abuse Treatment (3 credit hours)
- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 6192C Group Psychotherapy Experiential Lab (1 credit hour)
- CLP 6195C Introduction to Psychotherapy (3 credit hours)
- CLP 6321 Psychotherapy in Community Settings (3 credit hours)
- CLP 6441C Individual Psychological Assessment I (3 credit hours)
- CLP 6457C Group Psychotherapy (3 credit hours)
- CLP 6458C Behavior Therapy (3 credit hours)
- CLP 6459C Human Sexuality, Marriage, and Sex Therapies (3 credit hours)
- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practices (3 credit hours)
- CLP 6946 Clinical Practicum (2 hours)

- DEP 5057 Developmental Psychology (3 credit hours)
- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- MHS 6430 Family Counseling I\* (3 credit hours)
- SDS 6347 Career Development\* (3 credit hours)

\* These courses are offered in the Mental Health Counseling Track in the Counselor Education Program of the College of Education

### Internship—12 Credit Hours

- CYP 6948C Psychology Internship (12 credit hours)

The purpose of the internship requirement is to provide the MA candidate in Clinical Psychology with comprehensive, practical-based experiences under the supervision of licensed mental health professionals. A public agency or nonprofit institution with nondiscriminatory practices is the prototype. The intern is assigned to an acceptable agency for a total of 1000 hours during three consecutive academic semesters (20 hours per week for 16 weeks during fall and spring terms, and 30 hours per week for 12 weeks during the summer term). An additional commitment of two hours per week is required for the interns to meet as a group with a departmental faculty member for review, feedback, and discussions. A major portion of intern training is in the area of psychotherapy/ counseling. The intern also engages in differential diagnosis and participates in a wide variety of psychological assessment procedures.

It is believed that supervision by qualified and experienced personnel is the primary learning mode by which the intern develops professional expertise and augments the classroom material previously acquired. Satisfactory completion of the following courses is generally required prior to internship: CLP 6191, CLP 6192C, CLP 6195C, CLP 6321, CLP 6441C, CLP 6457C, CLP 6458C and CLP 6946. The program director assigns internship placements. Interns are provided with a system for maintaining accurate accounts of their activity during the week. In addition, both the intern and supervisor(s) complete an Internship Evaluation form each semester.

## Examination

The culminating academic experience in the program is completed through an oral and written case presentation. During their final semester of internship training, students must present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students are to write a paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

## Additional Program Requirements

Successful completion of the Clinical MA program requires demonstration of academic and clinical excellence. Students who receive grades lower than B (including B- and grades of U in courses graded satisfactory/unsatisfactory) in six semester hours or more will be dismissed from the university. It is a program requirement that all course work with a grade lower than B be retaken and completed successfully, although both grades are still calculated in the GPA.

In addition to academic excellence, students are expected to demonstrate clinical skills and personal resources that are up to the demands of clinical work. At the end of each semester, students will receive written feedback from the faculty on the extent to which they are meeting the programs requirements and performance expectations. Student progress will be rated as satisfactory or unsatisfactory. Students who receive an unsatisfactory rating will be asked to complete remedial assignments as determined by the faculty. If the identified problems are not remedied and/or a second unsatisfactory rating is received, the student will be dismissed from the university.

## Total Required Hours for MA—61 Credit Hours Minimum beyond the Bachelor's Degree.

### Required Courses—49 Credit Hours

- CLP 6181 Psychological Theories of Substance Abuse Treatment (3 credit hours)
- CLP 6191 Cross-Cultural Psychotherapy (3 credit hours)
- CLP 6192C Group Psychotherapy Experiential Lab (1 credit hour)

- CLP 6195C Introduction to Psychotherapy (3 credit hours)
- CLP 6321 Psychotherapy in Community Settings (3 credit hours)
- CLP 6441C Individual Psychological Assessment I (3 credit hours)
- CLP 6457C Group Psychotherapy (3 credit hours)
- CLP 6458C Behavior Therapy (3 credit hours)
- CLP 6459C Human Sexuality, Marriage, and Sex Therapies (3 credit hours)
- CLP 6460C Introduction to Child, Adolescent, and Family Therapies (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practices (3 credit hours)
- CLP 6946 Clinical Practicum (2 hours)
- DEP 5057 Developmental Psychology (3 credit hours)
- PSB 6446 Advanced Abnormal and Clinical Psychopharmacology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- MHS 6430 Family Counseling I\* (3 credit hours)
- SDS 6347 Career Development\* (3 credit hours)

\* These courses are offered in the Mental Health Counseling Track in the Counselor Education Program of the College of Education

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The purpose of the internship requirement is to provide the MA candidate in Clinical Psychology with comprehensive, practical-based experiences under the supervision of licensed mental health professionals. A public agency or nonprofit institution with nondiscriminatory practices is the prototype. The intern is assigned to an acceptable agency for a total of 1000 hours during three consecutive academic semesters (20 hours per week for 16 weeks during fall and spring terms, and 30 hours per week for 12 weeks during the summer term). An additional commitment of two hours per week is required for the interns to meet as a group with a departmental faculty member for review, feedback, and discussions. A major portion of intern training is in the area of psychotherapy/ counseling. The intern also engages in differential diagnosis and participates in a wide variety of psychological assessment procedures.

It is believed that supervision by qualified and experienced personnel is the primary learning mode by which the intern develops professional expertise and augments the classroom material previously acquired. Satisfactory completion of the following courses is generally required prior to internship: CLP 6191, CLP 6192C, CLP 6195C, CLP 6321, CLP 6441C, CLP 6457C, CLP 6458C and CLP 6946. The program director assigns internship placements. Interns are provided with a system for maintaining accurate accounts of their activity during the week. In addition, both the intern and supervisor(s) complete an Internship Evaluation form each semester.

### **Examination**

The culminating academic experience in the program is completed through an oral and written case presentation. During their final semester of internship training, students must present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students are to write a paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

### **Additional Program Requirements**

Successful completion of the Clinical MA program requires demonstration of academic and clinical excellence. Students who receive grades lower than B (including B- and grades of U in courses graded satisfactory/unsatisfactory) in six semester hours or more will be dismissed from the university. It is a program requirement that all course work with a grade lower than B be retaken and completed successfully, although both grades are still calculated in the GPA.

In addition to academic excellence, students are expected to demonstrate clinical skills and personal resources that are up to the demands of clinical work. At the end of each semester, students will receive written feedback from the faculty on the extent to which they are meeting the programs requirements and performance expectations. Student progress will be rated as satisfactory or unsatisfactory. Students who receive an unsatisfactory rating will be asked to complete remedial assignments as determined by the faculty. If the identified problems are not remedied and/or a second unsatisfactory rating is received, the student

will be dismissed from the university.

There are several independent learning experiences built into the program of study that help to individualize the training program. The field experiences require that students, in consultation with the field placement supervisor and participating agencies, select practicum and internship placements, which will give them an opportunity to hone their clinical skills with supervision in an agency where they can work with specific populations of their choosing. The clinical case presentation is the culminating academic experience in this nonthesis program. During the final semester of internship training, students are required to present a case that incorporates an integration of assessment data and its interpretation, theoretical conceptualization, treatment planning, course of therapy, and available outcome data. Students also complete a written paper on the case (ensuring ethical consideration of confidentiality issues) and present it to their faculty internship supervisor for final approval.

### **ADMISSIONS**

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree with a minimum of 15 semester hours of undergraduate psychology courses, a résumé or curriculum vita, a statement outlining their academic and professional background and goals, and three letters of recommendation.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's degree with a minimum of 15 semester hours of undergraduate psychology courses prior to matriculation. Competitive students will have completed courses in the following areas: abnormal psychology, developmental or child psychology, personality theories, learning, physiological psychology, and courses in research methods and statistics.
- Curriculum vita.
- Personal statement outlining the student's academic and professional background and goals.

- Three letters of recommendation, with at least two from college or university professors.

Students are admitted to full-time, part-time, or nondegree-seeking status:

- Full-time students complete the MA program in two calendar years (including summers).
- Part-time students will follow a prescribed program of study that ensures foundation courses are completed before attempting more advanced work. Part-time students will complete this program in four years.
- Students who do not maintain satisfactory progress towards degree completion will be dismissed from the university.
- Community professionals may be admitted to nondegree-seeking status in order to meet job or licensing requirements after consultation with the program director.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Admission into the clinical master's program is competitive, with all information that might be available to the committee (e.g., GRE scores, GPA, letters of reference, personal statement, clinical experience, research experience, and interview performance) considered in admissions decisions. Many applicants who meet minimum university requirements may not be admitted to the program. A department admissions committee reviews each student's credentials and may invite candidates for an interview. Final selection is based on both submitted credentials and the interview.

Clinical Psychology MA - Heathrow Cohort	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

## CONTACT INFO

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 Department of Psychology  
 Daytona Beach Campus D140 310

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# Communication Sciences and Disorders MA

- Accelerated BA/BS to MA
- Communicative Disorders Consortium MA

## PROGRAM DESCRIPTION

The Department of Communication Sciences and Disorders offers three plans of study leading to the Master of Arts degree: the Traditional, Accelerated and Consortium programs. Each program is intended for those interested in working with children and adults who have communication disorders and is based on the same curriculum of course work and degree requirements but allow students to follow different plans of study. Students enrolled in each program must follow a prescribed sequence of academic and clinical courses.

Each program provides academic and clinical education experiences necessary for certification by the American Speech-Language-Hearing Association (ASHA) and the Florida Department of Education, and licensure by the state of Florida. The Council on Academic Accreditation (CAA) of the ASHA has accredited the Master of Arts Degree in Communication Sciences and Disorders since 1986.

The College of Education also offers the Communication Sciences and Disorders track in PhD in Education. For more information, please click [here](#).

The **Traditional** program is a two-year, full-time program (i.e., six to seven consecutive semesters, including two summers) for students with undergraduate degrees in Communication Sciences and Disorders or Speech-Language Pathology and Audiology. For students with undergraduate degrees

in other majors, the program requires additional prerequisite course work. Out-of-field applicants should consult with a departmental adviser prior to applying for admission to determine the best course for seeking entrance into the program.

The **Accelerated** program enables highly qualified undergraduate majors in Communication Sciences and Disorders to achieve a master's degree in the UCF Department of Communications Sciences and Disorders graduate program in one to two fewer semesters. This program is a BA/BS to MA program. Students are able to enroll in 18 credit hours of graduate-level courses while completing the bachelor's degree.

The **Consortium** program is a five-year (summers mainly) program, including five consecutive summers of full-time enrollment and occasional enrollment during fall or spring semesters. The goal of this program is to address the critical shortage of public school speech-language pathologists and is a cooperative effort between the UCF Department of Communication Sciences and Disorders and the Central Florida Public School Consortium. Participating school districts in the Central Florida Consortium are: Brevard, Citrus, Flagler, Lake, Marion, Orange, Osceola, Seminole, Sumter and Volusia.

## CURRICULUM

The Communication Sciences and Disorders MA program consists of a minimum of 72 semester hours, including 35 credit hours of core academic courses, 9 credit hours of electives, and 28 credit hours of clinical practice.

### Total Required Hours for MA—72 Credit Hours Minimum beyond the Bachelor's Degree.

#### Prerequisites

- To be certified to practice by the American Speech-Language-Hearing Association (ASHA), all students must have undergraduate transcript credit, which could include course work, advanced placement, CLEP, or examination equivalency, for each of the following areas: biological sciences, physical sciences, social/behavioral sciences, and mathematics or statistics. Courses may consist of any number of credits and must be taken outside the discipline.

- All students must complete at least 3 credit hours in undergraduate statistics with a grade of "C" or better. Undergraduate course work in statistics is a prerequisite to SPA 6805 Research in Communicative Disorders.
- The Department admits qualified in-field applicants, with an undergraduate degree in Communication Sciences and Disorders or Speech-Language Pathology and Audiology, and out-of-field applicants, with undergraduate degrees in other majors. Out-of-field students require an additional 36 to 42 credit hours of prerequisite course work that may be completed in approximately two to three semesters.

Out-of-field students must complete the following undergraduate prerequisite courses or their equivalents:

- DEP 2004 Developmental Psychology (3 credit hours)
- STA 2014C Principles of Statistics (3 credit hours) or STA 2023 Statistical Methods I (3 credit hours)
- LIN 3716 Language Development: Birth Through 8 Years (3 credit hours)
- LIN 4711/4711L Language Analysis and Lab (4 credit hours)
- SPA 3101 Physiological Bases of Speech and Hearing (3 credit hours)
- SPA 3104 Neural Bases of Communication (3 credit hours)
- SPA 3112/3112L Basic Phonetics and Lab (4 credit hours)
- SPA 3011/3011L Speech Science I: Production and Lab (4 credit hours)
- SPA 3123/3123L Speech Science II: Perception and Lab (4 credit hours)
- SPA 4032 Audiology (3 credit hours)
- SPA 4321 Audiologic Rehabilitation (3 credit hours)
- SPA 4056C Clinical Methods in Communication Disorders (5 credit hours)
- SPA 4478 Multicultural Aspects of Communication Disorders and Differences (3 credit hours)

#### Core Courses—35 Credit Hours

- SPA 6204 Articulation/Phonological Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)

- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6403 School-Age Language Disorders (3 credit hours)
- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6805 Research in Communicative Disorders (3 credit hours)

### **Clinical Practice—28 Credit Hours**

Supervised clinical practice is an integral part of the graduate program in Communication Sciences and Disorders. It provides students with an opportunity to apply classroom knowledge to the evaluation and management of individuals with a wide variety of communication disorders. Students complete three clinical practica and a diagnostic practicum in the UCF Communication Disorders Clinic and other affiliated facilities, as well as externships in schools, hospitals, rehabilitation centers, skilled nursing facilities, long-term care facilities, community clinics, and private practices. Through these practica and externships, students obtain a minimum of 400 clock hours of supervised clinical experience in accordance with the guidelines outlined by the American Speech-Language-Hearing Association (ASHA). Clinical practica and externships vary in length and do not always coincide with the academic calendar.

- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)
- SPA 6946 Externship (6 credit hours)
- SPA 6946 Externship (12 credit hours)

### **Thesis Option—9 Credit Hours**

Students who elect this option complete a thesis in Communication Sciences and Disorders for 6 credit hours that may substitute for 6 credit hours of electives. An additional 3 credit hour elective must be selected in consultation with an academic adviser.

Thesis hours cannot be counted toward graduation requirements if students fail to complete or successfully defend their thesis. For additional information, thesis students and their advisory committees should refer to the thesis requirements in the UCF Graduate Catalog.

### **Nonthesis Option—9 Credit Hours**

Students who elect this option must select three electives in consultation with an academic adviser.

### **Comprehensive Examination**

Passing a Departmental Comprehensive Examination is a requirement for completion of the Master's degree in Communication Sciences and Disorders.

### **Equipment Fee**

Students in the Communication Sciences and Disorders MA Program pay a \$90 equipment fee each semester that they are enrolled.

### **Sample Plan of Study for the Traditional Program**

The Traditional MA program requires a prescribed sequence of academic and clinical courses which may vary according to the semester of entry. The following is a sample plan of study.

#### **Semester 1**

- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6204 Articulation/Phonological Disorders (3 credit hours)

#### **Semester 2**

- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6403 School-Aged Language Disorders (3 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)

#### **Semester 3**

- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)

- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)

**Semester 4**

- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- Elective (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)

**Semester 5**

- SPA 6805 Research in Communicative Disorders (3 credit hours)
- Elective (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)

**Semester 6**

- SPA 6946 Externship (6 credit hours)
- Elective (3 credit hours)

**Semester 7**

- SPA 6946 Externship (12 credit hours)
- All students in the Master of Arts in Communication Sciences and Disorders program engage in independent learning through inquiry, dialogue, and practice. Experiences such as client case studies, scholarly reviews, research projects, clinical practica and externships provide students independent learning opportunities to attain knowledge, skills, and professional behaviors. In capstone externships, students bridge university classroom and clinic lessons to real-world educational and health-related settings.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation, two from former professors for the Traditional Program and at least one from the district school administrator or program specialist of the Speech-Language Program for the Consortium Program.
- Résumé.
- A letter of intent describing educational background, professional experiences, interest in the field, and career goals.
- Upon admission, a background check must be completed through [www.certifiedbackground.com](http://www.certifiedbackground.com).

Communication Sciences and Disorders MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
Traditional Track				
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
Traditional Track				
International Transfer Applicants	Jan 15	Feb 1	Sep 1	Dec 15
Traditional Track				

**CONTACT INFO**

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 Department of Communicative Disorders  
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*Communication Sciences and Disorders*  
**MA**

# Accelerated BA/BS to MA

## TRACK DESCRIPTION

The Department of Communication Sciences and Disorders offers an accelerated BA/BS to MA program for highly qualified undergraduate majors in Communication Sciences and Disorders that enables them to complete a master's degree in one or two fewer semesters than usual.

## CURRICULUM

The Department of Communication Sciences and Disorders offers an accelerated BA/BS to MA program for highly qualified undergraduate majors in Communication Sciences and Disorders. Undergraduate students enroll in 18 credit hours of graduate-level courses while completing the bachelor's degree. This enables students to achieve a master's degree in the UCF Department of Communication Sciences and Disorders in one to two fewer semesters.

Up to 18 credit hours of approved 6000-level courses of grades "B" (3.0) or better may be counted toward the BA/BS and MA degrees.

Additional requirements include:

- Adopting the most current catalog for students changing degree programs.
- Earning at least a "B" (3.0) in each undergraduate and graduate course to be counted toward the major.
- Earning a passing score on the Communication Sciences and Disorders Undergraduate Competency Examination.
- Being assessed tuition and fees at the graduate rate for graduate courses.

## Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

## Graduate Requirements

The Communication Sciences and Disorders MA program consists of a minimum of 72 semester hours, including 35 credit hours of core academic

courses, 9 credit hours of electives, and 28 credit hours of clinical practice. See Communication Sciences and Disorders MA for more information on requirements.

## Total Required Hours for MA—72 Credit Hours Minimum beyond the Bachelor's Degree.

## Prerequisites

- To be certified to practice by the American Speech-Language-Hearing Association (ASHA), all students must have undergraduate transcript credit, which could include course work, advanced placement, CLEP, or examination equivalency, for each of the following areas: biological sciences, physical sciences, social/behavioral sciences, and mathematics or statistics. Courses may consist of any number of credits and must be taken outside the discipline.
- All students must complete at least 3 credit hours in undergraduate statistics with a grade of "C" or better. Undergraduate course work in statistics is a prerequisite to SPA 6805 Research in Communicative Disorders.
- The Department admits qualified in-field applicants, with an undergraduate degree in Communication Sciences and Disorders or Speech-Language Pathology and Audiology, and out-of-field applicants, with undergraduate degrees in other majors. Out-of-field students require an additional 36 to 42 credit hours of prerequisite course work that may be completed in approximately two to three semesters.

Out-of-field students must complete the following undergraduate prerequisite courses or their equivalents:

- DEP 2004 Developmental Psychology (3 credit hours)
- STA 2014C Principles of Statistics (3 credit hours) or STA 2023 Statistical Methods I (3 credit hours)
- LIN 3716 Language Development: Birth Through 8 Years (3 credit hours)
- LIN 4711/4711L Language Analysis and Lab (4 credit hours)
- SPA 3101 Physiological Bases of Speech and Hearing (3 credit hours)
- SPA 3104 Neural Bases of Communication (3 credit hours)



- SPA 3112/3112L Basic Phonetics and Lab (4 credit hours)
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- SPA 4032 Audiology (3 credit hours)
- SPA 4321 Audiologic Rehabilitation (3 credit hours)
- SPA 4056C Clinical Methods in Communication Disorders (5 credit hours)
- SPA 4478 Multicultural Aspects of Communication Disorders and Differences (3 credit hours)

### **Core Courses—35 Credit Hours**

- SPA 6204 Articulation/Phonological Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6403 School-Age Language Disorders (3 credit hours)
- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6805 Research in Communicative Disorders (3 credit hours)

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in accordance with the guidelines outlined by the American Speech-Language-Hearing Association (ASHA). Clinical practica and externships vary in length and do not always coincide with the academic calendar.

- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)
- SPA 6946 Externship (6 credit hours)
- SPA 6946 Externship (12 credit hours)

### **Thesis Option—9 Credit Hours**

Students who elect this option complete a thesis in Communication Sciences and Disorders for 6 credit hours that may substitute for 6 credit hours of electives. An additional 3 credit hour elective must be selected in consultation with an academic adviser.

Thesis hours cannot be counted toward graduation requirements if students fail to complete or successfully defend their thesis. For additional information, thesis students and their advisory committees should refer to the thesis requirements in the UCF Graduate Catalog.

### **Nonthesis Option—9 Credit Hours**

Students who elect this option must select three electives in consultation with an academic adviser.

### **Comprehensive Examination**

Passing a Departmental Comprehensive Examination is a requirement for completion of the Master's degree in Communication Sciences and Disorders.

### **Equipment Fee**

Students in the Communication Sciences and Disorders MA Program pay a \$90 equipment fee each semester that they are enrolled.

### **Sample Plan of Study for the Traditional Program**

The Traditional MA program requires a prescribed sequence of academic and clinical courses which

may vary according to the semester of entry. The following is a sample plan of study.

### Semester 1

- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6204 Articulation/Phonological Disorders (3 credit hours)

### Semester 2

- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6403 School-Aged Language Disorders (3 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)

### Semester 3

- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)

### Semester 4

- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- Elective (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)

### Semester 5

- SPA 6805 Research in Communicative Disorders (3 credit hours)
- Elective (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)

### Semester 6

- SPA 6946 Externship (6 credit hours)
- Elective (3 credit hours)

### Semester 7

- SPA 6946 Externship (12 credit hours)

## ADMISSIONS

In addition to general admission requirements,

applicants must provide an official, competitive GRE score taken within the last five years, at least a 3.5 GPA in the last 60 hours, three letters of recommendation, a letter of intent describing educational background, professional experiences, a résumé, and a background check.

The accelerated BA/BS to MA program in Communication Sciences and Disorders allows highly qualified University of Central Florida undergraduate majors in Communication Sciences and Disorders to begin taking graduate level courses that will count toward their master's degree while completing their baccalaureate degree program. Students apply for admission to the accelerated program either in the last semester of their sophomore year or the first semester of their junior year.

**Applicants must submit a hard copy (paper) application directly to the Department of Communication Sciences and Disorders. Please contact the Department for the appropriate application form.**

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- 3.5 GPA or higher in course work earned at University of Central Florida.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation from faculty in the department.
- Résumé.
- A letter of intent describing the reasons for applying to the accelerated program, personal strengths and how they have been demonstrated and future goals.

Students will be formally admitted to the master's program following receipt of the bachelor's degree.

Accelerated BA/BS to MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Feb 1	Sep 1	Dec 15

**CONTACT INFO**

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 Program Director  
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 Telephone 407-823-4808  
 Department of Communicative Disorders  
 Health and Public Affairs II 101R

Communication Sciences and Disorders  
 MA

# Communicative Disorders Consortium MA

**TRACK DESCRIPTION**

The Department of Communication Sciences and Disorders offers the Consortium program option leading to the Master of Arts degree.

**CURRICULUM**

## Total Required Hours for MA—72 Credit Hours Minimum beyond the Bachelor's Degree.

The Consortium MA Program option consists of a minimum of 72 semester hours, including 35 credit hours of core academic courses, 9 credit hours of electives, and 28 credit hours of clinical practice. With regard to requirements for clinical practice, Consortium Track students typically

complete the full-time externship prior to the part-time externship. The full-time externship must be completed in a school setting that is different from the practitioner's regular assignment.

**Prerequisites**

All students must complete at least 3 credit hours in statistics with a grade of "C" or better. Undergraduate course work in statistics is a prerequisite to SPA 6805 Research in Communicative Disorders.

**Core Courses—35 Credit Hours**

- SPA 6204 Articulation/Phonological Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6403 School-Aged Language Disorders (3 credit hours)
- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6567 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6805 Research in Communicative Disorders (3 credit hours)

**Clinical Practice—28 Credit Hours**

Supervised clinical practice is an integral part of the graduate program in Communication Sciences and Disorders. It provides students with an opportunity to apply classroom knowledge to the evaluation and management of individuals with a wide variety of communication disorders. Students complete three clinical practica and a diagnostic practicum in the UCF Communication Disorders Clinic and other affiliated facilities, as well as externships in schools, hospitals, rehabilitation centers, skilled nursing facilities, long-term care facilities, community clinics, and private practices. Through these practica and externships, students obtain a minimum of 400 clock hours of supervised clinical experience in accordance with the guidelines outlined by the American Speech-Language-Hearing Association (ASHA). Clinical practica and externships vary in length and do not always coincide with the academic calendar.

- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)
- SPA 6946 Externship (6 credit hours)
- SPA 6946 Externship (12 credit hours)

### **Thesis Option—9 Credit Hours**

Students who elect this option complete a thesis in Communication Sciences and Disorders for 6 credit hours that may substitute for 6 credit hours of electives. An additional 3 credit hour elective must be selected in consultation with an academic adviser.

Thesis hours cannot be counted toward graduation requirements if students fail to complete or successfully defend their thesis. For additional information, thesis students and their advisory committees should refer to the thesis requirements in the UCF Graduate Catalog.

### **Nonthesis Option—9 Credit Hours**

Students who elect this option must select three electives in consultation with an academic adviser.

### **Independent Learning**

All students in the Master of Arts in Communication Sciences and Disorders program engage in independent learning through inquiry, dialogue, and practice. Experiences such as client case studies, scholarly reviews, research projects, clinical practica and externships provide students independent learning opportunities to attain knowledge, skills, and professional behaviors. In capstone externships, students bridge university classroom and clinic lessons to real-world educational and health-related settings.

### **Equipment Fee**

Students in the Communication Sciences and Disorders MA Program pay a \$90 equipment fee each semester that they are enrolled.

### **Sample Plan of Study for the Consortium Program with a Nonthesis Option**

The Consortium program requires a prescribed sequence of academic and clinical courses that may vary according to the semester of entry. The following is a sample plan of study with a nonthesis option.

#### **Year 1**

##### **Summer**

- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6204 Articulation/Phonological Disorders (3 credit hours)

##### **Spring**

- SPA 6225C Fluency Disorders (4 credit hours)

#### **Year 2**

##### **Summer**

- SPA 6403 School-Aged Language Disorders (3 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)

#### **Year 3**

##### **Summer**

- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)

##### **Fall or Spring**

- Elective (3 credit hours)

#### **Year 4**

##### **Summer**

- SPA 6474 Assessment and Management of Communication Differences and Disorders in Multicultural Populations (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)
- Elective (3 credit hours)

##### **Fall**

- Elective (3 credit hours)

##### **Spring**

- SPA 6946 Full-Time Externship (12 credit hours)

**Year 5****Summer**

- SPA 6805 Research in Communicative Disorders (3 credit hours)
- SPA 6946 Part-Time Externship (6 credit hours)

Please direct any questions regarding the Consortium Program to Dr. Linda I. Rosa-Lugo, UCF Consortium Coordinator, at (407) 823-4805 or lrosa@mail.ucf.edu.

**Total Required Hours for MA—72  
Credit Hours Minimum beyond the  
Bachelor's Degree.**

**Prerequisites**

- To be certified to practice by the American Speech-Language-Hearing Association (ASHA), all students must have undergraduate transcript credit, which could include course work, advanced placement, CLEP, or examination equivalency, for each of the following areas: biological sciences, physical sciences, social/behavioral sciences, and mathematics or statistics. Courses may consist of any number of credits and must be taken outside the discipline.
- All students must complete at least 3 credit hours in undergraduate statistics with a grade of "C" or better. Undergraduate course work in statistics is a prerequisite to SPA 6805 Research in Communicative Disorders.
- The Department admits qualified in-field applicants, with an undergraduate degree in Communication Sciences and Disorders or Speech-Language Pathology and Audiology, and out-of-field applicants, with undergraduate degrees in other majors. Out-of-field students require an additional 36 to 42 credit hours of prerequisite course work that may be completed in approximately two to three semesters.

Out-of-field students must complete the following undergraduate prerequisite courses or their equivalents:

- DEP 2004 Developmental Psychology (3 credit hours)
- STA 2014C Principles of Statistics (3 credit hours) or STA 2023 Statistical Methods I (3 credit hours)
- LIN 3716 Language Development: Birth Through 8 Years (3 credit hours)

- LIN 4711/4711L Language Analysis and Lab (4 credit hours)
- SPA 3101 Physiological Bases of Speech and Hearing (3 credit hours)
- SPA 3104 Neural Bases of Communication (3 credit hours)
- SPA 3112/3112L Basic Phonetics and Lab (4 credit hours)
- SPA 3011/3011L Speech Science I: Production and Lab (4 credit hours)
- SPA 3123/3123L Speech Science II: Perception and Lab (4 credit hours)
- SPA 4032 Audiology (3 credit hours)
- SPA 4321 Audiologic Rehabilitation (3 credit hours)
- SPA 4056C Clinical Methods in Communication Disorders (5 credit hours)
- SPA 4478 Multicultural Aspects of Communication Disorders and Differences (3 credit hours)

**Core Courses—35 Credit Hours**

- SPA 6204 Articulation/Phonological Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6403 School-Age Language Disorders (3 credit hours)
- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6805 Research in Communicative Disorders (3 credit hours)

**Clinical Practice—28 Credit Hours**

Supervised clinical practice is an integral part of the graduate program in Communication Sciences and Disorders. It provides students with an opportunity to apply classroom knowledge to the evaluation and management of individuals with a wide variety of communication disorders. Students complete three clinical practica and a diagnostic practicum in the UCF Communication Disorders Clinic and other

affiliated facilities, as well as externships in schools, hospitals, rehabilitation centers, skilled nursing facilities, long-term care facilities, community clinics, and private practices. Through these practica and externships, students obtain a minimum of 400 clock hours of supervised clinical experience in accordance with the guidelines outlined by the American Speech-Language-Hearing Association (ASHA). Clinical practica and externships vary in length and do not always coincide with the academic calendar.

- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)
- SPA 6946 Externship (6 credit hours)
- SPA 6946 Externship (12 credit hours)

### **Thesis Option—9 Credit Hours**

Students who elect this option complete a thesis in Communication Sciences and Disorders for 6 credit hours that may substitute for 6 credit hours of electives. An additional 3 credit hour elective must be selected in consultation with an academic adviser.

Thesis hours cannot be counted toward graduation requirements if students fail to complete or successfully defend their thesis. For additional information, thesis students and their advisory committees should refer to the thesis requirements in the UCF Graduate Catalog.

### **Nonthesis Option—9 Credit Hours**

Students who elect this option must select three electives in consultation with an academic adviser.

### **Comprehensive Examination**

Passing a Departmental Comprehensive Examination is a requirement for completion of the Master's degree in Communication Sciences and Disorders.

### **Equipment Fee**

Students in the Communication Sciences and Disorders MA Program pay a \$90 equipment fee each semester that they are enrolled.

## **Sample Plan of Study for the Traditional Program**

The Traditional MA program requires a prescribed sequence of academic and clinical courses which may vary according to the semester of entry. The following is a sample plan of study.

### **Semester 1**

- SPA 6402 Preschool Language Disorders (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)
- SPA 6211C Voice Disorders (4 credit hours)
- SPA 6204 Articulation/Phonological Disorders (3 credit hours)

### **Semester 2**

- SPA 6225C Fluency Disorders (4 credit hours)
- SPA 6403 School-Aged Language Disorders (3 credit hours)
- SPA 6236 Motor Speech Disorders in Adults and Children (3 credit hours)
- SPA 6503 Entry-Level Clinical Practicum (3 credit hours)

### **Semester 3**

- SPA 6565 Feeding and Swallowing Disorders (3 credit hours)
- SPA 6559 Augmentative and Alternative Communication Systems (3 credit hours)
- SPA 6942C Intermediate Clinical Practicum (3 credit hours)

### **Semester 4**

- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- Elective (3 credit hours)
- SPA 6943C Advanced Clinical Practicum (3 credit hours)

### **Semester 5**

- SPA 6805 Research in Communicative Disorders (3 credit hours)
- Elective (3 credit hours)
- SPA 6553L Differential Diagnosis in Speech and Language Laboratory (1 credit hour)

### **Semester 6**

- SPA 6946 Externship (6 credit hours)
- Elective (3 credit hours)

**Semester 7**

- SPA 6946 Externship (12 credit hours)
- The externship provides the independent learning experience for the program.

**ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, a letter of intent describing educational background, professional experiences, résumé, and a background check.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation, two from former professors for the Traditional Program and at least one from the district school administrator or program specialist of the Speech-Language Program for the Consortium Program.
- A letter of intent describing educational background, professional experiences, interest in the field, and career goals.
- Résumé.
- Upon admission, a background check completed through [www.certifiedbackground.com](http://www.certifiedbackground.com).

The Department admits qualified in-field applicants, with an undergraduate degree in Communication Sciences and Disorders or Speech-Language Pathology and Audiology, and out-of-field applicants, with undergraduate degrees in other majors. Out-of-field students require an additional 36 to 42 credit hours of prerequisite course work that may be completed in approximately two to three semesters.

Communicative Disorders Consortium MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

Communicative Disorders Consortium MA	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Feb 1	Sep 1	Dec 15

**CONTACT INFO**

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 Department of Communicative Disorders  
 Health and Public Affairs II 101R

**Communication MA**

- Interpersonal Communication MA
- Mass Communication MA

**PROGRAM DESCRIPTION**

The Master of Arts in Communication offers programs in Interpersonal Communication and Mass Communication. The curriculum focuses on theoretical and applied perspectives of communication theory and research. Graduates derive benefits in a variety of academic and career directions, including entry into doctoral programs, advancement within existing career contexts, and the procurement of new career directions in the public and private sectors.

**CURRICULUM**

All students must select either the Interpersonal Communication or Mass Communication option. To select or change an option, students should consult the graduate program director at the Nicholson School of Communication.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Written statement outlining the student’s academic and professional goals.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Communication MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

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 Nicholson School of Communication  
 Communication 238

Communication MA

# Interpersonal Communication MA

## TRACK DESCRIPTION

The Master of Arts in Interpersonal Communication focuses on theoretical and applied perspectives of communication theory and research.

## CURRICULUM

### Total Required Hours for MA—33-34 Credit Hours Minimum beyond the Bachelor’s Degree.

Before completing the degree, a student must select either the thesis or comprehensive exam option. The decision whether to write a thesis and defend it in an oral examination or to take the comprehensive exams should be made in consultation with the Nicholson School of Communication graduate program director. Typically, students entering or continuing professional careers following the MA should select the comprehensive exam option. Those who plan to enter doctoral programs should select the thesis option.

### Core Courses—15 Credit Hours

These courses focus on independent learning. A research paper or project is required in each of these courses, where students design and implement a research study. Additionally, many students complete one or more courses of independent study or internship and in some cases research reports are submitted and accepted for presentation at conferences.

- COM 6046 Interpersonal Communication (3 credit hours)
- COM 6303 Communication Research I (3 credit hours)
- COM 6304 Communication Research II (3 credit hours)
- SPC 6219 Modern Communication Theory (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours)

### Restricted Electives—15 Credit Hours

With approval, independent study and internship credit taken through the Nicholson School of Communication may be applied to electives.

Core courses from other tracks, special topics, independent studies, 5000-level courses, and approved courses taken outside the Nicholson School of Communication may be counted as restricted electives.

- ADV 6209 Advertising and Society (3 credit hours)
- COM 6025 Health Communication (3 credit hours)



- COM 6048 Communication in Close Relationships (3 credit hours)
- COM 6121 Communication Management (3 credit hours)
- COM 6463 Studies in Intercultural Communication (3 credit hours)
- COM 6467 Studies in Persuasion (3 credit hours)
- COM 6468 Communication and Conflict (3 credit hours)
- COM 6525 Communication Strategy and Planning (3 credit hours)
- COM 6047 Interpersonal Support in the Workplace (3 credit hours)
- MMC 6202 Legal and Ethical Issues for Communication (3 credit hours)
- MMC 6307 International Communication (3 credit hours)
- MMC 6407 Visual Communication Theory (3 credit hours)
- MMC 6567 Seminar in New Media (3 credit hours)
- MMC 6600 Media Effects and Audience Analysis (3 credit hours)
- MMC 6607 Communication and Society (3 credit hours)
- MMC 6612 Communication and Government (3 credit hours)
- PUR 6403 Crisis Public Relations (3 credit hours)
- SPC 6442 Small Group Communication (3 credit hours)

### **Thesis Option**

Students complete a formal thesis on a topic based on consultation with their thesis adviser and committee and will meet both departmental and university thesis requirements.

- Thesis (4 Credit Hours)

### **Nonthesis Option**

Students in the nonthesis option must take one additional elective for three credit hours.

- Elective (3 credit hours)

### **Comprehensive Examinations**

Students selecting the nonthesis option must take and pass comprehensive examinations. Students take written examinations from six courses. All exams must be based on graduate courses offered by the Nicholson School of Communication. The exam courses must include the four core communication courses and two electives.

Students must pass five of the six exams with grades of “B” or higher to successfully complete the comprehensive exam requirement. Students who pass four of the six exams must rewrite the two failed exams and pass one of the two. This is scheduled early in the subsequent semester. Students who pass less than four exams must retake all six exams at the regularly scheduled comprehensive exam times in the subsequent semester.

Students who elect the thesis option engage in independent learning through the design and implementation of original research in the thesis process. Students who pursue the comprehensive exam option experience independent learning through their individual preparation for each of six exams. All students engage in independent learning in every Communication core course. A research paper or project is required in each of these classes. The papers and projects provide independent learning by requiring students to design and carry out research projects and develop analytical papers, some of which are submitted to conferences and/or journals for peer review. Internships and independent studies are also common opportunities for independent learning in the Communication MA Program.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years and a written statement outlining the student’s academic and professional goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Written statement outlining the student’s academic and professional goals.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Interpersonal Communication MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 1	Nov 1	Apr 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Nicholson School of Communication  
 Communication 238

### Communication MA

# Mass Communication MA

## TRACK DESCRIPTION

The Master of Arts in Mass Communication focuses on theoretical and applied perspectives of communication theory and research.

## CURRICULUM

### Total Required Hours for MA—33-34 Credit Hours Minimum beyond the Bachelor's Degree.

Before completing the degree, a student must select either the thesis or comprehensive exam option. The decision whether to write a thesis and defend it in an oral examination or to take the comprehensive exams should be made in consultation with the Nicholson School of Communication graduate program director. Typically, students entering or continuing professional careers following the MA should select the comprehensive exam option. Those who plan to enter doctoral programs should select the thesis option.

## Core Courses—12 Credit Hours

These courses focus on independent learning. A research paper or project is required in each of these courses, where students design and implement a research study. Additionally, many students complete one or more courses of independent study or internship and in some cases research reports are submitted and accepted for presentation at conferences.

- MMC 6402 Mass Communication Theory (3 credit hours)
- MMC 6445 Mass Media Research I (3 credit hours)
- MMC 6446 Mass Media Research II (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours)

## Restricted Electives—18 Credit Hours

With approval, independent study and internship credit taken through the Nicholson School of Communication may be applied to electives.

Core courses from other tracks, special topics, independent studies, 5000-level courses, and approved courses taken outside the Nicholson School of Communication may be counted as restricted electives.

- ADV 6209 Advertising and Society (3 credit hours)
- COM 6025 Health Communication (3 credit hours)
- COM 6048 Communication in Close Relationships (3 credit hours)
- COM 6121 Communication Management (3 credit hours)
- COM 6463 Studies in Intercultural Communication (3 credit hours)
- COM 6467 Studies in Persuasion (3 credit hours)
- COM 6468 Communication and Conflict (3 credit hours)
- COM 6525 Communication Strategy and Planning (3 credit hours)
- COM 6047 Interpersonal Support in the Workplace (3 credit hours)
- MMC 6202 Legal and Ethical Issues for Communication (3 credit hours)
- MMC 6307 International Communication (3 credit hours)
- MMC 6407 Visual Communication Theory (3 credit hours)

- MMC 6567 Seminar in New Media (3 credit hours)
- MMC 6600 Media Effects and Audience Analysis (3 credit hours)
- MMC 6607 Communication and Society (3 credit hours)
- MMC 6612 Communication and Government (3 credit hours)
- PUR 6403 Crisis Public Relations (3 credit hours)
- SPC 6442 Small Group Communication (3 credit hours)

### Thesis Option

Students in the thesis option complete a formal thesis on a topic based on consultation with their thesis adviser and committee and will meet both departmental and university thesis requirements.

- Thesis (4 Credit Hours)

### Nonthesis Option

Students in the nonthesis option must take one additional elective for three credit hours, bringing the total of electives to 21 credit hours.

- Elective (3 credit hours)

### Comprehensive Examinations

Students selecting the nonthesis option must take and pass comprehensive examinations. Students take written examinations from six courses. All exams must be based on graduate courses offered by the Nicholson School of Communication. The exam courses must include the four core communication courses and two electives.

Students must pass five of the six exams with grades of “B” or higher to successfully complete the comprehensive exam requirement. Students who pass four of the six exams must rewrite the two failed exams and pass one of the two. This is scheduled early in the subsequent semester. Students who pass less than four exams must retake all six exams at the regularly scheduled comprehensive exam times in the subsequent semester.

Students who elect the thesis option engage in independent learning through the design and implementation of original research in the thesis process. Students who pursue the comprehensive exam option experience independent learning through their individual preparation for each of six

exams. All students engage in independent learning in every Communication core course. A research paper or project is required in each of these classes. The papers and projects provide independent learning by requiring students to design and carry out research projects and develop analytical papers, some of which are submitted to conferences and/or journals for peer review. Internships and independent studies are also common opportunities for independent learning in the Communication MA Program.

### ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years and a written statement outlining the student’s academic and professional goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Written statement outlining the student’s academic and professional goals.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Mass Communication MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 1	Nov 1	Apr 1
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Communication 238

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# Computer Engineering MSCpE

- Accelerated BS to MSCpE

## PROGRAM DESCRIPTION

The Computer Engineering MSCpE degree offers programs in a number of technical (research) areas, such as Computer Networks and Computer Security (CNCS), Computer Systems and VLSI Design (CS/VLSI), Intelligent Systems and Machine Learning (ISML), and Software Systems and Algorithms (SSA). All programs offer a thesis option and a nonthesis option, as well as an Accelerated BS to MSCp program. Students in the program receive a broad background in the various technical areas, while specializing in a research area of their interest.

## CURRICULUM

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours). Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work.

### Total Required Hours for MSCpE—30 Credit Hours Minimum beyond the Bachelor's Degree.

### Articulation

Undergraduate articulation courses may be required for students with bachelor's and/or master's degrees in fields other than Computer Engineering. The articulation courses will be determined by

recommendations from the CpE faculty to the graduate program director on a case-by-case basis.

In general, all students must have had the following undergraduate courses (or equivalent) before admission to graduate study. Students who have not taken these courses may be admitted with the provision the courses will be taken and a grade of "B" or higher obtained. Courses taken to correct deficiencies do not satisfy the minimum requirements for students' Program of Study.

- Mathematics through Differential Equations (equivalent to MAC 2311, MAC 2312, MAC 2313, MAP 2302).
- College Physics with Calculus (equivalent to PHY 2048 and PHY 2049).
- Computer Organization and Design (equivalent to EEL 4767C).
- Probability and Statistics (equivalent to STA 3032).
- Numerical Methods and matrix algebra (equivalent to EGN 3420).
- Engineering Data Structures (equivalent to EEL 4851C).
- Digital Logic Circuits (equivalent to EEL 3342C).

## Transfer Credits

Graduate students with a bachelor's degree in Computer Engineering from UCF may transfer up to 9 credit hours of 5000-level or higher coursework toward a nonthesis MSCpE option, or a thesis option. Up to 9 credit hours may be transferred from graduate work conducted elsewhere from a regionally accredited institution.

## Thesis and Nonthesis Options

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours) in all technical areas. Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work. This requirement for a completed program of study is strictly enforced.

In addition to course work (nonthesis and thesis students) and thesis work (thesis students), all students could also be engaged in reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in

that specialization area. This can be accomplished through Directed Research and Independent Study courses.

### Thesis Option

This option requires a minimum of 30 credit hours of approved course work, of which 6 are thesis work (EEL 6971). The course requirements are as follows:

- Courses from the suggested list of courses for the student's chosen technical area (a list of suggested courses is provided below).
- No more than 6 credits of thesis (EEL 6971) will count toward the degree requirement
- At least one-half of the credit hours must be from 6000-level courses
- Thesis students who are full time must continue to enroll in three credit hours of thesis course work each semester until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis, but only six hours total will count towards the degree requirement.

### Nonthesis Option

This option requires a minimum of 30 credit hours of course work and is intended primarily for part-time students. Program requirements are the same as the thesis option except that the thesis requirement is replaced by 6 credit hours of course work.

Nonthesis students are required to pass a culminating experience. The culminating experience requires that the non-thesis MS students submit a semester prior to their intended graduation a portfolio of activities to the designated CpE Graduate Coordinator. This portfolio contains the student's resume and completed graded assignments of extended projects that the students have completed as part of their course work or independent studies that they have conducted throughout their tenure in the MSCpE program. This portfolio will be evaluated by an appropriate EECS committee and a "Satisfactory" or "Unsatisfactory" grade will be granted. An appropriate plan to correct an "Unsatisfactory" grade will be provided to the student who receives such a grade.

### Elective Courses

The majority of courses should be chosen from the suggested list of courses (below) pertaining

to the student's chosen technical area. Courses from suggested lists of other technical areas that are supported by the CpE program could also be chosen.

### Suggested Courses for MSCpE Program

The School of Electrical Engineering and Computer Science (Computer Engineering Program) supports a number of technical research areas in which a master's student is expected to do research. These technical areas are (in alphabetical order): Computer Networks and Computer Security (CNCS), Computer Systems and VLSI Design (CS/VLSI), Intelligent Systems and Machine Learning (ISML), and Software Systems and Algorithms (SSA).

In each one of these areas there is a suggested list of courses recommended for master's students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research (technical) area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a master's student is planning to take during his/her master's studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### Suggested Courses for Computer Networks and Computer Security (CNCS)

- CDA 5110 Parallel Processing (3 credit hours)
- CDA 5530 Performance Models of Computers and Networks (3 credit hours)
- CDA 6520 Advanced Computer Networks (3 credit hours)
- CDA 6XXX Research in Computer Network and Systems (3 credit hours)
- CNT 5008 Computer Communication Network Architecture (3 credit hours)
- CNT 6519 Wireless Security and Forensics (3 credit hours)
- CNT 6707 Computer Network Design and Distributed Processing (3 credit hours)
- COP 5537 Network Optimization (3 credit hours)
- COP 5611 Operating Systems (3 credit hours)
- CAP 6135 Malware and Software Vulnerability Analysis (3 credit hours)

- COP 6525 Distributive Processing of Digital Evidence (3 credit hours)
- EEL 5780 Wireless Networks (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6785 Computer Network Design (3 credit hours)
- EEL 6788 Advanced Topics in Wireless Networks (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)
- EEL 6897 Software Development for Real-Time Engineering Systems (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Computer Networks and Computer Security area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Networks and Computer Security committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

#### **Suggested Courses for Computer Systems and VLSI (CS/VLSI)**

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- CDA 5110 Parallel Architecture and Algorithms (3 credit hours)
- CDA 5215 Architecture and Design of VLSI (3 credit hours)
- CDA 6107 Parallel Computer Architecture (3 credit hours)
- CDA 6211 VLSI Algorithms and Architecture (3 credit hours)
- COT 6415 Complexity of Parallel Computation (3 credit hours)
- EEL 5390 Full Custom-VLSI Design (3 credit hours)
- EEL 5704 Computer Aided Logical Design (3 credit hours)
- EEL 5722C Field Programmable Gate Array (FPGA) Design (3 credit hours)
- EEL 5762 Performance Analysis of Computer and Communication Systems (3 credit hours)
- EEL 6327 Design of Video Coded Systems (3 credit hours)

- ECM 6308 Current Topics in Parallel Processing (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Computer Systems and VLSI (CS/VLSI) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Systems and VLSI (CS/VLSI) committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate coursework has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

#### **Suggested Courses for Intelligent Systems and Machine Learning (ISML)**

- CAP 5055 AI for Game Programming (3 credit hours)
- CAP 5512 Evolutionary Computation (3 credit hours)
- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- CAP 6616 Neuro-Evolution and Generative Developmental Systems (3 credit hours)
- CAP 6637 Activity and Plan Recognition (3 credit hours)
- CAP 6640 Computer Understanding of Natural Language (3 credit hours)
- CAP 6671 Intelligent Systems: Robots, Agents and Humans (3 credit hours)
- CAP 6675 Complex Adaptive Systems (3 credit hours)
- CAP 6676 Knowledge Representation (3 credit hours)
- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 6769 Parallel Knowledge Processing Systems (3 credit hours)
- EEL 6875 Autonomous Agents (3 credit hours)
- EEL 6876 Current Topics in Artificial Intelligence (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Intelligent

Systems and Machine Learning (ISML) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Intelligent Systems and Machine Learning committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate coursework has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

### **Suggested Courses for Software Systems and Algorithms (SSA)**

- CAP 6XXX Biological Databases and Bioinformatics Tools (3 credit hours)
- CAP 6XXX Algorithms in Computational Biology (3 credit hours)
- CGS 5131 Computer Forensics I (3 credit hours)
- CGS 5132 Computer Forensics II (3 credit hours)
- CDA 5532 Network Generic-Computing (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)
- CEN 5016 Software Engineering (3 credit hours)
- COP 5021 Program Analysis (3 credit hours)
- COP 6730 Transaction Processing (3 credit hours)
- COP 6731 Advanced Database Systems (3 credit hours)
- COP 6XXX Formal Specification of Software Systems (3 credit hours)
- COT 5310 Formal Languages and Automata (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- COT 6410 Computational Complexity (3 credits)
- COT 6600 Quantum Computing (3 credit hours)
- COT 6602 Introduction to Quantum Information Theory (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Software Systems and Algorithms (SSA) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Software Systems and Algorithms committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate coursework has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in computer engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting applicants into their research program.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Computer Engineering MSCpE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Computer Engineering MSCpE

# Accelerated BS to MSCpE

## TRACK DESCRIPTION

The accelerated undergraduate/graduate program in Computer Engineering allows highly qualified undergraduate majors in Computer engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program. Participation will enable completion of the Bachelor of Science and Master of Science degrees in five instead of six years for students enrolled in full-time course work.

## CURRICULUM

The accelerated undergraduate/graduate program in Computer Engineering allows highly qualified undergraduate majors in Computer Engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program. The BSCpE is awarded after completion of all university requirements 120 credit hours and 71 credit hours of engineering course work. The MSCpE is

awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved 5000- and 6000-level courses of grades "B" (3.0) or better may be counted toward the BS and MS degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Computer Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B" (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

## Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

## Graduate Requirements

The program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours). Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work. Please see the graduate program for more information and the requirements.

## Total Required Hours for MSCpE—30 Credit Hours Minimum beyond the Bachelor's Degree.

## Articulation

Undergraduate articulation courses may be required for students with bachelor's and/or master's degrees in fields other than Computer Engineering. The articulation courses will be determined by recommendations from the CpE faculty to the graduate program director on a case-by-case basis.

In general, all students must have had the following undergraduate courses (or equivalent) before admission to graduate study. Students who have not taken these courses may be admitted with the provision the courses will be taken and a grade of "B" or higher obtained. Courses taken to correct deficiencies do not satisfy the minimum requirements for students' Program of Study.



- Mathematics through Differential Equations (equivalent to MAC 2311, MAC 2312, MAC 2313, MAP 2302).
- College Physics with Calculus (equivalent to PHY 2048 and PHY 2049).
- Computer Organization and Design (equivalent to EEL 4767C).
- Probability and Statistics (equivalent to STA 3032).
- Numerical Methods and matrix algebra (equivalent to EGN 3420).
- Engineering Data Structures (equivalent to EEL 4851C).
- Digital Logic Circuits (equivalent to EEL 3342C).
- Courses from the suggested list of courses for the student's chosen technical area (a list of suggested courses is provided below).
- No more than 6 credits of thesis (EEL 6971) will count toward the degree requirement
- At least one-half of the credit hours must be from 6000-level courses
- Thesis students who are full time must continue to enroll in three credit hours of thesis course work each semester until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis, but only six hours total will count towards the degree requirement.

## Transfer Credits

Graduate students with a bachelor's degree in Computer Engineering from UCF may transfer up to 9 credit hours of 5000-level or higher coursework toward a nonthesis MSCpE option, or a thesis option. Up to 9 credit hours may be transferred from graduate work conducted elsewhere from a regionally accredited institution.

## Thesis and Nonthesis Options

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours) in all technical areas. Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work. This requirement for a completed program of study is strictly enforced.

In addition to course work (nonthesis and thesis students) and thesis work (thesis students), all students could also be engaged in reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. This can be accomplished through Directed Research and Independent Study courses.

### Thesis Option

This option requires a minimum of 30 credit hours of approved course work, of which 6 are thesis work (EEL 6971). The course requirements are as follows:

### Nonthesis Option

This option requires a minimum of 30 credit hours of course work and is intended primarily for part-time students. Program requirements are the same as the thesis option except that the thesis requirement is replaced by 6 credit hours of course work.

Nonthesis students are required to pass a culminating experience. The culminating experience requires that the non-thesis MS students submit a semester prior to their intended graduation a portfolio of activities to the designated CpE Graduate Coordinator. This portfolio contains the student's resume and completed graded assignments of extended projects that the students have completed as part of their course work or independent studies that they have conducted throughout their tenure in the MSCpE program. This portfolio will be evaluated by an appropriate EECS committee and a "Satisfactory" or "Unsatisfactory" grade will be granted. An appropriate plan to correct an "Unsatisfactory" grade will be provided to the student who receives such a grade.

### Elective Courses

The majority of courses should be chosen from the suggested list of courses (below) pertaining to the student's chosen technical area. Courses from suggested lists of other technical areas that are supported by the CpE program could also be chosen.

### Suggested Courses for MSCpE Program

The School of Electrical Engineering and Computer Science (Computer Engineering Program) supports a number of technical research areas in which

a master's student is expected to do research. These technical areas are (in alphabetical order): Computer Networks and Computer Security (CNCS), Computer Systems and VLSI Design (CS/VLSI), Intelligent Systems and Machine Learning (ISML), and Software Systems and Algorithms (SSA).

In each one of these areas there is a suggested list of courses recommended for master's students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research (technical) area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a master's student is planning to take during his/her master's studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### **Suggested Courses for Computer Networks and Computer Security (CNCS)**

- CDA 5110 Parallel Processing (3 credit hours)
- CDA 5530 Performance Models of Computers and Networks (3 credit hours)
- CDA 6520 Advanced Computer Networks (3 credit hours)
- CDA 6XXX Research in Computer Network and Systems (3 credit hours)
- CNT 5008 Computer Communication Network Architecture (3 credit hours)
- CNT 6519 Wireless Security and Forensics (3 credit hours)
- CNT 6707 Computer Network Design and Distributed Processing (3 credit hours)
- COP 5537 Network Optimization (3 credit hours)
- COP 5611 Operating Systems (3 credit hours)
- CAP 6135 Malware and Software Vulnerability Analysis (3 credit hours)
- COP 6525 Distributive Processing of Digital Evidence (3 credit hours)
- EEL 5780 Wireless Networks (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6785 Computer Network Design (3 credit hours)
- EEL 6788 Advanced Topics in Wireless Networks (3 credit hours)

- EEL 6883 Software Engineering II (3 credit hours)
- EEL 6897 Software Development for Real-Time Engineering Systems (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Computer Networks and Computer Security area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Networks and Computer Security committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

### **Suggested Courses for Computer Systems and VLSI (CS/VLSI)**

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- CDA 5110 Parallel Architecture and Algorithms (3 credit hours)
- CDA 5215 Architecture and Design of VLSI (3 credit hours)
- CDA 6107 Parallel Computer Architecture (3 credit hours)
- CDA 6211 VLSI Algorithms and Architecture (3 credit hours)
- COT 6415 Complexity of Parallel Computation (3 credit hours)
- EEL 5390 Full Custom-VLSI Design (3 credit hours)
- EEL 5704 Computer Aided Logical Design (3 credit hours)
- EEL 5722C Field Programmable Gate Array (FPGA) Design (3 credit hours)
- EEL 5762 Performance Analysis of Computer and Communication Systems (3 credit hours)
- EEL 6327 Design of Video Coded Systems (3 credit hours)
- ECM 6308 Current Topics in Parallel Processing (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Computer Systems and VLSI (CS/VLSI) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Computer Systems and VLSI (CS/VLSI) committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate coursework has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

### **Suggested Courses for Intelligent Systems and Machine Learning (ISML)**

- CAP 5055 AI for Game Programming (3 credit hours)
- CAP 5512 Evolutionary Computation (3 credit hours)
- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- CAP 6616 Neuro-Evolution and Generative Developmental Systems (3 credit hours)
- CAP 6637 Activity and Plan Recognition (3 credit hours)
- CAP 6640 Computer Understanding of Natural Language (3 credit hours)
- CAP 6671 Intelligent Systems: Robots, Agents and Humans (3 credit hours)
- CAP 6675 Complex Adaptive Systems (3 credit hours)
- CAP 6676 Knowledge Representation (3 credit hours)
- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 6769 Parallel Knowledge Processing Systems (3 credit hours)
- EEL 6875 Autonomous Agents (3 credit hours)
- EEL 6876 Current Topics in Artificial Intelligence (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Intelligent Systems and Machine Learning (ISML) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Intelligent Systems and Machine Learning committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of graduate coursework has been completed. Thesis

students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

### **Suggested Courses for Software Systems and Algorithms (SSA)**

- CAP 6XXX Biological Databases and Bioinformatics Tools (3 credit hours)
- CAP 6XXX Algorithms in Computational Biology (3 credit hours)
- CGS 5131 Computer Forensics I (3 credit hours)
- CGS 5132 Computer Forensics II (3 credit hours)
- CDA 5532 Network Generic-Computing (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)
- CEN 5016 Software Engineering (3 credit hours)
- COP 5021 Program Analysis (3 credit hours)
- COP 6730 Transaction Processing (3 credit hours)
- COP 6731 Advanced Database Systems (3 credit hours)
- COP 6XXX Formal Specification of Software Systems (3 credit hours)
- COT 5310 Formal Languages and Automata (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- COT 6410 Computational Complexity (3 credits)
- COT 6600 Quantum Computing (3 credit hours)
- COT 6602 Introduction to Quantum Information Theory (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Software Systems and Algorithms (SSA) area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Software Systems and Algorithms committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the CpE Graduate Coordinator no later than 9 hours of

graduate coursework has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the CpE Graduate Coordinator.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in computer engineering or a closely related discipline, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in computer engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Accelerated BS to MSCpE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

Accelerated BS to MSCpE	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Electrical Engineering  
 Engineering 407B

# Computer Science MS

## PROGRAM DESCRIPTION

The Master of Science in Computer Science program provides students with an in-depth education geared toward meeting the needs of business and industry in Florida and throughout the United States. The program's goal is to produce graduates with a high level of competency in understanding, applying, and enunciating the modern concepts, principles, methods, and theories necessary for the design and implementation of computing systems.

Students in the program receive a broad background in the areas of programming systems and languages, computer architecture, and computer science theory while specializing in a research area. Research interests of the computer science faculty include affective computing, applied perception, bioinformatics, computational biology, computational geometry, computer and network security, computer architecture, computer forensics, computer graphics, computer networks, computer vision, cryptography, data compression, database management systems, data mining, design and analysis of algorithms, evolutionary computation, genetic algorithms, graph theory, hardware/software co-design, image processing, machine learning, mixed and virtual reality, mobile computing, modeling and simulation, multimedia systems, natural language processing, neural networks, parallel and distributed processing, performance

evaluation, programming languages, quantum computing, semantic web, software agents, software engineering, and VLSI systems. The program has a long and respected history, having conferred MS degrees since 1968.

Students successfully completing this program will have exhibited breadth as well as depth of capability involving both theoretical aspects of computer science and practical considerations of computing.

## CURRICULUM

The Computer Science MS program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers a thesis and nonthesis option. Both options must take 12 credit hours of required core courses. Nonthesis students have to take 18 credit hours of restricted electives and complete a culminating experience as determined by the program's graduate committee. Thesis students must take 12 credit hours of restricted electives and a minimum of 6 credit hours of thesis. Students must receive a 3.0 GPA or higher in all courses.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

#### Required Courses—12 Credit Hours

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- Any approved pair of CS courses from a single research area that includes at least one 6000-level course. (6 credit hours)

Examples include a pair from OS area (COP5611 and COP6614 or COP6615); computer graphics area (CAP5725 and CAP6701); machine learning area (CAP5610 or CAP5512 and CAP6616 or CAP6545); AI area (CAP5636 and CAP6640 or CAP6676); computer Vision area (CAP5415 and CAP6411 or CAP6412 or CAP6835); parallel architecture area (CDA5510 and CDA6107); network area (CDA5501 and CDA6520); software engineering area (CEN5016 and CEN6081); database area (COP5711 and COP6731); etc.

#### Restricted Electives—12-18 Credit Hours

Restricted electives must include twelve (or nine if

the student completes two courses at the 6000-level as part of the required single area pair) credits at the 6000-level for thesis students and 18 hours (or 15 if the student completes two courses at the 6000-level as part of the required single area pair) for non-thesis students. Between required and restricted courses, the student's program must include at least two 6000-level Computer Science courses (6 credits) taught by EECS faculty, exclusive of independent study. Additional credits will normally be taken from 5000- and 6000-level Computer Science courses. Approval may be granted for 6 credit hours at the most to be taken from graduate courses outside Computer Science. Such approval needs to occur prior to taking these outside courses.

#### Thesis—6 Credit Hours Minimum

- XXX 6971 (6 credit hours)

The thesis option requires six credits of thesis (CAP, CDA, CEN, COP or COT 6971) and allows up to 3 credit hours of independent study with the professor who directs or co-directs the student's 6 credits of thesis. The thesis experience is expected to span two semesters. Thesis students who are full-time must continue to enroll in 3 credit hours of thesis course work until the thesis requirement is satisfied, even if it goes beyond the minimum of 6 credit hours of thesis. Students are required to prepare and defend a formal thesis in accordance with university requirements.

#### Nonthesis Option

The nonthesis option requires a student to take 18 total hours of restricted electives (or 15 if the student completes two courses at the 6000-level as part of the required single area pair) and engage in a culminating experience as determined by the program's graduate committee. Students in the nonthesis option may not take more than 6 credit hours of independent study.

#### Entertainment Engineering Thread in the MS Program

The Computer Science MS program provides an Entertainment Engineering thread in cooperation with the Florida Interactive Entertainment Academy (FIEA) for students interested in specializing in computer games related areas. Students in this specialization have the same two required courses (CDA 5106 Advanced Computer Architecture I, and COT 5405 Design and Analysis of Algorithms),

but must choose the required course pair from a restricted set. The choices are:

- CAP5419 and CAP6835 (Computer Vision sequence) or
- CAP5610 and CAP6616 (Machine Learning sequence) or
- CAP5725 and CAP6701 (Computer Graphics sequence)

Additionally, students must undertake 6 credits of project work with FIEA taken in spring/summer. These 6 credit hours will replace the independent study hours for a nonthesis option student. All other requirements of Computer Science MS program remain equally applicable.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires that you fill out a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before you complete the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

An undergraduate degree in Computer Science is desirable but not required. Applicants without a strong undergraduate background in Computer Science must demonstrate an understanding of the material covered in the following upper-division undergraduate courses:

- CDA 4150 Computer Architecture

- COP 4020 Programming Languages I
- COP 4600 Operating Systems
- COT 4210 Discrete Computational Structures

Applicants may choose to demonstrate their knowledge of these courses by scoring well on the Subject (Advanced) GRE in Computer Science. It is estimated that more than 85 percent of the Computer Science Subject Test directly deals with the material covered in these courses.

Computer Science MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Department of Computer Science

HEC 204

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## Counselor Education MA

- Mental Health Counseling MA
- School Counseling MA

## PROGRAM DESCRIPTION

**The Master of Arts in Counselor Education-School Counseling track is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a Counselor Education MA with programs in School Counseling and Mental Health Counseling. The School Counseling MA is designed for the student who has a bachelor's degree in a discipline other than education who plans to seek certification as a professional school counselor in pre-K through postsecondary school settings. The Mental Health Counseling MA program prepares students for licensure in mental health counseling and practice in community agencies, hospitals, colleges, universities, and private practice.

As part of the program's real-world approach to counselor education (in addition to classroom studies) all students complete clinical experiences in the UCF Community Counseling Clinic and on-site in the community.

Please note that Marriage and Family Therapy is a separate degree but still part of the Counselor Education program.

## CURRICULUM

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Counselor Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

### CONTACT INFO

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 Department of Child, Family and Community

Sciences  
 ED 322-N

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### Counselor Education MA

# Mental Health Counseling MA

## TRACK DESCRIPTION

The Mental Health Counseling MA program prepares students for licensure in mental health counseling and practice in community agencies, hospitals, colleges, universities, and private practice.

## CURRICULUM

### Total Hours Required for MA—63 Credit Hours Minimum beyond the Bachelor's Degree.

The Mental Health Counseling MA program prepares students for Florida licensure in mental health counseling. The program requires a minimum of 63 credit hours beyond the bachelor's degree, including 12 credit hours of core courses, 39 credit hours of specialization, and 12 credit hours of professional clinical experiences.

### Core Courses—12 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EGC 6971 Thesis or 2 approved electives (6 credit hours)

### Specialization Courses—39 Credit Hours

- MHS 5005 Introduction to the Counseling Profession (3 credit hours)
- MHS 6020 Mental Health Care Systems (3 credit hours)
- MHS 6070 Diagnosis and Treatment in Counseling (3 credit hours)
- MHS 6220 Individual Psychoeducational Testing I (3 credit hours)
- MHS 6400 Theories of Counseling and Personality (3 credit hours)

- MHS 6401 Techniques of Counseling (3 credit hours)
- MHS 6420 Counseling Special Populations (3 credit hours)
- MHS 6450 Counseling Substance Use and Abuse (3 credit hours)
- MHS 6470 Human Sexuality and Relationships (3 credit hours)
- MHS 6500 Group Procedures and Theories in Counseling (3 credit hours)
- MHS 6702 Ethical and Legal Issues (3 credit hours)
- SDS 6347 Career Development (3 credit hours)
- Elective approved by adviser (3 credit hours)

### **Professional Clinical Experiences—12 Credit Hours**

Practica and internships are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

- MHS 6803 Practicum in Counselor Education (6 credit hours)
- MHS 6830 Counseling Internship (3 credit hours)
- MHS 6830 Counseling Internship (3 credit hours)

**Note:** Courses should be taken in the following sequence: MHS 5005, 6400, 6401, 6500, 6803, and 6830.

### **Additional Program Requirements**

- Achieve at least a GPA of 3.0 in counseling specialization courses.
- Achieve a “B” or better in MHS 6803 and MHS 6830.
- Complete clinical experiences in the UCF Community Counseling Clinic and on-site in the community (a total of 1,100 clock hours are required for mental health counseling or 700 hours for school counseling).
- Complete a portfolio and receive approval by Counselor Education faculty.
- Complete a professional exit examination.

Practica and internships are independent learning activities that take place in authentic settings in

which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, a résumé, and a statement of goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

This program can accommodate only a limited number of students; therefore, there is a possibility of being denied admission even when all criteria are met.

The College of Education reserves the right to refuse student entrance or terminate a student after admission to the Counselor Education Program, if in the judgment of the faculty the student demonstrates unacceptable personal fitness to work in the counseling field with children, youth, and/or adults.

A formal interview is required and will be scheduled after the College of Education admission requirements are met. Interviews are conducted on the second Friday in March and the second Friday in October. Attendance at the program orientation session at 4:30 p.m. on the Thursday before classes begin, in the semester to which the student applied, is mandatory.



Mental Health Counseling MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

**CONTACT INFO**

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 Child, Family and Community Sciences  
 ED 322-T

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*Counselor Education MA*

**School Counseling MA**

**TRACK DESCRIPTION**

The Master of Arts in School Counseling is designed for the student planning to seek certification as a professional school counselor in pre-K through postsecondary school settings.

**CURRICULUM**

**Total Hours Required for MA—60 Credit Hours Minimum beyond the Bachelor’s Degree.**

The School Counseling MA program requires a minimum of 60 credit hours beyond the bachelor’s degree, including 12 credit hours of core courses, 30 credit hours of specialization, nine credit hours of professional clinical experiences, and nine credit hours of required DOE certification.

**Core Courses—6 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

**Specialization—30 Credit Hours**

- MHS 5005 Introduction to the Counseling Profession (3 credit hours)
- MHS 6220 Individual Psychoeducational Testing I (3 credit hours)
- MHS 6400 Theories of Counseling and Personality (3 credit hours)
- MHS 6401 Techniques of Counseling (3 credit hours)
- MHS 6420 Counseling Special Populations (3 credit hours)
- MHS 6500 Group Procedures and Theories in Counseling (3 credit hours)
- SPS 6815 Legal and Ethical Issues in Professional School Counseling (3 credit hours)
- SDS 6347 Career Development (3 credit hours)
- SDS 6411 Counseling with Children and Adolescents (3 credit hours)
- SDS 6620 Coordination of Comprehensive Professional School Counseling Programs (3 credit hours)

**Thesis or Non-thesis Option - 6 Credit Hours**

EGC 6971 Thesis or 2 approved electives (6 credit hours)

**Professional Clinical Experience—9 Credit Hours**

Practica and internships are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

- MHS 6803 Practicum in Counselor Education (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)

### Required DOE Certification—9 Credit Hours

- TSL 5528 Teaching Language to Minority Students in K-12 Classrooms (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)

### Additional Program Requirements

- Achieve at least a GPA of 3.0 in counseling specialization courses.
- Achieve a “B” or better in MHS 6803 and SDS 6947.
- Complete clinical experiences in the UCF Community Counseling Clinic and on-site in the community (a total of 1,100 clock hours are required for mental health counseling or 700 hours for school counseling).
- Complete a portfolio and receive approval by Counselor Education faculty.
- Complete a professional exit examination.

Practica and internships are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, a résumé, and a statement of goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

In accordance with the Florida Statute 1004.4 and State Board of Education Rule 6A-5.066, applicants to graduate-level state-approved initial teacher

program whose composite quantitative-verbal GRE score is less than 1000 must pass all four parts of the College Level Academic Skills Test or General Knowledge Test of the Florida Teacher Certification Examination for program admission. This provision applies to all applicants to the MA program, School Counseling track.

This program can accommodate only a limited number of students; therefore, there is a possibility of being denied admission even when all criteria are met.

The College of Education reserves the right to refuse student entrance or terminate a student after admission to the Counselor Education Program, if in the judgment of the faculty the student demonstrates unacceptable personal fitness to work in the counseling field with children, youth, and/or adults.

A formal interview is required and will be scheduled after the College of Education admission requirements are met. Interviews are conducted on the second Friday in March and the second Friday in October. Attendance at the program orientation session at 4:30 p.m. on the Thursday before classes begin, in the semester to which the student applied, is mandatory.

School Counseling MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Child, Family and Community Sciences  
 ED 322G

# Counselor Education MEd

- School Counseling MEd

## PROGRAM DESCRIPTION

The Counselor Education Master of Education (MEd) program was created for students who have a bachelor's degree in education and have completed course work for teaching certification and plan to seek certification in school counseling.

As part of the program's real-world approach to counselor education (in addition to classroom studies) all students complete clinical experiences in the UCF Community Counseling Clinic and on-site in the community.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Counselor Education MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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Department of Child, Family and Community Sciences  
ED 322

## Counselor Education MEd

# School Counseling MEd

## TRACK DESCRIPTION

The Master of Education in School Counseling program prepares students to work as professional counselors in pre-K through postsecondary school settings.

## CURRICULUM

### Total Hours Required for MEd—51 Credit Hours Minimum beyond the Bachelor's Degree.

The School Counseling MEd program requires a minimum of 51 credit hours beyond the bachelor's degree, including 12 credit hours of core courses, 30 credit hours of specialization, and 9 credit hours of professional clinical or practicum experience.

### Prerequisite

Students must have or be eligible for the Florida Professional Teaching Certificate in Counselor Education.

### Core Courses—12 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EGC 6971 Thesis or 2 electives (6 credit hours)

### Specialization Courses—30 Credit Hours

- MHS 5005 Introduction to the Counseling Profession (3 credit hours)
- MHS 6220 Individual Psychoeducational Testing I (3 credit hours)
- MHS 6400 Theories of Counseling and Personality (3 credit hours)
- MHS 6401 Techniques of Counseling (3 credit hours)
- MHS 6420 Counseling Special Populations (3 credit hours)
- MHS 6500 Group Procedures and Theories in Counseling (3 credit hours)

- SPS 6815 Legal and Ethical Issues in Professional School Counseling (3 credit hours)
- SDS 6347 Career Development (3 credit hours)
- SDS 6411 Counseling with Children and Adolescents (3 credit hours)
- SDS 6620 Coordination of Comprehensive Professional School Counseling Programs (3 credit hours)

### Professional Clinical Experience—9 Credit Hours

Practica and internship are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

- MHS 6803 Practicum in Counselor Education (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)

**Note:** Courses should be taken in the following sequence: MHS 5005, 6400, 6401, 6500, 6803, and 6830.

### Graduate Requirements

- Achieve at least a GPA of 3.0 in counseling specialization courses.
- Achieve a “B” or better in MHS 6803 and SDS 6947.
- Complete clinical experiences in the UCF Community Counseling Clinic and on-site in the community (a total of 1,100 clock hours are required for mental health counseling or 700 hours for school counseling).
- Complete a portfolio and receive approval by Counselor Education faculty.
- Complete a professional exit examination.

## ADMISSIONS

In addition to general admission requirements, applicants to this program must provide an official, competitive GRE score taken within the last five years, a current Florida Professional Teaching Certificate in Counselor Education or have completed all the requirements for that Professional Teaching Certificate, three letters of

recommendation, a résumé, and a statement of goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Current Florida Professional Teaching Certificate in Counselor Education or have completed all the requirements for that Professional Teaching Certificate.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

This program can accommodate only a limited number of students; therefore, there is a possibility of being denied admission even when all criteria are met.

The College of Education reserves the right to refuse student entrance or terminate a student after admission to the Counselor Education program, if in the judgment of the faculty the student demonstrates unacceptable personal fitness to work in the counseling field with children, youth, and/or adults.

A formal interview is required and will be scheduled after the College of Education admission requirements are met. Interviews are conducted on the second Friday in March and the second Friday in October. Attendance at the program orientation session at 4:30 p.m. on the Thursday before classes begin, in the semester to which the student applied, is mandatory.

School Counseling MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	

School Counseling MEd	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 ED 322G

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## Criminal Justice MS

- Professional MS
- Research MS

## PROGRAM DESCRIPTION

The Master of Science in Criminal Justice offers two plans of study. The first option, a professional track, is designed to meet the needs of students preparing for careers in the field of criminal justice. The curriculum focuses on the traditional issues such as management, administrative and criminal justice theory, as well as basic research methods and descriptive statistics. Other core and elective courses focus on the complex and changing world in which criminal justice systems operate in this country and abroad. This plan of study is designed to equip future criminal justice leaders to be critical consumers of criminal justice research.

The second option, a research track, is designed for students who plan careers as research analysts or who plan to enroll in a PhD program when they complete the master's program. This program of study also focuses on traditional criminal justice issues but places greater emphasis on advanced research design and quantitative methods. This program of study is designed to prepare future analysts and criminal justice scholars who will produce criminal justice research.

The benefits of an advanced graduate degree in criminal justice are self evident and are being increasingly recognized by employers in central

Florida and throughout the United States. Federal, state, and local criminal justice agencies benefit from an informed and innovative workforce that is aware of the complex issues and problems faced by the system regardless of geographic locale. Furthermore, graduates of the program are grounded in the latest theories and learn how these theories affect each individual or organization within the system.

## CURRICULUM

The Criminal Justice MS program offers two tracks: Professional MS and Research MS. The Professional MS requires 36 credit hours, including 21 credit hours of core courses, 6 credit hours of restricted electives, 9 credit hours of general electives, and a final written examination within the Proseminar or capstone course. The Research MS requires 30 credit hours, including 18 credit hours of core courses, 3 credit hours of restricted electives, 9 credit hours of general electives, and completion of a research study within the Advanced Research Methods course.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects such as advanced research projects, scholarly papers, internships, practicum, and presentations at professional conferences also contribute to the self development of our students. Both curricula focus on reviewing and analyzing contemporary research within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Criminal Justice MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

<b>Criminal Justice MS</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Health and Public Affairs Graduate Office  
 HPA 365

### *Criminal Justice MS*

## Professional MS

### TRACK DESCRIPTION

The Master of Science in Professional Criminal Justice program emphasizes criminal justice research, theory, policy and organizational administration. The program is designed to prepare future criminal justice organizational leaders to be consumers of research and to equip them to summarize and present organizational information.

### CURRICULUM

The Criminal Justice Professional MS program requires a minimum of 36 credit hours beyond the bachelor's degree, including 21 credit hours of core courses, 6 credit hours from restricted electives and 9 credit hours of general electives that is selected in consultation with an adviser.

### Total Required Hours for MS—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—21 Credit Hours Minimum

- CCJ 5015 The Nature of Crime (3 credit hours)
- CCJ 5456 The Administration of Justice (3 credit hours)
- CCJ 5704 Research Methods in Criminal Justice (3 credit hours)

- CCJ 6106 Policy Analysis in Criminal Justice (3 credit hours)
- CCJ 6118 Criminal Justice Organizations (3 credit hours)
- PLA 6486 Administrative Law for Criminal Justice Professionals (3 credit hours)
- CCJ 6XXX Proseminar in Criminal Justice\* (3 credit hours)

\*The Proseminar in Criminal Justice serves as the capstone experience for the program and the independent learning experience.

#### Restricted Electives—6 Credit Hours

Select two from the following.

- CCJ 5105 Foundations of Law Enforcement (3 credit hours)
- CCJ 5020 Foundations of Corrections (3 credit hours)
- CJJ 6020 The Juvenile Justice System (3 credit hours)
- CCJ 6217 Law and Social Control (3 credit hours)
- CCJ 6205 American Criminal Courts (3 credit hours)

#### General Elective—9 Credit Hours

Graduate course work chosen after consultation with the program coordinator.

#### Comprehensive Examination

A final written examination is required of all students completing the Professional Track. This exam is taken within the capstone course CCJ 6XXX Proseminar in Criminal Justice.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects such as advanced research projects, scholarly papers, internships, practicum, and presentations at professional conferences also contribute to the self development of our students. Both curricula focus on reviewing and analyzing contemporary research within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects such as research projects, scholarly papers, internships, practicum,

and presentations at professional conferences also contribute to the self development of our students. The final culminating experience for those enrolled in the professional track results in student taking and satisfactorily completing the Proseminar in Criminal Justice course (CCJ 6XXX), which serves as the capstone course for the degree program.

## ADMISSIONS

In addition to the general admission requirements, applicants must provide a statement of career goals and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Statement of career goals, indicating how the Criminal Justice MS degree will enhance the applicant’s career goals.
- Résumé (no longer than two pages).

Applicants not meeting the minimum standards may be considered as candidates for provisional admittance. However, only students with complete applications (final transcript, résumé and statement of career goals) will be reviewed under this special admission category.

Students should be aware that admission to any graduate program is granted on a competitive basis. There may be cases where students meeting minimum requirements are denied admission based on such factors as program capacity or academic discretion.

Professional MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Health and Public Affairs Graduate Office  
 HPA 365

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**Criminal Justice MS**

# Research MS

## TRACK DESCRIPTION

The Master of Science in Criminal Justice Research program is designed for students who plan careers as criminal justice research analysts or who plan to enroll in a PhD program when they complete the master’s program.

## CURRICULUM

The Criminal Justice MS program in Research requires a minimum of 30 credit hours beyond the bachelor’s degree, including 18 credit hours of core courses, 3 credit hours from restricted electives and 9 credit hours of advanced curriculum that is selected in consultation with an adviser.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor’s Degree.

#### Core Courses—18 Credit Hours Minimum

- CCJ 5015 The Nature of Crime (3 credit hours)
- CCJ 5456 The Administration of Justice (3 credit hours)
- CCJ 5704 Research Methods in Criminal Justice (3 credit hours)
- CCJ 6XXX Advanced Research Methods in Criminal Justice (3 credit hours)
- CCJ 6706 Quantitative Methods and Computer Utilization in Criminal Justice (3 credit hours)
- CCJ 6714 Advanced Quantitative Methods in Criminal Justice (3 credit hours)

#### Restricted Electives—3 Credit Hours

Select one from the following.

- CCJ 5020 Foundations of Corrections (3 credit hours)
- CCJ 5105 Foundations of Law Enforcement (3 credit hours)
- CJJ 6020 Juvenile Justice (3 credit hours)

- CCJ 6217 Law and Social Control (3 credit hours)
- CCJ 6205 American Criminal Courts (3 credit hours)

### General Electives—9 Credit Hours

Graduate course work chosen after consultation with the program director.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects such as advanced research projects, scholarly papers, internships, practicum, and presentations at professional conferences also contribute to the self development of our students. Both curricula focus on reviewing and analyzing contemporary research within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects such as research projects, scholarly papers, internships, practicum, and presentations at professional conferences also contribute to the self development of our students. The final culminating experience for those enrolled in the research track entails successfully completing of the Advanced Research Methods Course (CCJ 6XXX), where students will successfully prepare a defensible research proposal suitable for funding at a state or federal agency.

## ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a statement of career goals, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Statement of career goals, indicating how the Criminal Justice MS degree will enhance the applicant's career goals.
- Résumé (no longer than two pages).

Applicants not meeting the minimum standards

may be considered as candidates for provisional admittance. However, only students with complete applications (final transcript, GRE and personal statement) will be reviewed under this special admission category.

Students should be aware that admission to any graduate program is granted on a competitive basis. There may be cases where students meeting minimum requirements are denied admission based on such factors as program capacity or academic discretion.

Research MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Health and Public Affairs Graduate Office  
 HPA 365

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# Curriculum and Instruction MA

## PROGRAM DESCRIPTION

The Master of Arts in Curriculum and Instruction program is designed for prospective teachers who want to obtain a degree that is flexible enough to meet their individual needs and helps them ensure quality instructional and curricular practices in schools and other educational settings.

The program enables educators to become more effective classroom teachers or to assume leadership roles to improve curriculum and instruction in their school or school district. In addition, the program meets the needs of educators in the military,



industry, and business who want to design more effective instruction.

The MA program is designed for individuals seeking teacher certification in Florida or is studying education for the first time. Students can choose an area of specialization or tailor a program to their professional development needs in consultation with their academic adviser.

## CURRICULUM

The Teaching Leadership and Curriculum MA program requires 39-45 credit hours beyond the bachelor's degree, including 12-15 credit hours of core courses, 15 credit hours of professional teaching certificate courses, and 9-12 credit hours of courses within an area of concentration. Students without teaching experience are required to complete a 6 credit hour internship. Students also have the option of writing a thesis.

### Total Hours Required for MA—39-45 Credit Hours Minimum Beyond the Bachelor's Degree.

An internship is required for those without teaching experience. The internship is an independent learning activity that takes place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member). In addition, research studies are housed in one or more courses in the curriculum.

### Required Core Courses—12-15 Credit Hours

- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EME 6602 Integration of Technology into the Curriculum (3 credit hours)

### Choose one of the following:

- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)

- EDF 6446 Assessment of Learning (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDG 6047 Contemporary Issues in Education (3 credit hours)

### Professional Teaching Certificate Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal and Safety Issues Related to Education (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- Special Methods: Course selection depends on the student's intended certification area
- Art Education: ARE 5359 Teaching Art K-12 (4 credit hours)
- English Language Arts: LAE 5346 Methods of Teaching English Language Arts (3 credit hours)
- Math Education (Grades 5-9): MAE 5327 Teaching Middle School Mathematics (3 credit hours)
- Math Education (Grades 6-12): MAE 5336 Current Methods in Secondary School Mathematics (3 credit hours)
- Music Education: MUE 5348C K-12 Music Methods (4 credit hours)
- Science Education (Grades 5-9): SCE 5325 Teaching Middle School Science (3 credit hours)
- Science Education (Grades 6-12): SCE 5632 Issues and Methods in Secondary School Science Education (3 credit hours)
- Social Science Education: SSE 5790 Inquiry and Instructional Analysis in Social Science Education (3 credit hours)
- Business Education: BTE 6935 Seminar in Business Education (3 credit hours)
- Other courses approved in the ITPP certificate, with approval of advisor and program coordinator (3 credit hours)

### Concentration—9-12 Credit Hours

Option I: Approved electives in subject area to meet certification (9-12 credit hours)

Option II: Select one of the specialization areas offered in the MEd in Teacher Leadership program (9-12 credit hours)

### Internship— 6 Credit Hours

Required for students without teaching experience.

- EDG 6940 Graduate Internship (6 credit hours)

An internship is required for those without teaching experience. The internship is an independent learning activity that takes place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member). In addition, research studies are housed in one or more courses in the curriculum.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Statement of goals.

Students may not switch from an MA program to a MEd program, or vice versa, without going through the university's admission process.

Curriculum and Instruction MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### CONTACT INFO

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 Educational Studies  
 Education 220H

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## Digital Forensics MS

- Professional MS
- Science/Computing MS

### PROGRAM DESCRIPTION

The Master of Science in Digital Forensics (MSDF) degree is composed of two programs: Professional and Science/Computing. These programs use common core courses and tailored electives to achieve common educational goals with different focus areas.

The Digital Forensics master's degree is a collaborative effort between various UCF academic departments (Electrical Engineering and Computer Science, Engineering Technology, Forensic Science of Chemistry, Criminal Justice and Legal Studies) and the National Center for Forensic Science (NCFS). NCFS is both a national center, as part of the National Institute of Justice Forensic Research Network of the Department of Justice, and a state Type II Center. NCFS is based in the UCF College of Sciences as a forensic science research center and is housed in Orlando's Research Park, adjacent to UCF.

The mission of the MSDF degree program is to provide a quality graduate education in science and practices of digital forensics, to prepare the students for digital forensics jobs, and to prepare the students for a lifetime of learning. The objectives of the program include the following:

- To give MSDF graduates the knowledge and skills necessary to participate as an effective team member or team leader in digital evidence investigations
- To prepare MSDF graduates for professional careers in digital forensics examination, forensic tool development, tool verification and validation, security and forensics administration

- To prepare MSDF graduates with the knowledge and skills to pursue advanced studies and research in computer technology or computer crime-related disciplines
- To equip MSDF graduates with the communication skills, both oral and written, to become an effective problem solver as well as an effective communicator as an expert forensic examiner and expert witness

## CURRICULUM

The Digital Forensics MS degree is comprised of 30 hours of study beyond the bachelor's degree with intensive specialization in one of two tracks, Professional or Science/Computing. The Professional program is directed toward current professionals in the field, who will pursue the degree as part-time students, and those who would like to gain the knowledge and skills required to work as an examiner in the field. The Science/Computing program is directed toward those with an interest in scientific applications and research in the field.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Digital Forensics MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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Department of Chemistry  
HEC 207

## Digital Forensics MS

# Professional MS

## TRACK DESCRIPTION

The Professional program in Digital Forensics is directed toward current professionals in the field, who will pursue the degree as part-time students, and those who would like to gain the knowledge and skills required to work as an examiner in the field.

## CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The program requires the completion of 30 credit hours beyond the bachelor's degree, of which half of the course credits must be at the 6000 level.

### Required Courses—18 Credit Hours

- CHS 5503 Topics in Forensic Science (3 credit hours)
- CGS 5131 Computer Forensics 1: Seizure and Examination of Computer Systems (3 credit hours)
- CGS 5132 Computer Forensics 2: Network Security, Intrusion Detection & Forensic Analysis (3 credit hours)
- CHS 5518 The Forensic Collection and Examination of Digital Evidence (3 credit hours)
- CIS 6395 Incident Response Technologies (3 credit hours)
- CIS 6386 OS and File System Forensics (3 credit hours)

### Restricted Electives—6 Credit Hours

The student may propose any course that is related to digital forensics, the law, or criminal justice, or an additional three hours of internship. Electives must be approved by the graduate program committee.

### Internship/Practicum—3 Credit Hours

- CET 6946 Graduate Internship/Practicum (minimum 3 credit hours, maximum 6 credit hours)

### Capstone Experience—3 Credit Hours

- CET 6887 Practice of Digital Forensics (3 credit hours)
- The Digital Forensics MS degree is comprised of 30 hours of study beyond the bachelor’s degree with intensive specialization in one of two tracks, Professional or Science/Computing. The Professional program is directed toward current professionals in the field, who will pursue the degree as part-time students, and those who would like to gain the knowledge and skills required to work as an examiner in the field. The Science/Computing program is directed toward those with an interest in scientific applications and research in the field.
- Both the internship and capstone experience provide independent learning experiences for students.

### ADMISSIONS

In addition to general admission requirements, applicants must provide a résumé and a statement of educational, research, and professional career objectives. Due to the sensitivity of the subject matter being studied, all applicants must pass a criminal background check prior to formal admission to the Professional Track.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Due to the sensitivity of the subject matter being studied, all applicants must pass a criminal background check prior to formal admission to the Professional Track. The applicant will pay for this background check. Please contact Dr. Philip Craiger, the Professional Track Coordinator for the Digital Forensics MS Program, by e-mail at [pcaiger@mail.ucf.edu](mailto:pcaiger@mail.ucf.edu) or (407) 823-3527 for further information regarding completion of the criminal background check.

Professional MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants				
International Transfer Applicants				

### CONTACT INFO

Philip Craiger PhD  
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 Telephone 407-823-3527  
 National Center for Forensic Science  
 CPS 225

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### Digital Forensics MS

# Science/Computing MS

### TRACK DESCRIPTION

The Science/Computing program is directed toward those with an interest in scientific applications and research in the field.

### CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor’s Degree.

The program requires the completion of 30 credit hours beyond the bachelor’s degree, of which half of the course credits must be at the 6000 level.

### Required Courses—12 Credit Hours

- CGS 5131 Computer Forensics 1: Seizure and Examination of Computer Systems (3 credit hours)
- CGS 5132 Computer Forensics 2: Network Security, Intrusion Detection & Forensic Analysis (3 credit hours)

- CHS 5503 Topics in Forensic Science (3 credit hours)
- CET 6887 The Practice of Digital Forensics (3 credit hours)

## Restricted Electives—12 Credit Hours

### Computing Specialization

Select two courses.

- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)
- CNT 6519 Wireless Security and Forensics (3 credit hours)
- CAP 6135 Malware and Software Vulnerability Analysis (3 credit hours)
- COP 6525 Distributed Processing of Digital Evidence (3 credit hours)

### Criminal Justice and Legal Study Specialization

Select one course.

- CCJ 6074 Investigative and Intelligence Analysis: Theory & Methods (3 credit hours)
- CCJ 6706 Quantitative Methods and Computer Utilization in Criminal Justice or ESI 5219 Engineering Statistics or STA 5206 Statistical Analysis (3 credit hours)
- PLA 5587 Current Issues in Cyberlaw

### Forensic Science Specialization

Select one course.

- CHS 5596 Forensic Expert in the Courtroom (3 credit hours)
- CHS 5518 The Forensic Collection and Examination of Digital Evidence or CJE 5688 Cybercrime and Criminal Justice (3 credit hours)

### Thesis Option—6 Credit Hours

- CAP 6971 Thesis

### Nonthesis Option—6 Credit Hours

- CAP 6946 Graduate Internship (3 credit hours)
- Choose one course from the groups listed in the restricted electives section for 3 credit hours.
- The Digital Forensics MS degree is comprised of 30 hours of study beyond the bachelor's degree with intensive specialization in one of two tracks, Professional or Science/Computing. The Professional program is directed toward current professionals in the field, who will

pursue the degree as part-time students, and those who would like to gain the knowledge and skills required to work as an examiner in the field. The Science/Computing program is directed toward those with an interest in scientific applications and research in the field.

- For non-thesis students the required internship provides the independent learning experience.

## ADMISSIONS

In addition to general admission requirements, applicants must provide a résumé and a statement of educational, research, and professional career objectives.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Statement of educational, research, and professional career objectives.
- Résumé.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research programs.

Science/ Computing MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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Department of Chemistry  
HEC 207

# Early Childhood Development and Education MA

## PROGRAM DESCRIPTION

The Master of Arts program in Early Childhood Development and Education is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic. The program is designed for candidates with undergraduate degrees in a wide range of areas either related to early childhood education, such as child development, psychology, communication disorders, sociology, nursing, theatre, music or other degrees. The program of study includes advanced professional development in early care and education for careers with direct and indirect services for young children and families. Direct early education services to young children and families can include homes, schools, and other community settings, such as child care and Head Start. Indirect services can include: child assessment, program evaluation, child care resource and referral, early learning coalitions, and community college instruction. Graduates of this program are encouraged to serve as a bridge among schools and community agencies and to nurture leadership skills in these areas. Please note that this program does not lead to initial teacher preparation.

In addition to fostering the professional development of previously certified early childhood teachers, this program will also serve as a bridge among schools and community agencies and will provide the educational experiences to nurture educational leaders who will work within and across these areas.

## CURRICULUM

The Early Childhood Development and Education MA program requires a minimum of 36 credit hours beyond the bachelor's degree, including 6 credit hours of core courses, 18 credit hours of required courses, 6 credit hours of electives, and 6 credit hours of a capstone experience.

**Total Required Hours for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.**

Students should initially and periodically meet with an academic adviser to plan their program of electives in relation to their desired career goals, develop a program of study and timeline for their course work completion, and to plan for the capstone culminating experience.

The MA does not lead to initial teacher preparation through the state approved program route. Students interested in certification may contact the Florida Bureau of Teacher Certification Florida Department of Education, directly at [www.fldoe.org/edcert/](http://www.fldoe.org/edcert/).

### Required Core Courses—6 Credit Hours

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

### Required Courses—18 Credit Hours

- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)
- EEC 6216 Communicative Arts in Early Childhood Education (3 credit hours)
- EEC 6269 Play Development, Intervention, and Assessment (3 credit hours)
- EEC 6405 Home-School-Community Interaction in Early Childhood Education (3 credit hours)
- EEC 6938 ST: Global Issues in Early Childhood (3 credit hours)
- EEX 6222 Observation and Assessment of Young Children (3 credit hours)

### Electives—6 Credit Hours

- EEX 6017 Typical and Atypical Child Development (3 credit hours) (Required if no undergraduate course in child development)
- EEC 6406 Guiding and Facilitating Social Competence (3 credit hours)
- EDP 6056 Advanced Educational Psychology (3 credit hours)
- EEX 5702 Planning Curriculum for Pre-Kindergarten Children with Disabilities (3 credit hours)
- EEX 5750 Communication with Parents and Agencies (3 credit hours)
- MHS 6403 Techniques of Play Therapy and Expressive Arts (3 credit hours)
- MHS 6421 Foundations of Play Therapy and Play Process (3 credit hours)
- SPS 6125 Infant Development Assessment (3 credit hours)

- Other courses of interest with consent of faculty

### Capstone Experience—6 Credit Hours

- EEC 6909 Research Report (6 credit hours)
- EEC 6908 Thesis (6 credit hours)
- A research project or thesis is required as the culminating experience for the program.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Résumé.
- Essay detailing career goals OR a graded undergraduate/post graduate essay assignment (within 2 years).
- An interview with and favorable recommendation by Early Childhood Graduate faculty is required for admission.

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates' overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master's admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies) with pre-kindergarten or primary age children and their families.

Early Childhood Development and Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 ED 122M

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## Early Childhood Education MEd

- Early Literacy MEd
- Teacher Leadership MEd
- Family, School and Community MEd
- Pre-Kindergarten Handicapped Endorsement MEd

## PROGRAM DESCRIPTION

The Master of Education in Early Childhood Education program is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic experiences.

Students who already hold Early Childhood (Pre-K Primary or Elementary K-6 Professional) Certification may enroll in the Master of Education (MEd) program, which includes a full range of courses and the choice of four specialization tracks.

In addition to fostering the professional development of previously certified early childhood teachers, this program will also serve as a bridge among schools and community agencies and will provide the educational experiences to nurture

educational leaders who will work within and across these areas.

## CURRICULUM

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Early Childhood Education MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### CONTACT INFO

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Early Childhood Education MEd

## Early Literacy MEd

### TRACK DESCRIPTION

The Master of Education in Early Literacy program is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic experiences.

## CURRICULUM

### Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor’s Degree

The Early Literacy MEd program requires a minimum of 36 credit hours beyond the bachelor’s degree, including nine credit hours of core courses, 12 credit hours of specialization, 12 credit hours of electives, and three credit hours of a master’s seminar or thesis to provide an independent learning experience, which is part of the capstone course for the program.

Core courses and track courses may be taken in any sequence preceding the capstone experience. The capstone experience serves as the culminating experience in the program of study and substitutes for the comprehensive examination.

The MEd program requires practicum experiences which may be completed in student’s own early childhood settings. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

Candidates should meet initially and periodically with an academic advisor to:

- Plan their program of electives related to their desired career goals.
- Develop a program of study and timeline for coursework completion.
- Plan for the capstone culminating experience, which also includes their comprehensive project in lieu of a comprehensive examination.
- Discuss, if earned, a grade of “C” or lower in their graduate study.

Candidates who are not performing at an acceptable academic level at any point in their graduate study (e.g., earn more than two grades of “C” or fall below the 3.0 GPA required for graduation) must meet with a graduate faculty advisor to develop and sign a Conditional Retention Plan to support remediation.

### Core Courses—9 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)



- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)

**Specialization Courses—12 Credit Hours**

- EEC 6216 Communicative Arts in Early Childhood Education (3 credit hours)
- EEC 5206 Organization of Instruction (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- RED 6116 Trends in Reading Education (3 credit hours)

**Electives—9 Credit Hours**

- Electives must be selected in consultation with an adviser.

**Capstone Experience—6 Credit Hours**

- EEC 6909 Master’s Seminar (Action Research) (6 credit hours) OR
- EEC 6908 Thesis (6 credit hours)

The MEd program’s capstone experience requires a field experience in the master’s seminar which may be completed in student’s own early childhood settings. Field experiences are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

**ADMISSIONS**

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, résumé, an essay about career goals or a graded essay, and a current Florida Professional Teaching Certificate in Early Childhood Education or have completed all the requirements for that Professional Teaching Certificate.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation
- Résumé .

- Essay of applicant’s career goals OR a graded undergraduate/post graduate essay assignment (within 2 years).
- A current Florida Professional Teaching Certificate in Early Childhood Education or have completed all requirements for that Professional Teaching Certificate.
- An interview with and favorable recommendation by Early Childhood Graduate Faculty is required for admission.

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates’ overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Applicants to the MEd program must hold a current Early Childhood (Pre-K-Primary) or Elementary (K-6) Professional Florida Teaching Certificate or have completed all requirements for that Professional Teaching Certificate. Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students will be admitted to the program three times a year (in the fall, spring, and summer) and must apply for graduate admission by the application deadline established for this program.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master’s admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies) with pre-kindergarten or primary age children and their families.

Early Literacy MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

Early Literacy MEd	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Child, Family and Community  
 Sciences  
 ED 122M

Early Childhood Education MEd

# Teacher Leadership MEd

## TRACK DESCRIPTION

The Master of Education in Teacher Leadership program is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic experiences.

## CURRICULUM

### Total Required Hours for Teacher Leadership MEd—36 Credit Hours Minimum beyond the Bachelor's Degree

The Teacher Leadership MEd program requires a minimum of 36 credit hours beyond the bachelor's degree, including nine credit hours of core courses, 12 credit hours of specialization, 12 credit hours of electives, and three credit hours of field experience which provides an independent learning experience in the master's seminar or a thesis as part of the capstone requirement for the program.

Core courses and track courses may be taken in any sequence preceding the capstone experience. The capstone experience serves as the culminating experience in the program of study. The MEd program requires a field experience. Field

experiences are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

Candidates should meet initially and periodically with an academic adviser to:

- Plan their program of electives related to their desired career goals.
- Develop a program of study and timeline for coursework completion.
- Plan for the capstone culminating experience, which also includes their comprehensive project in lieu of a comprehensive examination.
- Discuss, if earned, a grade of "C" or lower in their graduate study.

Candidates who are not performing at an acceptable academic level at any point in their graduate study (e.g., earn more than two grades of "C" or fall below the 3.0 GPA required for graduation) must meet with a graduate faculty advisor to develop and sign a Conditional Retention Plan to support remediation.

### Core Courses—9 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)

### Specialization Courses—12 Credit Hours

Select any four of the following courses.

- EDG 6XXX Seminar in Teacher Leadership (3 credit hours)
- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- EDF 6XXX Teacher Leadership for Educational Equity and Social Justice (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)

### Electives—9 Credit Hours

Electives must be selected in consultation with an adviser.

### Capstone Experience—6 Credit Hours

- EEC 6909 Master's Seminar (Action Research) (6 credit hours) OR
- EEC 6908 Thesis (6 credit hours)

The MEd program's capstone experience requires a field experience in the master's seminar which may be completed in student's own early childhood settings. Field experiences are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

## ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, résumé, an essay about career goals or a graded essay, and a current Florida Professional Teaching Certificate in Early Childhood Education or have completed all the requirements for that Professional Teaching Certificate.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- Résumé.
- Essay of applicant's career goals OR a graded undergraduate/post graduate essay assignment (within 2 years).
- A current Florida Professional Teaching Certificate in Early Childhood Education or have completed all requirements for that Professional Teaching Certificate.
- An interview with and favorable recommendation by Early Childhood Graduate Faculty is required for admission.

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates' overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Applicants to the MEd program must hold a current Early Childhood (Pre-K-Primary) or Elementary (K-6) Professional Florida Teaching Certificate or have completed all requirements for

that Professional Teaching Certificate. Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students will be admitted to the program three times a year (in the fall, spring, and summer) and must apply for graduate admission by the application deadline established for this program.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master's admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies) with pre-kindergarten or primary age children and their families.

Teacher Leadership MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 ED 122M

*Early Childhood Education MEd***Family, School and  
Community MEd****TRACK DESCRIPTION**

The Master of Education in Family, School and Community program is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic experiences.

**CURRICULUM****Total Required Hours for MEd—36  
Credit Hours Minimum beyond the  
Bachelor's Degree**

The Family, School, and Community MEd program requires a minimum of 36 credit hours beyond the bachelor's degree, including nine credit hours of core courses, 12 credit hours of specialization, 12 credit hours of electives, and three credit hours of practica, which is the capstone experience of the program.

Core courses and track courses may be taken in any sequence preceding the capstone experience. The capstone experience serves as the culminating experience in the program of study.

The MEd program requires a practicum. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

Candidates should meet initially and periodically with an academic advisor to:

- Plan their program of electives related to their desired career goals.
- Develop a program of study and timeline for coursework completion.
- Plan for the capstone culminating experience, which also includes their comprehensive project in lieu of a comprehensive examination.
- Discuss, if earned, a grade of "C" or lower in their graduate study.

Candidates who are not performing at an acceptable academic level at any point in their graduate study (e.g., earn more than two grades of "C" or fall

below the 3.0 GPA required for graduation) must meet with a graduate faculty advisor to develop and sign a Conditional Retention Plan to support remediation.

**Core Courses—9 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)

**Specialization Courses—12 Credit  
Hours**

- EEC 6405 Home-School-Community Interaction in Early Childhood Education (3 credit hours)
- EEC 6406 Guiding and Facilitating Social Competence (3 credit hours)
- EEC 6947 Practicum in Family Liaison Building (3 credit hours)
- EEX 5750 Communication with Parents and Agencies (3 credit hours) or EEC 6263 Studies in Curriculum Environments for Early Childhood Education (3 credit hours)

**Electives—9 Credit Hours**

Electives must be selected in consultation with an adviser.

**Capstone Experience—6 Credit Hours**

- EEC 6909 Master's Seminar (Action Research) (6 credit hours) OR
- EEC 6908 Thesis (6 credit hours)

The MEd program requires practicum experiences which may be completed in student's own early childhood settings. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

**ADMISSIONS**

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, résumé, essay about career goals or a graded essay, and a current Florida Professional Teaching Certificate in Early Childhood Education or have completed all the

requirements for that Professional Teaching Certificate.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- Résumé.
- Essay of applicant’s career goals OR a graded undergraduate/post graduate essay assignment (within 2 years).
- A current Florida Professional Teaching Certificate in Early Childhood Education or have completed all requirements for that Professional Teaching Certificate.
- An interview with and favorable recommendation by Early Childhood Graduate Faculty is required for admission.

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates’ overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Applicants to the MEd program must hold a current Early Childhood (Pre-K-Primary) or Elementary (K-6) Professional Florida Teaching Certificate or have completed all requirements for that Professional Teaching Certificate. Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students will be admitted to the program three times a year (in the fall, spring, and summer) and must apply for graduate admission by the application deadline established for this program.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master’s admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies)

with pre-kindergarten or primary age children and their families.

Family, School and Community MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### CONTACT INFO

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 Department of Child, Family and Community Sciences  
 ED 122M

Early Childhood Education MEd

# Pre-Kindergarten Handicapped Endorsement MEd

### TRACK DESCRIPTION

The Master of Education in Pre-Kindergarten Handicapped Endorsement program is designed to meet the needs of teachers through the delivery of relevant, rigorous course work and related academic experiences.

### CURRICULUM

#### Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor’s Degree

The Pre-Kindergarten Handicapped Endorsement MEd program requires a minimum of 36 credit hours beyond the bachelor’s degree, including nine credit hours of core courses, 12 credit hours

of specialization, 12 credit hours of electives, and three credit hours of field experience, which is the capstone experience of the program.

Core courses and track courses may be taken in any sequence preceding the capstone experience. The capstone experience serves as the culminating experience in the program of study.

The MEd program requires a field experience for those pursuing the non-thesis option. Field experiences are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

Candidates should meet initially and periodically with an academic advisor to:

- Plan their program of electives related to their desired career goals.
- Develop a program of study and timeline for coursework completion.
- Plan for the capstone culminating experience, which also includes their comprehensive project in lieu of a comprehensive examination.
- Discuss, if earned, a grade of “C” or lower in their graduate study.

Candidates who are not performing at an acceptable academic level at any point in their graduate study (e.g., earn more than two grades of “C” or fall below the 3.0 GPA required for graduation) must meet with a graduate faculty advisor to develop and sign a Conditional Retention Plan to support remediation.

### **Core Courses—9 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)

### **Specialization Courses—12 Credit Hours**

- EEX 5702 Planning Curriculum for Pre-Kindergarten Children with Disabilities (3 credit hours)
- EEX 5750 Communication with Parents and Agencies (3 credit hours)
- EEX 6017 Typical and Atypical Applied Child Development (3 credit hours)
- EEX 6222 Observation and Assessment of Young Children (3 credit hours)

### **Electives—9 Credit Hours**

Electives must be selected in consultation with an adviser.

### **Capstone Experience—6 Credit Hours**

- EEC 6909 Master’s Seminar (Action Research) (6 credit hours) OR
- EEC 6908 Thesis (6 credit hours)

The MEd program’s capstone experience requires a field experience in the master’s seminar which may be completed in student’s own early childhood settings. Field experiences are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

## **ADMISSIONS**

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, résumé, an essay about career goals or a graded essay, and a current Florida Professional Teaching Certificate in Early Childhood Education or have completed all the requirements for that Professional Teaching Certificate.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation.
- Résumé.
- Essay of applicant’s career goals OR a graded undergraduate/post graduate essay assignment (within 2 years).
- A current Florida Professional Teaching Certificate in Early Childhood Education or have completed all requirements for that Professional Teaching Certificate.
- An interview with and favorable recommendation by Early Childhood Graduate Faculty is required for admission.

GRE scores will be rated as part of a comprehensive rubric evaluation of the candidates’ overall graduate level competencies. Admission materials will be scored on a rubric (TBA) to quantify decision criteria.

Applicants to the MEd program must hold a current Early Childhood (Pre-K-Primary) or Elementary (K-6) Professional Florida Teaching Certificate or have completed all requirements for that Professional Teaching Certificate. Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students will be admitted to the program three times a year (in the fall, spring, and summer) and must apply for graduate admission by the application deadline established for this program.

Students who do not meet published admission requirements may be admitted provisionally and will be interviewed by a faculty program committee whose recommendations will be forwarded to the master's admission and retention committee in accordance with College of Education code for final admission action. Other admission factors that may be used in selecting students for provisional admission to the program are previous teaching experience or work (i.e., social service agencies) with pre-kindergarten or primary age children and their families.

Pre-Kindergarten Handicapped Endorsement MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Child, Family and Community Sciences  
 ED 122M

# Economics MS

## PROGRAM DESCRIPTION

The Master of Science in Economics degree program prepares students as economists for academic, governmental, business, and financial positions. The program provides students with the necessary theoretical and quantitative training to address current economic issues and problems in a thoughtful and rigorous manner.

Today's job market offers numerous opportunities to individuals with an advanced understanding of economic theory and methods. Individuals with a Master's degree in Economics may be employed in jobs that entail forecasting, market analysis, economic feasibility studies, commodity pricing, and environmental and natural resource considerations, to name a few.

## CURRICULUM

The Economics MS program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, 9-12 credit hours of economics electives, 0-3 credit hours of non-economics electives, and 6 credit hours in the thesis or nonthesis option. The nonthesis option consists of 3 credit hours of another economics course, and 3 credit hours of Directed Research. Students are then required to write and defend a research paper based upon that research.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

### Required Courses—12 Credit Hours

#### FALL TERM

- ECO 6403 Mathematical Economics (3 credit hours)
- ECO 6206 Macroeconomic Theory I (3 credit hours)
- ECO 6118 Microeconomic Theory I (3 credit hours)

#### SPRING TERM

- ECO 6424 Econometrics I (3 credit hours)

### Electives—12-15 Credit Hours

### **Economics Electives—9-12 Credit Hours**

Required courses must be completed before electives can be taken. A minimum of nine credit hours of economics electives is required. Other economics electives may be selected with the approval of the Graduate Program Director.

- ECO 6408 Games and Economic Behavior (3 credit hours)
- ECO 6505 Public Economics (3 credit hours)
- ECO 6705 International Economics (3 credit hours)
- ECO 6453 Experimental Economics (3 credit hours)
- ECP 6309 Survey of Environmental and Natural Resource Economics (3 credit hours)
- ECP 6405 Industrial Organization (3 credit hours)
- ECS 6015 Economic Development (3 credit hours)

### **Non-Economics Electives—0-3 Credit Hours**

A maximum of three credit hours of an approved non-economics elective may be completed from disciplines such as finance, marketing, mathematics, statistics, computer science, and environmental engineering.

### **Additional Program Requirements—3-6 Credit Hours**

All candidates for the MS degree must complete an end-of-program option. This requirement can be met by either of the following options: 1) a thesis option, or 2) a research paper option.

#### **Thesis Option—6 Credit Hours**

In the thesis option, the student must register for a total of six credit hours of ECO 6971 Thesis. The candidate fulfills this requirement by completing a formal thesis on a topic selected in consultation with the candidate's Thesis Advisory Committee, meeting both departmental and university requirements. The final examination consists of an oral examination over the thesis.

- ECO 6971 (6 credit hours)

#### **Research Paper Option—3 Credit Hours**

In lieu of a thesis, one additional economics course must be taken along with three credit hours of ECO 6918 Directed Research. Candidates choosing this option will be required to write a comprehensive

research paper on a topic selected in consultation with the candidate's Research Paper Advisory Committee. The final examination consists of an oral examination over the research paper.

- ECO 6918 Directed Research
- A research paper or thesis is required of all students in the program.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Résumé.
- Three letters of recommendation.
- Essay.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

The following 12 credit hours of prerequisite course work (or their equivalents) must be completed before a student may be admitted to the MS program.

- ECO 4412 Econometrics or equivalent (3 credit hours)
- ECO 3410 Mathematical Economics or Calculus III (3 credit hours)
- ECO 3101 Intermediate Microeconomics or equivalent (3 credit hours)
- ECO 3203 Intermediate Macroeconomics or equivalent (3 credit hours)

Prerequisite work may be entirely or partially satisfied through prior equivalent course work. Normally, such course work must have been satisfactorily completed at a regionally accredited college or university, preferably one accredited by the Association to Advance Collegiate Schools of Business (AACSB). Prerequisite course work does



not count toward the 30 credit hours required for completion of the MS degree.

The program is highly competitive and meeting the graduate admissions requirements is no guarantee of acceptance to the program. The program admits students only in the fall semester.

Economics MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 ED 122M

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# Educational Leadership MA

- Higher Education/Student Personnel MA
- Higher Education/Community College Education MA

## PROGRAM DESCRIPTION

The Master of Arts in Educational Leadership program is designed to prepare students for leadership positions in student personnel administration in higher education and education-related fields, and does not fulfill state certification requirements.

## CURRICULUM

The Educational Leadership MA program requires a minimum of 42 credit hours beyond the bachelor's degree, including 15 credit hours of core courses, nine credit hours of specialization, 18 credit hours of administration courses, completing a research

report and passing a comprehensive exam at the end of studies.

## Total Required Hours for MA—42 Credit Hours Minimum beyond the Bachelor's Degree

The MA program does not fulfill state certification requirements.

### Core Courses—15 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours) or EDF 6608 Social Factors in American Education (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDA 6909 Research Report (2,1 credit hours)

### Specialization Courses—9 Credit Hours

- Electives approved by adviser

### Administration Courses—18 Credit Hours

**It is recommended that these courses be taken in the following sequence:**

- EDA 6061 Organization and Administration of Schools (required) (3 credit hours)
- EDS 6123 Educational Supervisory Practices I (3 credit hours) or EDS 6130 Educational Supervisory Practices II (3 credit hours)
- EDA 6232 Legal Aspects of School Operation (3 credit hours)
- EDA 6240 Educational Financial Affairs (3 credit hours)
- EDA 6260 Educational Systems Planning and Management (3 credit hours)
- EDA 6931 Contemporary Issues in Educational Leadership (required) (3 credit hours)
- A research report is required.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

<b>Educational Leadership MA</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Educational Research, Technology  
 and Leadership  
 Education 222 K

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### *Educational Leadership MA*

# Higher Education/ Student Personnel MA

## TRACK DESCRIPTION

The Master of Arts in Higher Education/Student Personnel program is designed to prepare students for leadership positions in student personnel administration in higher education and education-related fields.

## CURRICULUM

### Total Required Hours for MA—39 Credit Hours Minimum beyond the Bachelor's Degree

The Higher Education/Student Personnel MA program requires a minimum of 39 credit hours beyond the bachelor's degree, including six credit hours of core courses, 24 credit hours of specialization, three credit hours of electives, six credit hours of professional field experience,

completing a research report and passing a comprehensive exam at the end of studies.

The MA program does not fulfill state certification requirements.

### Core Courses—6 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours) or EDF 6401 Statistics for Educational Data (3 credit hours)

### Specialization Courses—24 Credit Hours

- EDA 6540 Organization and Administration of Higher Education (3 credit hours)
- EDH 6065 History and Philosophy of Higher Education (3 credit hours)
- EDH 6505 Finance in Higher Education (3 credit hours)
- EDH 6935 Capstone Seminar in Student Personnel (3 credit hours)
- EDH 6407 Ethical and Legal Issues in College Student Personnel (3 credit hours)
- EDH 6634 Student Personnel Services in Higher Education (3 credit hours)
- EDH 6044 Career Exploration in Higher Education (3 credit hours)
- EDH 6047 The College Community and the Student (3 credit hours)

### Elective Courses—3 Credit Hours

- Electives approved by adviser

### Professional Field Experience—6 Credit Hours

- EDH 6946 Higher Education Internship (3 credit hours)
- EDH 6947 Practicum in Student Personnel (3 credit hours)

### Total Required Hours for MA—42 Credit Hours Minimum beyond the Bachelor's Degree

The MA program does not fulfill state certification requirements.

### Core Courses—15 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

- EDF 6517 Perspectives on Education (3 credit hours) or EDF 6608 Social Factors in American Education (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDA 6909 Research Report (2,1 credit hours)

- Personal statement explaining your past, present, and future involvement in events or activities related to your development in College Student Personnel.

An individual and group interview may be required.

**Specialization Courses—9 Credit Hours**

- Electives approved by adviser

**Administration Courses—18 Credit Hours**

**It is recommended that these courses be taken in the following sequence:**

- EDA 6061 Organization and Administration of Schools (required) (3 credit hours)
- EDS 6123 Educational Supervisory Practices I (3 credit hours) or EDS 6130 Educational Supervisory Practices II (3 credit hours)
- EDA 6232 Legal Aspects of School Operation (3 credit hours)
- EDA 6240 Educational Financial Affairs (3 credit hours)
- EDA 6260 Educational Systems Planning and Management (3 credit hours)
- EDA 6931 Contemporary Issues in Educational Leadership (required) (3 credit hours)
- Both an internship and practicum are required for completing the degree, in addition to a capstone seminar.

Higher Education/ Student Personnel MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Educational Research, Technology and Leadership  
 Education 206K

**ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, résumé, and a personal statement.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation, with one being from a staff, administrator, or faculty at a college or university familiar with your involvement or engagement in postsecondary education.
- Résumé.

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*Educational Leadership MA*

**Higher Education/  
 Community College  
 Education MA**

**TRACK DESCRIPTION**

**CURRICULUM**

The Higher Education/Community College Education program is designed for individuals whose goal is to teach at the community college level. Every attempt is made to build at least the required 18 hours of graduate-level art courses into the program of study. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in the content area.

Students electing this track will not meet state requirements for teacher certification in grades K-12. Total Required Hours for MA—42 Credit Hours Minimum beyond the Bachelor's Degree.

### Core Courses—24 Credit Hours

Students in this track should consult with the Higher Education/Community College Education Track adviser regarding core requirements prior to registering for core courses.

- EDH 6053 The Community College in America (3 credit hours)
- EDH 6081 Contemporary Problems in the Community College (3 credit hours)
- EDH 6204 Community College Organization, Administration and Supervision (3 credit hours)
- EDH 6215 Community College Curriculum (3 credit hours)
- EDH 6305 Teaching and Learning and Community College (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- IDS 6504 Adult Learning (3 credit hours)
- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)

### Specialized Courses—18 Credit Hours

Courses must be approved by adviser in one of the following disciplines:

- Art
- English
- Math
- Science
- Social Science

### Total Required Hours for MA—42 Credit Hours Minimum beyond the Bachelor's Degree

The MA program does not fulfill state certification requirements.

### Core Courses—15 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours) or EDF 6608 Social Factors in American Education (3 credit hours)

- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDA 6909 Research Report (2,1 credit hours)

### Specialization Courses—9 Credit Hours

- Electives approved by adviser

### Administration Courses—18 Credit Hours

**It is recommended that these courses be taken in the following sequence:**

- EDA 6061 Organization and Administration of Schools (required) (3 credit hours)
- EDS 6123 Educational Supervisory Practices I (3 credit hours) or EDS 6130 Educational Supervisory Practices II (3 credit hours)
- EDA 6232 Legal Aspects of School Operation (3 credit hours)
- EDA 6240 Educational Financial Affairs (3 credit hours)
- EDA 6260 Educational Systems Planning and Management (3 credit hours)
- EDA 6931 Contemporary Issues in Educational Leadership (required) (3 credit hours)

## ADMISSIONS

In addition to general admission requirements, applicants to this program must provide an official, competitive GRE score taken within the last five years.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.

Higher Education/Community College Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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Other

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Department of Teaching and Learning Principles  
ED 209

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## Educational Leadership MEd

**PROGRAM DESCRIPTION**

The Master of Education in Educational Leadership program is intended for those who wish to work in leadership positions and administrative careers in education. The MEd provides theoretical and conceptual knowledge base required for principalship and for Florida Level I Educational Leadership certification. Courses required in the program address the eight competency domains specified by the Florida Department of Education and included in the Florida Educational Leadership Examination (FELE).

**CURRICULUM**

The Educational Leadership MEd program requires a minimum of 39 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, 24 credit hours of specialization courses, and 6 credit hours of elective courses and a required internship.

**Total Required Hours for MEd—39  
Credit Hours Minimum beyond the  
Bachelor's Degree.**

The MEd program provides the theoretical and conceptual knowledge base required for principalship and for Florida Level I Educational Leadership certification. Courses required in the program address the eight competency domains specified by the Florida Department of Education and included in the Florida Educational Leadership Examination (FELE). Students are required to pass a comprehensive examination. An MEd in Educational Leadership or its equivalent, three years of teaching experience, and successful completion of the FELE are required by the state of Florida for

certification in educational leadership (certification is subject to Florida Department of Education approval).

The MEd program requires an internship. The internship is an independent learning activity that takes place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

**Modified Leadership Core Program**

If an individual holds a graduate degree with a major other than Educational Administration, Administration, Supervision or Educational Leadership, certification may be obtained through completion of an approved modified program in Educational Leadership. The UCF modified program consists of the eight courses in Specialization courses of the Educational Leadership MEd degree. Request an evaluation of prior graduate course work (required for admission into the program) on the following website: <http://pegasus.cc.ucf.edu/~educlead/>.

**Core Courses—9 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

Select one course:

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

**Specialization Courses—24 Credit  
Hours**

The program recommends that students take these courses in the following sequence:

- EDA 6061 Organization and Administration of Schools (3 credit hours)
- EDA 6232 Legal Aspects of School Operation (3 credit hours)
- EDA 6240 Educational Financial Affairs (3 credit hours)
- EDA 6260 Educational Systems Planning and Management (3 credit hours)
- EDA 6931 Contemporary Issues in Educational Leadership (3 credit hours)
- EDS 6123 Educational Supervisory Practices I (3 credit hours)
- EDS 6130 Educational Supervisory Practices II (3 credit hours)
- EDA 6946 Graduate Internship (3 credit hours; students must have teaching experience to complete the internship)

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Evidence of course work approved for the basic state of Florida bachelor's teaching certificate.

Educational Leadership MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### Elective Courses—6 Credit Hours

- EDA 6300 Community School Administration (3 credit hours)
- EDA 6502 Organization and Administration of Instructional Programs (3 credit hours)
- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EDG 6253 Curriculum Inquiry (3 credit hours)

### Additional Program Requirements

- Pass all applicable sections of the Florida Educational Leadership Examination.

The MEd program requires an internship. The internship is an independent learning activity that takes place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

### CONTACT INFO

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Associate Professor  
Program Director  
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Telephone 407-823-1468  
Department of Educational Research, Technology and Leadership  
Education 222 K

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## Electrical Engineering MSEE

- Accelerated BS to MSEE

### PROGRAM DESCRIPTION

The School of Electrical Engineering and Computer Science (Electrical Engineering Program) supports a number of technical (research) areas in which a Master of Science student may specialize. These technical areas are: Electromagnetics and Optics (EO), Signal Processing and Systems (SPS), and Micro-Systems and Nano-Systems (MNS). The Micro-Systems and Nano-Systems area covers the typical Electrical Engineering topic areas of Electronics, Power Electronics and Micro-Electronics, while the Signal Processing and Systems area covers the typical electrical topic areas of communications, controls, and signal processing. All MSEE programs offer a thesis and a nonthesis option, as well as an Accelerated BS to MSEE

program. Students in the program receive a broad background in the various technical areas, while specializing in a research area of their interest.

## CURRICULUM

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours) for all programs. Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work.

### Total Required Hours for MSEE—30 Credit Hours Minimum beyond the Bachelor's Degree.

#### Articulation

Undergraduate articulation courses may be required for students with BS and/or MS degrees in fields other than Electrical Engineering. The articulation courses will be determined by the graduate program director in consultation with the student's research adviser on a case-by-case basis. In general, students with a non-Electrical Engineering degree must have had the equivalent course work or satisfy the following articulation program:

- Mathematics through Differential Equations (MAP 2302 or equivalent)
- Physics with Calculus (PHY 2048, PHY 2049 or equivalent)
- Electronics I (EEL 3307C or equivalent)
- Electromagnetic Fields (EEL 3470 or equivalent)
- Signal Analysis and Communications (EEL 3552C or equivalent)
- Semiconductor Devices I (EEL 3306 or equivalent)

Additional courses may also be required to correct any undergraduate course deficiencies. Courses taken to correct deficiencies cannot be used to satisfy minimum degree requirements.

#### Transfer Credits

Graduate students with a bachelor's degree in Electrical Engineering from UCF may transfer up to 9 credit hours of 5000-level or higher course work toward a MSCpE nonthesis option or thesis option. Up to 9 credit hours may be transferred from graduate work conducted elsewhere from a regionally accredited institution.

## Thesis and Nonthesis Options

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours) in all technical areas. Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work. This requirement for a completed program of study is strictly enforced.

In addition to course work (nonthesis and thesis students) and thesis work (thesis students), all students could also be engaged in reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. This can be accomplished through Directed Research and Independent Study courses.

#### Thesis Option

This option requires a minimum of 30 credit hours of approved course work, of which 6 are thesis work (EEL 6971). The course requirements are as follows:

- Courses from the suggested list of courses for the student's chosen technical area (a list of suggested courses is provided below).
- No more than 6 credits of thesis (EEL 6971) will count toward the degree requirement
- At least one-half of the credit hours must be from 6000-level courses
- Thesis students who are full time must continue to enroll in three credit hours of thesis course work each semester until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis, but only six hours total will count towards the degree requirement.

#### Nonthesis Option

This option requires a minimum of 30 credit hours of course work and is intended primarily for part-time students. Program requirements are the same as the thesis option except that the thesis requirement is replaced by 6 credit hours of course work.

Nonthesis students are required to pass a culminating experience. The culminating experience requires that a semester prior to their intended graduation the nonthesis MS students submit a

portfolio of activities to the designated EE Graduate Coordinator. This portfolio contains the student's resume and completed graded assignments of extended projects that the students have completed as part of their course work or independent studies that they have conducted throughout their tenure in the MSEE program. This portfolio will be evaluated by an appropriate EECS committee and a "Satisfactory" or "Unsatisfactory" grade will be granted. An appropriate plan to correct an "Unsatisfactory" grade will be provided to the student who receives such a grade.

### Elective Courses

The majority of courses should be chosen from the suggested list of courses (below) pertaining to the student's chosen technical area. Courses from suggested lists of other technical areas that are supported by the EE program could also be chosen.

### Suggested Courses for the MSEE Program

The School of Electrical Engineering and Computer Science (Electrical Engineering Program) supports a number of technical research areas in which a master's student is expected to do research. These technical areas are (in alphabetical order): Electromagnetics and Optics (EO), Signal Processing and Systems (SPS), and Micro-Systems and Nano-Systems (MNS). The Micro-Systems and Nano-Systems areas covers the typical EE topic areas of Electronics, Power Electronics and Micro-Electronics, while the Signal Processing and Systems area covers the typical electrical topic areas of communications, controls, and signal processing.

In each one of these areas there is a suggested list of courses recommended for master's students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research (technical) area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a master's student is planning to take during his/her master's studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### Suggested Courses for Electromagnetics and Optics (EO)

- EEL 5425 RF and Microwave Measurement Techniques (3 credit hours)
- EEL 5439 RF and Microwave Communication (3 credit hours)
- EEL 5462 Antenna Analysis and Design (3 credit hours)
- EEL 5482 EM Theory I (3 credit hours)
- EEL 5432 Satellite Remote Sensing (3 credits)
- EEL 5447 Introduction to Radar Systems (3 credit hours)
- EEL 5542 Random Processes (3 credit hours)
- EEL 6463 Antenna Analysis and Design II (3 credit hours)
- EEL 6488 EM Theory II (3 credit hours)
- EEL 6481 Numerical Techniques in Electromagnetics (3 credit hours)
- EEL 6489 Advanced Topics in Electromagnetics (3 credit hours)
- EEL 6504 Communication System Design (3 credit hours)
- EEL 6530 Communication Theory (3 credit hours)
- EEL 6564 Statistical Optics with Applications (3 credit hours)
- EEL 6XXX Microwave Remote Sensing (3 credit hours)
- EEL 6XXX Advanced Radar Systems (3 credit hours)
- MAA 5404 Complex Analysis (3 credit hours)
- MAP 5426 Special Functions (3 credit hours)
- MAP 5435 Advanced Mathematics for Engineers (3 credit hours)
- MAP 6424 Transform Methods (3 credit hours)
- OSE 5041 Introduction to Wave Optics (3 credit hours)
- OSE 5111 Optical Wave Propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)
- OSE 5143 Fiber Optics Communications (3 credit hours)
- OSE 5225 Radiometry and Detection (3 credit hours)
- OSE 5414 Fundamentals of Optoelectronic Devices (3 credit hours)
- OSE 5421 Integrated Optics (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)
- OSE 6445 High Speed Photonics (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)



- OSE 6615L Optoelectronic Device Fabrication Laboratory (3 credit hours)
- OSE 6560 Laser Engineering (3 credit hours)
- OSE 6211 Fourier Optics (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Electromagnetics and Optics area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Electromagnetics and Optics committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the EE Graduate Coordinator.

#### **Suggested Courses for Micro-Systems and Nano-Systems (MNS)**

- EEL 5245 Power Electronics (3 credit hours)
- EEL 5317 Surface Acoustic Wave Devices and Systems (3 credit hours)
- EEL 5332 Thin Film Technology (3 credit hours)
- EEL 5352 Semiconductor Materials Characterization (3 credit hours)
- EEL 5353 Semiconductor Device Modeling and Simulation (3 credit hours)
- EEL 5355 Fabrication of Solid State Devices (3 credit hours)
- EEL 5370 Operational Amplifiers (3 credit hours)
- EEL 5378 CMOS Analog and Digital Circuit Design (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6317 Power Semiconductor Devices and Integrated Circuits (3 credit hours)
- EEL 6246 Power Electronics II (3 credit hours)
- EEL 6338 Advanced Topics in Microelectronics (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6371 Advanced Electronics I (3 credit hours)
- EEL 6372 Advanced Topics in Electronics (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Micro-Systems and Nano-Systems area. However, additional

courses pertinent to this area may be offered in a particular academic year at the discretion of the Micro-Systems and Nano-Systems committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the EE Graduate Coordinator.

#### **Suggested Courses for Signal Processing and Systems (SPS)**

- EEL 5513 Digital Signal Processing Applications (3 credit hours)
- EEL 6502 Adaptive Digital Signal Processing Applications (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 6823 Image Processing II (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 5630 Digital Control Systems (3 credit hours)
- EEL 5173 Linear Systems Theory (3 credit hours)
- EEL 6621 Nonlinear Control Systems (3 credit hours)
- EEL 6671 Modern and Optimal Control Systems (3 credit hours)
- EEL 6674 Optimal Estimation for Control (3 credit hours)
- EEL 6617 Fundamentals of Modern Multivariate Control (3 credit hours)
- EEL 6616 Adaptive Control (3 credit hours)
- EEL 6680 Advanced Topics in Modern Control Systems (3 credit hours)
- EEL 5XXX Autonomous Robotic Systems (3 credit hours)
- EEL 6XXX Cooperative Control of Networked Autonomous Systems (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Signal Processing and Systems area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Signal Processing and Systems committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis

adviser before they submit the program of study to the EE Graduate Coordinator. The School of Electrical Engineering and Computer Science (EECS) offers a Master of Science in Electrical Engineering. Students in the Electrical Engineering degree programs receive a broad background in areas such as communications, controls/robotics, digital signal processing, electromagnetics, power electronics and electronics, electro-optics/photonics, solid state and microelectronics, and very large-scale integration (VLSI) while specializing in a research area of their interest.

Research interests of the Electrical Engineering faculty include antennas, microwave and millimeter circuits and devices, communication systems, digital signal/image processing, power electronics, electronic circuits, IFF devices, electromagnetic theory, radar and microwave remote sensing, speech processing, VLSI design, spread spectrum systems, SAW and ACT devices, spectral estimation, solid state device modeling and computer-aided design (CAD) techniques, communication networks, integrated services digital networks, neural networks, systems and controls, robotics, robust control, computer control, microelectronics, semiconductors, thin films, power system stability, bipolar device modeling, solid state lasers, optical propagation, fiber optics, optical signal processing, laser-induced damage, optical testing, diffractive optics, phase conjunction, infrared detectors, Fourier optics, lens design, and nonlinear optics.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Electrical Engineering or a related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Electrical Engineering MSEE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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*Electrical Engineering MSEE*

# Accelerated BS to MSEE

## TRACK DESCRIPTION

The Accelerated Undergraduate/Graduate program in Electrical Engineering allows highly qualified undergraduate majors in Electrical Engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program. Participation will enable completion of the Bachelor of Science and

Master of Science degrees in five instead of six years for students enrolled in full-time course work.

## CURRICULUM

The BSEE is awarded after completion of all university requirements and 120 credit hours, including 71 hours of engineering courses. The MSEE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved 5000 and 6000 level courses of grades "B" (3.0) or better may be counted towards the BS and MS degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Electrical Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B" (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

### Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

### Graduate Requirements

Please see graduate program requirements.

### Total Required Hours for MSEE—30 Credit Hours Minimum beyond the Bachelor's Degree.

#### Articulation

Undergraduate articulation courses may be required for students with BS and/or MS degrees in fields other than Electrical Engineering. The articulation courses will be determined by the graduate program director in consultation with the student's research adviser on a case-by-case basis. In general, students with a non-Electrical Engineering degree must have had the equivalent course work or satisfy the following articulation program:

- Mathematics through Differential Equations (MAP 2302 or equivalent)

- Physics with Calculus (PHY 2048, PHY 2049 or equivalent)
- Electronics I (EEL 3307C or equivalent)
- Electromagnetic Fields (EEL 3470 or equivalent)
- Signal Analysis and Communications (EEL 3552C or equivalent)
- Semiconductor Devices I (EEL 3306 or equivalent)

Additional courses may also be required to correct any undergraduate course deficiencies. Courses taken to correct deficiencies cannot be used to satisfy minimum degree requirements.

### Transfer Credits

Graduate students with a bachelor's degree in Electrical Engineering from UCF may transfer up to 9 credit hours of 5000-level or higher course work toward a MScPE nonthesis option or thesis option. Up to 9 credit hours may be transferred from graduate work conducted elsewhere from a regionally accredited institution.

### Thesis and Nonthesis Options

The master's program offers a thesis option (30 credit hours, including 6 credit hours of thesis) and a nonthesis option (30 credit hours) in all technical areas. Students must have an adviser appointed and an official program of study submitted before completing 9 credit hours of course work. This requirement for a completed program of study is strictly enforced.

In addition to course work (nonthesis and thesis students) and thesis work (thesis students), all students could also be engaged in reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. This can be accomplished through Directed Research and Independent Study courses.

#### Thesis Option

This option requires a minimum of 30 credit hours of approved course work, of which 6 are thesis work (EEL 6971). The course requirements are as follows:

- Courses from the suggested list of courses for the student's chosen technical area (a list of suggested courses is provided below).
- No more than 6 credits of thesis (EEL 6971) will count toward the degree requirement
- At least one-half of the credit hours must be from 6000-level courses
- Thesis students who are full time must continue to enroll in three credit hours of thesis course work each semester until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis, but only six hours total will count towards the degree requirement.

### Nonthesis Option

This option requires a minimum of 30 credit hours of course work and is intended primarily for part-time students. Program requirements are the same as the thesis option except that the thesis requirement is replaced by 6 credit hours of course work.

Nonthesis students are required to pass a culminating experience. The culminating experience requires that a semester prior to their intended graduation the nonthesis MS students submit a portfolio of activities to the designated EE Graduate Coordinator. This portfolio contains the student's resume and completed graded assignments of extended projects that the students have completed as part of their course work or independent studies that they have conducted throughout their tenure in the MSEE program. This portfolio will be evaluated by an appropriate EECS committee and a "Satisfactory" or "Unsatisfactory" grade will be granted. An appropriate plan to correct an "Unsatisfactory" grade will be provided to the student who receives such a grade.

### Elective Courses

The majority of courses should be chosen from the suggested list of courses (below) pertaining to the student's chosen technical area. Courses from suggested lists of other technical areas that are supported by the EE program could also be chosen.

### Suggested Courses for the MSEE Program

The School of Electrical Engineering and Computer Science (Electrical Engineering Program) supports a number of technical research areas in which a master's student is expected to do research.

These technical areas are (in alphabetical order): Electromagnetics and Optics (EO), Signal Processing and Systems (SPS), and Micro-Systems and Nano-Systems (MNS). The Micro-Systems and Nano-Systems areas covers the typical EE topic areas of Electronics, Power Electronics and Micro-Electronics, while the Signal Processing and Systems area covers the typical electrical topic areas of communications, controls, and signal processing.

In each one of these areas there is a suggested list of courses recommended for master's students with research focus in one of these designated areas. Students are allowed to take courses from the suggested list of courses in areas other than their research (technical) area, but a good number of their courses should be chosen from courses in their research (technical) area of interest. A program of study, which lists all the courses that a master's student is planning to take during his/her master's studies, must be completed by the student no later than the completion of 9 credit hours into the program. This program of study is completed by the student after appropriate coordination with the academic/research adviser.

### Suggested Courses for Electromagnetics and Optics (EO)

- EEL 5425 RF and Microwave Measurement Techniques (3 credit hours)
- EEL 5439 RF and Microwave Communication (3 credit hours)
- EEL 5462 Antenna Analysis and Design (3 credit hours)
- EEL 5482 EM Theory I (3 credit hours)
- EEL 5432 Satellite Remote Sensing (3 credits)
- EEL 5447 Introduction to Radar Systems (3 credit hours)
- EEL 5542 Random Processes (3 credit hours)
- EEL 6463 Antenna Analysis and Design II (3 credit hours)
- EEL 6488 EM Theory II (3 credit hours)
- EEL 6481 Numerical Techniques in Electromagnetics (3 credit hours)
- EEL 6489 Advanced Topics in Electromagnetics (3 credit hours)
- EEL 6504 Communication System Design (3 credit hours)
- EEL 6530 Communication Theory (3 credit hours)
- EEL 6564 Statistical Optics with Applications (3 credit hours)
- EEL 6XXX Microwave Remote Sensing (3 credit hours)

- EEL 6XXX Advanced Radar Systems (3 credit hours)
- MAA 5404 Complex Analysis (3 credit hours)
- MAP 5426 Special Functions (3 credit hours)
- MAP 5435 Advanced Mathematics for Engineers (3 credit hours)
- MAP 6424 Transform Methods (3 credit hours)
- OSE 5041 Introduction to Wave Optics (3 credit hours)
- OSE 5111 Optical Wave Propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)
- OSE 5143 Fiber Optics Communications (3 credit hours)
- OSE 5225 Radiometry and Detection (3 credit hours)
- OSE 5414 Fundamentals of Optoelectronic Devices (3 credit hours)
- OSE 5421 Integrated Optics (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)
- OSE 6445 High Speed Photonics (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)
- OSE 6615L Optoelectronic Device Fabrication Laboratory (3 credit hours)
- OSE 6560 Laser Engineering (3 credit hours)
- OSE 6211 Fourier Optics (3 credit hours)
- EEL 5352 Semiconductor Materials Characterization (3 credit hours)
- EEL 5353 Semiconductor Device Modeling and Simulation (3 credit hours)
- EEL 5355 Fabrication of Solid State Devices (3 credit hours)
- EEL 5370 Operational Amplifiers (3 credit hours)
- EEL 5378 CMOS Analog and Digital Circuit Design (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6317 Power Semiconductor Devices and Integrated Circuits (3 credit hours)
- EEL 6246 Power Electronics II (3 credit hours)
- EEL 6338 Advanced Topics in Microelectronics (3 credit hours)
- EEL 6354 Advanced Semiconductor Devices (3 credit hours)
- EEL 6371 Advanced Electronics I (3 credit hours)
- EEL 6372 Advanced Topics in Electronics (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Electromagnetics and Optics area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Electromagnetics and Optics committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the EE Graduate Coordinator.

#### **Suggested Courses for Micro-Systems and Nano-Systems (MNS)**

- EEL 5245 Power Electronics (3 credit hours)
- EEL 5317 Surface Acoustic Wave Devices and Systems (3 credit hours)
- EEL 5332 Thin Film Technology (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Micro-Systems and Nano-Systems area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Micro-Systems and Nano-Systems committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the EE Graduate Coordinator.

#### **Suggested Courses for Signal Processing and Systems (SPS)**

- EEL 5513 Digital Signal Processing Applications (3 credit hours)
- EEL 6502 Adaptive Digital Signal Processing Applications (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 6823 Image Processing II (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 6812 Introduction to Neural Networks (3 credit hours)
- EEL 5630 Digital Control Systems (3 credit hours)
- EEL 5173 Linear Systems Theory (3 credit hours)

- EEL 6621 Nonlinear Control Systems (3 credit hours)
- EEL 6671 Modern and Optimal Control Systems (3 credit hours)
- EEL 6674 Optimal Estimation for Control (3 credit hours)
- EEL 6617 Fundamentals of Modern Multivariate Control (3 credit hours)
- EEL 6616 Adaptive Control (3 credit hours)
- EEL 6680 Advanced Topics in Modern Control Systems (3 credit hours)
- EEL 5XXX Autonomous Robotic Systems (3 credit hours)
- EEL 6XXX Cooperative Control of Networked Autonomous Systems (3 credit hours)

**Notes:** The aforementioned list is a representative list of courses recommended for the Signal Processing and Systems area. However, additional courses pertinent to this area may be offered in a particular academic year at the discretion of the Signal Processing and Systems committee.

It is imperative that the student completes a Program of Study (POS) in consultation with the EE Graduate Coordinator no later than 9 hours of graduate course work has been completed. Thesis students must also coordinate with their thesis adviser before they submit the program of study to the EE Graduate Coordinator. The School of Electrical Engineering and Computer Science (EECS) offers a Master of Science in Electrical Engineering. Students in the Electrical Engineering degree programs receive a broad background in areas such as communications, controls/robotics, digital signal processing, electromagnetics, power electronics and electronics, electro-optics/photonics, solid state and microelectronics, and very large-scale integration (VLSI) while specializing in a research area of their interest.

Research interests of the Electrical Engineering faculty include antennas, microwave and millimeter circuits and devices, communication systems, digital signal/image processing, power electronics, electronic circuits, IFF devices, electromagnetic theory, radar and microwave remote sensing, speech processing, VLSI design, spread spectrum systems, SAW and ACT devices, spectral estimation, solid state device modeling and computer-aided design (CAD) techniques, communication networks, integrated services digital networks, neural networks, systems and controls, robotics, robust control, computer control, microelectronics, semiconductors, thin films, power system stability,

bipolar device modeling, solid state lasers, optical propagation, fiber optics, optical signal processing, laser-induced damage, optical testing, diffractive optics, phase conjunction, infrared detectors, Fourier optics, lens design, and nonlinear optics.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Electrical Engineering or a related discipline, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Electrical Engineering or a related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting applicants into their research program.

Additional courses may also be required to correct any course deficiencies. Students should contact the graduate program director for further information.

Accelerated BS to MSEE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1

Accelerated BS to MSEE	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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# Elementary Education MA

## PROGRAM DESCRIPTION

**With the exception of the Community College Teaching Track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a Master of Arts in Elementary Education a state-approved initial teacher certification program designed for individuals who have an undergraduate degree in a field other than Elementary Education (grades K-6) and who wish to become certified to teach in this field. This program is committed to preparing highly qualified Elementary Education teachers, with knowledge and skills mated to research-based best practices. Additionally, graduates from this program will be able to continue to evaluate contemporary research in the field of Elementary Education and will be able to conduct action research regarding their own practice.

## CURRICULUM

The Elementary Education MA requires a minimum of 45 credit hours beyond the bachelor's degree. If the MA program will be providing a student's initial certification, 80 clock hours of field experience must be completed before enrolling in the supervised internship.

### Total Required Hours for MA—45 Credit Hours Minimum beyond the Bachelor's Degree.

The program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. The program also requires an internship.

Preparation of a TESOL notebook is required. Students should plan to enroll in EDE 6933 and TSL 5528 early in the program to learn more about program requirements.

### Seminars—3 Credit Hours

- EDE 6933 Elementary Education Seminar I (2 credit hours)
- EDE 6935 Elementary Education Seminar II (1 credit hour)

### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

## Specialization—21 Credit Hours

**Note:** EDE 6933 is a prerequisite or co-requisite for the specialization courses below.

- LAE 5319 Methods of Elementary School Language Arts (3 credit hours)
- LAE 5415 Children’s Literature in Elementary Education (3 credit hours)
- MAE 5318 Current Methods in Elementary School Mathematics (3 credit hours)
- SCE 5315 Methods in Elementary School Science (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- RED 5517 Classroom Diagnosis and Development of Reading Proficiencies (Prerequisite: RED 5147) (3 credit hours)
- SSE 5115 Methods in Elementary School Social Science (3 credit hours)

## Internship—6 Credit Hours

Satisfactory completion of graduate internship requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State Board of Education Rule 6A-5.065.

- EDE 6946 Graduate Internship (6 credit hours)

## Co-requisites—6 Credit Hours

- EDE 4932 Integrating the Arts and Movement in Elementary School (3 credit hours)
- RED 4942 Practicum in Assessment and Instruction in Reading (3 credit hours)

## Additional Program Requirements

- Complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Complete a TESOL notebook to address Florida ESOL competencies.
- Pass all applicable sections of the Florida Teacher Certification Examination.

A portfolio is required that demonstrates professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. An internship is also required that demonstrates proficiency in all 12 Florida Educator Accomplished Practices.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Elementary Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Engineering 407B

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# Elementary Education MEd

## PROGRAM DESCRIPTION

The College of Education offers a master’s program in Elementary Education leading to a Master of Education (MEd) degree. The MEd program is designed to meet the needs of the classroom teacher whose career goal is to remain in the classroom. It provides experiences in the foundations of education, an update of the student’s skills and understanding related to current research and



instructional trends in basic subject matter areas, and elective choices in specific areas.

## CURRICULUM

The MEd in Elementary Education requires a minimum of 30 credit hours beyond the bachelor's degree and offers a thesis and nonthesis option. Both options require 9 credit hours of core courses and a minimum of 12 credit hours of specialization courses, and have 9 credit hours taken within the thesis or nonthesis options.

### Total Required Hours for MEd—30 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program offers a thesis and nonthesis option. The nonthesis option requires a research study in one or more courses. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research-based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research-based best practices in the classroom).

#### Core Courses—9 Credit Hours

- EDE 6933 Elementary Education Seminar I\* (2 credit hours)
- EDE 6935 Elementary Education Seminar II\* (1 credit hour)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- EME 5050 Fundamentals of Technology for Educators (3 credit hours) or EME 6405 Application Software for Educational Settings (3 credit hours)

**Note:** Courses with an asterisk (\*) require an independent learning experience in the form of research studies.

#### Specialization Courses—12 Credit Hours Minimum

The adviser may approve courses taken as part of a UCF certificate program for this area of the MEd

(up to 12 credit hours). The adviser must approve elective courses for this area.

Select from the following courses:

- LAE 5195 CFWP Teacher Consultant (3 credit hours)
- LAE 5295 Writing Workshop I (1-3 credit hours)
- LAE 5415 Children's Literature Elementary Education (3 credit hours). (Use the course above only if no previous children's literature course has been taken.)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6417 Investigations in Children's Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- LAE 6936 Seminar in Language Arts Education (3 credit hours)
- MAE 6517 Diagnosis/Remediation of Difficulties in Mathematics for the Classroom Teacher (3 credit hours)
- MAE 6641 Problem Solving and Critical Thinking Skills (3 credit hours)
- RED 6116 Trends in Reading Education (3 credit hours)
- SCE 5836 Space Science for Educators (3 credit hours)
- SCE 6105 Trends in Elementary School Science Education (3 credit hours)
- ISC 6146 Environmental Education for Educators (3 credit hours)
- SSE 6617 Trends in Elementary School Social Studies Education (3 credit hours)
- TSL 5345 Methods of ESOL Teaching (3 credit hours)
- TSL 6142 Critical Approaches to ESOL (3 credit hours)
- TSL 6440 Problems in Evaluation in ESOL (3 credit hours)
- EEC 5205 Programs and Trends in Early Childhood Education (3 credit hours)
- EEC 5206 Organization of Instruction in Early Childhood Education (3 credit hours)

#### Options—9 Credit Hours Minimum

**Thesis Option:** No comprehensive exam needed for this option—9 Credit Hours

- EDE 6971 Thesis (6 credit hours)
  - LAE 6792 Teacher Researcher (3 credit hours)
- OR

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

**Nonthesis Option:** Comprehensive exam is required for this option—9 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours) or EDF 6446 Assessment of Learning (3 credit hours)
- 6 credit hours selected with the permission of the adviser
- The program requires a research study in both the EDE 6933 and EDE 6935 courses. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. For students already working in a school setting, this research-based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A current Florida Professional Teaching Certificate in the program's subject area or have completed all requirements for that Professional Teaching Certificate. Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Elementary Education MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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# English Language Arts Education MA

## PROGRAM DESCRIPTION

**With the exception of the Community College Teaching Track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The Master of Arts in English Language Arts Education is a state-approved initial teacher preparation program for students seeking certification to teach English in grades 6-12, including students previously certified to teach in another field. The MA program also includes a Community College Teaching Track, which is designed for individuals planning to teach at that level and not requiring state teacher certification.

## CURRICULUM

The English Language Arts Education MA requires a minimum of 45 credit hours beyond the bachelor's degree, including 12 credit hours of core courses, 24 credit hours of specialization, and 9 credit hours of internship.

### Total Hours Required for MA—45 Credit Hours Minimum beyond the Bachelor's Degree.

The English Language Arts Education MA requires a minimum of 45 credit hours beyond the bachelor's degree, including 12 credit hours of core courses, 24 credit hours of specialization, and 9 credit hours of internship. The program is a secondary (grades 6-12) program for noneducation majors or previously certified teachers in another field.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. In addition, an internship is required.

### Required Core Courses—12 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Elective Specialization Courses—24 Credit Hours

- Elective (3 credit hours)
- LAE 5338 Teaching Writing in Middle and High School (3 credit hours)

- LAE 5346 Methods of Teaching English Language Arts (3 credit hours)
- LAE 5465 Literature for Adolescents (3 credit hours)
- LAE 6637 Research in Teaching English (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- RED 5517 Classroom Diagnosis and Development of Reading Proficiencies (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

### Internship—9 Credit Hours

- LAE 6946 Graduate Internship (6 credit hours)
- RED 4942 Practicum in Assessment and Instruction in Reading (3 credit hours)

Satisfactory completion of graduate internships requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State Board of Education Rule 6A-5.065.

### Additional Program Requirements

- Complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Students are required to take 30 credit hours of co-requisite undergraduate and graduate English course work to meet certification requirements to teach English, grades 6-12. These may be previously earned undergraduate or graduate English credits, or include graduate credits in English approved for electives in the program. Only six credit hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.
- Pass all applicable sections of the Florida Teacher Certification Examination.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final

reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. In addition, an internship is required.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from a MA program to a MEd program, or vice versa, without going through the university's admission process.

English Language Arts Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Department of Teaching and Learning Principles  
Education 122B

# English Language Arts Education MEd

## PROGRAM DESCRIPTION

**This is a state-approved teacher education program that is currently undergoing revision in response to a change in Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a Master of Education in English Language Arts Education designed to meet the advanced knowledge and skill needs of the English classroom teacher.

## CURRICULUM

The English Language Arts Education MA program requires a minimum of 36 credit hours beyond the bachelor's degree, including 18 credit hours of core courses and 18 credit hours of specialization. Students may choose to complete a research report or take two electives and a comprehensive examination.

### **Total Hours Required for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The MEd program requires a research study in one or more courses in one option and a thesis is required in the second option. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### **Required Core Courses—18 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

Select one course:

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Select Option A or B:

**Option A: Research Report—6 Credit Hours**

- LAE 6792 Teacher Researcher (3 credit hours)
- ESE 6909 Research Report (2, 1 credit hours)

**Option B: Two electives approved by adviser—6 Credit Hours**

**Note:** Students selecting Option B must pass a written comprehensive examination.

**Elective Specialization Courses—18 Credit Hours**

- LAE 6637 Research in Teaching English\* (3 credit hours)
- LAE 6936 Seminar in Language Arts Education\* (3 credit hours)

**Note:** Courses with an asterisk (\*) require action research, which represents the independent learning experience for this program.

Select any four of the following courses:

- LAE 5295 Writing Workshop I (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6366 Studies in Adolescent Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- Both LAE 6637 and LAE 6936 require action research as the independent learning experience for this program.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions

and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in English Language Arts Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students may not switch from a MA program to a MEd program, or vice versa, without going through the university’s admission process. Courses used to gain initial state certification may not be transferred into a MEd program.

English Language Arts Education MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Department of Teaching and Learning Principles  
 Education 122B

## English MA

- Literature MA
- Rhetoric and Composition MA
- Technical Communication MA

### PROGRAM DESCRIPTION

The Department of English offers a Master of Arts (MA) degree in English with tracks in Literature, Rhetoric and Composition, and Technical Communication. Each part of the graduate program emphasizes the enhancement of critical thinking and writing skills useful for career development in academic and professional settings. The program is designed for students interested in intellectual and practical questions of aesthetics, critique, culture, text, and interpretation.

### CURRICULUM

The English Language Arts Education MA program requires a minimum of 36 credit hours beyond the bachelor's degree, including 18 credit hours of core courses and 18 credit hours of specialization. Students may choose to complete a research report or take two electives and a comprehensive examination.

### Total Hours Required for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires a research study in one or more courses in one option and a thesis is required in the second option. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### Required Core Courses—18 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

Select one course:

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Select Option A or B:

#### Option A: Research Report—6 Credit Hours

- LAE 6792 Teacher Researcher (3 credit hours)
- ESE 6909 Research Report (2, 1 credit hours)

#### Option B: Two electives approved by adviser—6 Credit Hours

**Note:** Students selecting Option B must pass a written comprehensive examination.

### Elective Specialization Courses—18 Credit Hours

- LAE 6637 Research in Teaching English\* (3 credit hours)
- LAE 6936 Seminar in Language Arts Education\* (3 credit hours)

**Note:** Courses with an asterisk (\*) require action research, which represents the independent learning experience for this program.

Select any four of the following courses:

- LAE 5295 Writing Workshop I (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6366 Studies in Adolescent Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- Both LAE 6637 and LAE 6936 require action research as the independent learning experience for this program.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

English MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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 englgrad@pegasus.cc.ucf.edu  
 Telephone 407-823-5254  
 Department of English  
 Colbourn Hall 302E

English MA

# Literature MA

## TRACK DESCRIPTION

## CURRICULUM

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

Each student must complete at least 33 credit hours, including one course in linguistics and six core courses. Near the end of the degree program, each candidate will write a comprehensive examination based on a prescribed reading list and (a) complete 6 additional credit hours in 6000-level literature courses or (b) write a thesis.

The program has a research study housed in one or more courses and requires a research study and final report focusing on literary criticism in a student's particular specialization.

Students with a baccalaureate degree in a subject other than English may be required to take graduate survey courses in British and American literature (AML 5076 and/or ENL 5006). Students must also prove proficiency in a foreign language at the first-year level prior to completing the degree program.

## Required Courses—21 Credit Hours

- ENG 5009 Methods of Bibliography and Research (3 credit hours)
- ENG 5018 Literary Criticism (3 credit hours)
- LIN 5137 Linguistics (or an equivalent) (3 credit hours; the requirement, not the hours, may be waived if student has completed a course in linguistics at the 4000 level or above with a grade of "A" or "B")
- LIT 6009 Literary Genres (3 credit hours)
- LIT 6105 World Literature (3 credit hours)
- LIT 6246 Major Authors (3 credit hours)
- LIT 6365 Movements in Literature (3 credit hours)

## Electives—6 Credit Hours

Students in consultation with the graduate adviser, will choose two graduate-level English courses.

## Specialization—6 Credit Hours

### Choose A or B

A. Course Option—Students will complete 6 additional hours of 6000-level literature courses.

B. Thesis Option—Students will complete a formal thesis on a topic selected in consultation with an advisory committee and will meet both departmental and university requirements for the thesis. The student will also enroll in LIT 6971 Thesis for 6 credit hours.

## Comprehensive Examination

The comprehensive exam is a written exam, based on a reading list of literary and critical theoretical texts, and consists of essay questions.

### Total Hours Required for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires a research study in one or more courses in one option and a thesis is required in the second option. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically

involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### Required Core Courses—18 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

Select one course:

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Select Option A or B:

#### Option A: Research Report—6 Credit Hours

- LAE 6792 Teacher Researcher (3 credit hours)
- ESE 6909 Research Report (2, 1 credit hours)

#### Option B: Two electives approved by adviser—6 Credit Hours

**Note:** Students selecting Option B must pass a written comprehensive examination.

### Elective Specialization Courses—18 Credit Hours

- LAE 6637 Research in Teaching English\* (3 credit hours)
- LAE 6936 Seminar in Language Arts Education\* (3 credit hours)

**Note:** Courses with an asterisk (\*) require action research, which represents the independent learning experience for this program.

Select any four of the following courses:

- LAE 5295 Writing Workshop I (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6366 Studies in Adolescent Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- All courses in the Master's in English, Literature Track require students to complete

substantial independent research projects and thus, provide students the opportunity to engage in independent learning.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree in English, two letters of recommendation, goal statement, a writing sample, and one year of a foreign language at the university level is required (which may be taken while in graduate residence); applicants from countries where English is not the official language of applicants from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in English or its equivalent.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation from faculty members or others familiar with applicant's academic potential.
- One year of a foreign language at the university level (may be taken while in graduate residence).
- A one to two page goal statement addressing the applicant's reasons for pursuing graduate study in English.
- A researched literary analysis or equivalent essay of approximately ten pages.
- A score of at least 233 (computer-based test) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

A résumé is required for applicants seeking assistantship positions.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential



for completing the degree.

Literature MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

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 Program Director  
 englgrad@pegasus.cc.ucf.edu  
 Telephone 407-823-5254  
 Department of English  
 Colbourn Hall 302E

English MA

# Rhetoric and Composition MA

## TRACK DESCRIPTION

The Master of Arts in English, Rhetoric and Composition program focuses on how language is used in real-world contexts.

## CURRICULUM

### Total Hours Required for MA—33 Credit Hours Minimum beyond the Bachelor’s Degree.

Each student must complete at least 33 credit hours, including four core classes. Near the end of the degree program, each candidate will write a comprehensive examination based on a prescribed reading list and (a) write a thesis or (b) complete a classroom-based research project.

The program requires that students complete a thesis or a Classroom Research Project approved by the graduate faculty that will contribute to the field of study with an emphasis on innovative pedagogy.

### Required Courses—12 Credit Hours

- ENC 6335 Rhetorical Traditions (3 credit hours)
- ENG 5009 Methods of Bibliography and Research (3 credit hours)
- ENC 5705 Theory and Practice in Composition (3 credit hours)
- ENC 6712 Studies in Literacy and Writing (3 credit hours)

### Restricted Electives—12 Credit Hours

Students will choose courses in concert with a graduate faculty adviser from among the three concentration areas:

#### Rhetorical Foundations

- ENC 5337 Modern Rhetorical Theory (3 credit hours)
- ENC 332 Gendered Rhetoric (3 credit hours)
- LIT 6435 Rhetoric of Science (3 credit hours)
- ENC 6339 Rhetorical Movements (3 credit hours)
- ENC 6333 Contemporary Rhetoric and Composition Theory (3 credit hours)

#### Rhetoric in Practice

- ENC 6306 Persuasive Writing (3 credit hours)
- ENC 5237 Writing for the Business Professional (3 credit hours)
- ENC 6244 Teaching Technical Writing (3 credit hours)
- CRW 5932 Teaching Creative Writing (3 credit hours)
- ENC 5745 Teaching Practicum (3 credit hours)
- ENC 6702 Issues in Writing Assessment (3 credit hours)

#### Studies in Literacy and Writing

- LIN 5675 English Grammar and Usage (3 credit hours)
- LIN 5137 Linguistics (3 credit hours)
- ENC 5276 Writing/Consulting: Theory and Practice (3 credit hours)
- ENC 5945 Community Literacy Practicum (3 credit hours)
- ENC 6429 Teaching Writing with Computers (3 credit hours)
- ENC 6338 The Rhetorics of Public Debate (3 credit hours)

### Advised Electives—6 Credit Hours

Students will work with an adviser to choose two other graduate-level English courses or approved

courses outside the department.

## Specialization—3 Credit Hours

### Choose A or B

A. Classroom Research Project Option—Students will enroll in ENC 6918 Directed Research for 3 credit hours and complete a research project approved by an advisory committee. This project will consist of a pedagogical research project of direct applicability to the field of Rhetoric and Composition.

B. Thesis Option—Students will complete a formal thesis on a topic selected in consultation with an advisory committee and will meet both departmental and university requirements for the thesis. The student will also enroll in ENC 6971 Thesis for 3 credit hours.

## Comprehensive Examination

The comprehensive examination is a written exam, based on a booklist, and consists of essay questions.

## Total Hours Required for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires a research study in one or more courses in one option and a thesis is required in the second option. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

## Required Core Courses—18 Credit Hours

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

Select one course:

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Select Option A or B:

### Option A: Research Report—6 Credit Hours

- LAE 6792 Teacher Researcher (3 credit hours)
- ESE 6909 Research Report (2, 1 credit hours)

### Option B: Two electives approved by adviser—6 Credit Hours

**Note:** Students selecting Option B must pass a written comprehensive examination.

## Elective Specialization Courses—18 Credit Hours

- LAE 6637 Research in Teaching English\* (3 credit hours)
- LAE 6936 Seminar in Language Arts Education\* (3 credit hours)

**Note:** Courses with an asterisk (\*) require action research, which represents the independent learning experience for this program.

Select any four of the following courses:

- LAE 5295 Writing Workshop I (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6366 Studies in Adolescent Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)
- For nonthesis students, a classroom-based research project is required that emphasizes innovative pedagogy.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree in English, two letters of recommendation, goal statement, a writing sample, and one year of a foreign language at the university level is required (which may be taken while in graduate residence); applicants from countries where English is not the official language or students with degrees from non-U.S. accredited

institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in English or its equivalent.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation from faculty members or others familiar with applicant’s academic potential.
- One year of a foreign language at the university level (may be taken while in graduate residence).
- A one to two page goal statement addressing the applicant’s reasons for pursuing graduate study in English.
- An academic essay that demonstrates an ability to analyze and argue, approximately ten pages. A cover statement of no more than one page that explains why you chose to submit this particular academic essay and how you would revise it if you had the opportunity. All statements and essays should be revised writing (i.e., not written under timed conditions). Writing should be “clean”: typed, error-free, with no teacher comments. The academic essay should demonstrate an ability to follow a scholarly format such as MLA or APA.
- A score of at least 233 (computer-based test) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

A résumé is required for applicants seeking assistantship positions.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Rhetoric and Composition MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

**CONTACT INFO**

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 Department of English  
 Colbourn Hall 302E

English MA

**Technical  
 Communication MA**

**TRACK DESCRIPTION**

**CURRICULUM**

**Total Hours Required for MA—33  
 Credit Hours Minimum beyond the  
 Bachelor’s Degree.**

Each student must complete at least 33 credit hours, as outlined below. Near the end of the degree program, each candidate will write a comprehensive examination and enroll in ENC 6971 or ENC 6918 (3 credit hours), completing a formal thesis or project approved by the faculty.

The Technical Communication track requires either a thesis or a research study, which is approved by the graduate faculty and which requires extensive independent research and a final paper detailing the subject, purpose, scope, methodology, and conclusions of the study.

**Required Courses—15 Credit Hours**

- ENC 6297 Production and Publication Methods (3 credit hours)
- ENC 5337 Modern Rhetorical Theory (3 credit hours)
- ENC 6217 Technical Editing (3 credit hours)
- ENC 6261 Technical Writing: Theory and Practice (3 credit hours)
- ENG 5009 Methods of Bibliography and Research (3 credit hours)

**Restricted Electives—9 Credit Hours**

- ENC 6257 Graphics in Technical Writing (3 credit hours)
- ENC 6306 Persuasive Writing (3 credit hours)
- ENC 6247 Proposal Writing (3 credit hours)
- ENC 6244 Teaching Technical Writing (3 credit hours)
- ENC 6292 Project Management for Technical Writers (3 credit hours)
- ENC 6296 Computer Documentation (3 credit hours)

**Advised Electives—6 Credit Hours**

Students in consultation with the graduate adviser, will choose two graduate-level English courses or approved courses from outside the department.

Specialization—3 Credit Hours

**Choose A or B**

A. Thesis Option—Students will complete a formal thesis selected in consultation with an advisory committee and will meet both departmental and university requirements for the thesis. The student will enroll in ENC 6971 Thesis for 3 credit hours.

B. Special Project—Students will enroll in ENC 6918 Directed Research for 3 credit hours and complete a research project approved by an advisory committee. This project will be on a topic in technical communication and in a format other than that of a traditional thesis.

**Comprehensive Examination**

The comprehensive examination is a written exam based on four of the core courses (excluding ENG 5009) and two concentration areas designed by the student.

**Total Hours Required for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The MEd program requires a research study in one or more courses in one option and a thesis is required in the second option. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

**Required Core Courses—18 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

Select one course:

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Select Option A or B:

**Option A: Research Report—6 Credit Hours**

- LAE 6792 Teacher Researcher (3 credit hours)
- ESE 6909 Research Report (2, 1 credit hours)

**Option B: Two electives approved by adviser—6 Credit Hours**

**Note:** Students selecting Option B must pass a written comprehensive examination.

**Elective Specialization Courses—18 Credit Hours**

- LAE 6637 Research in Teaching English\* (3 credit hours)
- LAE 6936 Seminar in Language Arts Education\* (3 credit hours)

**Note:** Courses with an asterisk (\*) require action research, which represents the independent learning experience for this program.

Select any four of the following courses:

- LAE 5295 Writing Workshop I (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- LAE 5495 Assessing Writing (3 credit hours)
- LAE 6296 Writing Workshop II (3 credit hours)
- LAE 6366 Studies in Adolescent Literature (3 credit hours)
- LAE 6616 Trends in Language Arts Education (3 credit hours)

Both the thesis and special project options of the Master's in English, Technical Communication Track require students to conduct original research and to produce a final paper detailing the subject, purpose, scope, methodology, and conclusions of the study, thus, providing students the opportunity to engage in independent learning.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree, two letters of recommendation, goal statement, a writing sample, and one year of a foreign language at the university level is required (which may be taken while in graduate residence); applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation from faculty members or others familiar with applicant's academic potential.
- One year of a foreign language at the university level (may be taken while in graduate residence).
- A one to two page goal statement addressing the applicant's reasons for pursuing graduate study in English.

- A professional writing sample of approximately ten pages (or an equivalent amount of web-based work).
- A score of at least 233 (computer-based test) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

A résumé is required for applicants seeking assistantship positions.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Technical Communication MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

Graduate Program Office  
 Program Director  
 englgrad@pegasus.cc.ucf.edu  
 Telephone 407-823-5254  
 Department of English  
 Colbourn Hall 302E

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# Environmental Engineering MS

- Environmental Engineering Sciences MS

## PROGRAM DESCRIPTION

The Environmental Engineering MS degree program is for students with science, math, or a similar background, and usually requires a

number of undergraduate engineering courses as articulation to become fully prepared for graduate work in environmental engineering. Applicants to the program are expected to be knowledgeable in topics including chemistry, process design, water resources, and air pollution. The program focuses on pollution control, pollution prevention, and the correction of pollution effects on natural and man-made environments.

The program is noted for its strong faculty research interests, and areas of study include drinking water treatment, wastewater treatment, solid and hazardous waste management, atmospheric pollution control and modeling, community noise abatement, and stormwater management. The program's overall mission is to prepare students for careers in environmental engineering with consulting firms; with industry; within federal, state, and local governments; and/or in higher education.

The program's overall mission is to prepare students for Environmental Engineering careers in federal, state, and local governments; higher education; consulting; and industry.

Other key objectives include:

- Producing graduates who have technical knowledge in critical areas of environmental engineering
- Providing a professional engineering education that challenges our graduates to think critically
- Forming and maintaining partnerships with industry, government agencies, and professional organizations
- Developing awareness of the changing environmental needs of society and the global environment.

## CURRICULUM

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines

for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

Those applying to the programs without a directly related undergraduate degree should closely check the prerequisites. For students with nontechnical undergraduate degrees, it is recommended that a second undergraduate degree in Environmental Engineering be completed before applying to graduate school.

Final articulation requirements will be determined by the department after students have been admitted and after discussions with their advisers.

Environmental Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

David Cooper PhD, PE  
 Professor  
 Program Director  
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 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

*Environmental Engineering MS*

# Environmental Engineering Sciences MS

## TRACK DESCRIPTION

The Master of Science in Environmental Engineering program is for students with science, math, or a similar background, and usually requires a number of undergraduate engineering courses as articulation to become fully prepared for graduate work in environmental engineering.

## CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The Environmental Sciences MS requires a minimum of 30 credit hours beyond the bachelor's degree, and offers both thesis and nonthesis options. Students choosing the thesis option must take 12 credit hours of required courses, 12 credit hours of electives, and 6 thesis credit hours. Students choosing the nonthesis option must take 12 credit hours of required courses, 18 credit hours of electives, and pass a comprehensive examination. Students develop an individualized program of study with a faculty adviser.

The thesis option is required for all students supported on contracts and grants, as well as any student receiving department financial support. The nonthesis option requires a comprehensive final oral and written examination as a requirement for graduation. This option is recommended only for part-time students on a limited access basis.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

The completion of prerequisite courses may also be required before students may begin program course work.

## Prerequisites

The following mathematics prerequisite requirement is for all students.

- Calculus through Differential Equations

The following prerequisites are for students with engineering undergraduate degrees in Civil, Environmental, Mechanical, or Chemical Engineering. Equivalent courses may be acceptable.

- CWR 4101C Hydrology (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- ENV 4120 Air Pollution Control (3 credit hours)
- ENV 4561 Environmental Engineering—Process Design (4 credit hours)

The following prerequisites are for students with undergraduate degrees in other Engineering disciplines.

- ENV 3001 Introduction to Environmental Engineering (3 credit hours)
- CWR 4101C Hydrology (3 credit hours)
- CWR 4203C Hydraulics (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- ENV 4120 Air Pollution Control (3 credit hours)
- ENV 4561 Environmental Engineering—Process Design (4 credit hours)
- Or equivalent courses

The following prerequisites are for students with appropriate Science or Math undergraduate degrees.

- ENV 3001 Introduction to Environmental Engineering (3 credit hours)
- CWR 3201 Engineering Fluid Mechanics (3 credit hours)
- CWR 4101C Hydrology (3 credit hours)
- CWR 4203C Hydraulics (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- EGN 3613 Engineering Economic Analysis (2 credit hours)

- ENV 4120 Air Pollution Control (3 credit hours)
- ENV 4561 Environmental Engineering—Process Design (4 credit hours)
- Or equivalent courses

### Required Courses—12 Credit Hours

- ENV 6015 Physical/Chemical Treatment Systems in Environmental Engineering (3 credit hours) or ENV 6016 Biological Treatment Systems in Environmental Engineering (3 credit hours) or ENV 6558 Industrial Waste Treatment (3 credit hours)
- ENV 6106 Theory and Practice of Atmospheric Dispersion Modeling\* (3 credit hours) or ENV 6126 Design of Air Pollution Controls\* (3 credit hours) or ENV 6347 Hazardous Waste Incineration (3 credit hours)
- ENV 5071 Environmental Analysis of Transportation Systems (3 credit hours) or ENV 6519 Aquatic Chemical Processes (3 credit hours) or ENV 6616 Receiving Water Impacts (3 credit hours) or EES 5318 Industrial Ecology (3 credit hours)
- Any CWR course at the 5000 or 6000 level (3 credit hours)

**Note:** Courses with an asterisk (\*) provide independent learning experiences. Nonthesis students are required to take at least one course with an asterisk.

### Elective Courses—12-18 Credit Hours (for thesis option) or 18 Credit Hours (for nonthesis option)

Thesis students take 12 credit hours of elective courses while nonthesis students take 18 hours of elective courses.

- Any of the appropriate ENV or CWR or appropriate graduate-level courses (5000 or 6000) with the consent of the student's adviser (3 credit hours each)

### Thesis—6 Credit Hours

#### Comprehensive Examination

An oral or written comprehensive examination is required for all nonthesis students. Please see the program director for information about this requirement.

Research and design projects are required in selected courses as noted above. Nonthesis

students must take at least one course that has an independent learning experience.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a résumé and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their graduate program.

The GRE is not required, however, taking the GRE is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

Those applying to the programs without a directly related undergraduate degree should closely check the prerequisites. For students with nontechnical undergraduate degrees, it is recommended that a second undergraduate degree in Environmental Engineering be completed before applying to graduate school.

Final articulation requirements will be determined by the department after students have been admitted and after discussions with their advisers.



Environmental Engineering Sciences MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

David Cooper PhD, PE  
 Professor  
 Program Director  
 gradcee@mail.ucf.edu  
 Telephone 407-823-2841  
 Department of Civil and Environmental  
 Engineering  
 Engineering II 211

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# Environmental Engineering MSEnvE

## PROGRAM DESCRIPTION

The Environmental Engineering MSEnvE program was created for students who have an undergraduate degree in environmental engineering or any other closely related degree in engineering. Applicants to the program are expected to be knowledgeable in topics including chemistry, process design, water resources, and air pollution. The program focuses on pollution control, pollution prevention, and the correction of pollution effects on natural and man-made environments.

The program is noted for its strong faculty research interests, and areas of study include drinking water treatment, wastewater treatment, solid and hazardous waste management, atmospheric pollution control and modeling, community noise abatement, and stormwater management. The program's overall mission is to prepare students for careers in environmental engineering with consulting firms; with industry; within federal, state, and local governments; and/or in higher education.

The program's overall mission is to prepare students

for Environmental Engineering careers in federal, state, and local governments; higher education; consulting; and industry. Other key objectives include:

- Producing graduates who have technical knowledge in critical areas of environmental engineering
- Providing a professional engineering education that challenges our graduates to think critically
- Forming and maintaining partnerships with industry, government agencies, and professional organizations
- Developing awareness of the changing environmental needs of society and the global environment.

## CURRICULUM

The Environmental Engineering MSEnvE program requires a minimum of 30 credit hours beyond the bachelor's degree and offers thesis and nonthesis options. Prerequisites are required depending upon the discipline of a student's bachelor's degree. Students choosing the thesis option must take 15 credit hours of required courses, 9 credit hours of electives, and 6 thesis credit hours. Students choosing the nonthesis option must take 15 credit hours of required courses, 15 credit hours of electives, and pass a comprehensive final examination before graduating.

### Total Hours Required for MSEnvE—30 Credit Hours Minimum beyond the Bachelor's Degree.

The Environmental Engineering MSEnvE program requires a minimum of 30 credit hours beyond the bachelor's degree and offers both thesis and nonthesis options. Prerequisites are required depending upon the discipline of a student's bachelor's degree. Students choosing the thesis option must take 15 credit hours of required courses, 9 credit hours of electives, and 6 thesis credit hours. Students choosing the nonthesis option must take 15 credit hours of required courses, 15 credit hours of electives, and pass a comprehensive final examination before graduating.

Students develop an individualized program of study with a faculty adviser.

The thesis option is required for all students supported on contracts and grants, as well as any

student receiving department financial support. The nonthesis option requires a comprehensive final oral and written examination as a requirement for graduation. This option is recommended only for part-time students on a limited access basis.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

The completion of prerequisite courses may also be required before students may begin program course work.

## Prerequisites

The following mathematics prerequisite requirement is for all students.

- Calculus through Differential Equations

The following prerequisites are for students with undergraduate degrees in Civil, Environmental, Mechanical, or Chemical Engineering. Equivalent courses may be acceptable.

- CWR 4101C Hydrology (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- ENV 4120 Air Pollution Control (3 credit hours)
- ENV 4561 Environmental Engineering—Process Design (4 credit hours)

The following prerequisites are for students with undergraduate degrees in other Engineering disciplines.

- ENV 3001 Introduction to Environmental Engineering (3 credit hours)
- CWR 4101C Hydrology (3 credit hours)
- CWR 4203C Hydraulics (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- ENV 4120 Air Pollution Control (3 credit hours)

- ENV 4561 Environmental Engineering—Process Design (4 credit hours)

The following prerequisites for students with appropriate Science or Math undergraduate degrees.

- ENV 3001 Introduction to Environmental Engineering (3 credit hours)
- CWR 3201 Engineering Fluid Mechanics (3 credit hours)
- CWR 4101C Hydrology (3 credit hours)
- CWR 4203C Hydraulics (3 credit hours)
- EES 4111C Biological Process Control (3 credit hours)
- EES 4202C Chemical Process Control (3 credit hours)
- EGN 3613 Engineering Economic Analysis (2 credit hours)
- ENV 4120 Air Pollution Control (3 credit hours)
- ENV 4561 Environmental Engineering—Process Design (4 credit hours)

## Required Courses—15 Credit Hours

- ENV 6015 Physical/Chemical Treatment Systems in Environmental Engineering (3 credit hours)
- ENV 6016 Biological Treatment Systems in Environmental Engineering\* (3 credit hours)
- ENV 6347 Hazardous Waste Incineration (3 credit hours) or ENV 6558 Industrial Waste Treatment (3 credit hours) or EES 5318 Industrial Ecology (3 credit hours)
- ENV 6106 Theory and Practice of Atmospheric Dispersion Modeling (3 credit hours) or ENV 6126 Design of Air Pollution Controls\* (3 credit hours)
- Any CWR course at the 5000 or 6000 level (3 credit hours)

**Note:** Courses with an asterisk (\*) provide an independent learning experience for students, consisting of a research or design project. Nonthesis students are required to take at least one of the courses with an asterisk.

## Elective Courses—9-15 Credit Hours

Thesis students take 9 credit hours of elective courses while nonthesis students take 15 hours of elective courses.

Courses that comprise the elective part of the program are selected in accordance with the general requirements of the College of Engineering and Computer Science and often include courses taken

from the following two sub-discipline areas:

- Environmental Specialization—Any of the appropriate ENV graduate-level courses (5000 or 6000) with the consent of the student's adviser
- Water Resources Specialization—Any of the appropriate CWR graduate-level courses (5000 or 6000) with the consent of the student's adviser

## Thesis—6 Credit Hours

### Comprehensive Examination

An oral and/or written comprehensive examination is required for successful completion of the degree. See the program director for details.

A research or design project serves as the independent learning experience. Nonthesis students are required to take at least one of the courses marked with an asterisk (\*), denoting an independent learning experience.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting applicants into their research programs.

The GRE is not required, however, taking the GRE

is highly recommended for students wishing to pursue a thesis. In order to be considered for any fellowships, a GRE score is required.

Those applying to the programs without a directly related undergraduate degree should closely check the prerequisites. Students with nontechnical undergraduate degrees are recommended to complete a second undergraduate degree in Environmental Engineering before applying to graduate school.

Final articulation requirements will be determined by the department after students have been admitted and after discussions with their advisers.

Environmental Engineering MSEnvE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Professor  
 Program Director  
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 Telephone 407-823-2841  
 Department of Civil and Environmental Engineering  
 Engineering II 211

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## Exceptional Education MA

- Varying Exceptionalities MA

## PROGRAM DESCRIPTION

**The Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep**

**informed of any program changes implemented to comply with new state requirements.**

The Master of Arts in Exceptional Education program is for noneducation majors or previously certified teachers in another content area. Graduates must be eligible for certification by the successful completion of the degree program in the area of exceptional student education (ESE) and achieving a passing score on the Florida certification exam. Graduates will also be eligible for reading and ESOL endorsement upon successful completion of the master's degree program, if not currently endorsed.

## CURRICULUM

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process.

Exceptional Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 mlittle@mail.ucf.edu  
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 Department of Child, Family and Community Sciences  
 ED 315C

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### *Exceptional Education MA*

# Varying Exceptionalities MA

## TRACK DESCRIPTION

The Master of Arts in Exceptional Education, Varying Exceptionalities program is for noneducation majors or previously certified teachers in another content area.

## CURRICULUM

### **Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The Varying Exceptionalities MA program requires a minimum of 36 credit hours beyond the bachelor's degree including 9 credit hours of core courses and 27 credit hours of specialization.

Individual Learning Projects, including research skills and action research, will be infused within courses of the specialization and a culminating comprehensive exam synthesizing current research will be completed to demonstrate mastery of skills, knowledge, and dispositions of standards from accrediting educational agencies.

### **Co-requisites—15 Credit Hours**

These courses are prescribed by Florida State Statutes for initial teacher preparation (ITP). Waiver or substitutions for co-requisites must meet departmental standards and be approved by the chair of the department and adviser.

- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues related to Education (3 credit hours)

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- RED 5147 Developmental Reading\* (3 credit hours)
- RED 5517 Classroom Diagnosis\* (3 credit hours)

\*Electives can be taken, if approved by adviser.

### Prerequisite—3 Credit Hours

- EEX 5051 Exceptional Children in the Schools (3 credit hours)

### Required Core Courses—9 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

### Elective Specialization Courses—21 Credit Hours

- EEX 6061 Instructional Strategies PreK-6 (3 credit hours)
- EEX 6065 Programming for Students with Disabilities at the Secondary Level (3 credit hours)
- EEX 6107 Teaching Spoken and Written Language (3 credit hours)
- EEX 6295 Assessment and Curriculum Prescriptions for the Exceptional Population (3 credit hours)
- EEX 6342 Seminar: Critical Issues in Special Education (3 credit hours)
- EEX 6524 Organization and Collaboration in Special Ed (3 credit hours)
- EEX 6612 Methods of Behavioral Management (3 credit hours)

### Internship—6 Credit Hours

- EEX 6946 Graduate Internship: ESE and Reading (6 credit hours)

### Comprehensive Exam and Portfolio Requirements

As culminating activities, students must complete the College of Education portfolio and comprehensive examinations. Please see your adviser for more information.

### Additional Program Requirements

Pass all applicable sections of the Florida Teacher Certification Examination.

The MA program requires a portfolio of both reflective practice and analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. In addition, an internship is required.

### ADMISSIONS

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process.

Varying Exceptionalities MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

Mary Little PhD  
 Program Director  
 mlittle@mail.ucf.edu  
 Telephone 407-823-3275  
 Department of Child, Family and Community  
 Sciences  
 ED 315C

College and Department committees and advisors.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university’s admission process. Courses used to gain initial state certification may not be transferred into an MEd. program.

Exceptional Education MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

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**Exceptional Education MEd**

- Varying Exceptionalities MEd

**PROGRAM DESCRIPTION**

The Exceptional Education MEd program prepares exceptional education teachers to work in programs serving Pre-K-12 students with disabilities. The program is designed for teachers already certified in exceptional student education (or other certification in special education) to enhance their knowledge, skills, and dispositions.

**CONTACT INFO**

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 mlittle@mail.ucf.edu  
 Telephone 407-823-3275  
 Department of Child, Family and Community  
 Sciences  
 ED 315C

**CURRICULUM**

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in Exceptional Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program with approvals from appropriate

\*\*\*\*\*  
*Exceptional Education MEd*

**Varying Exceptionalities MEd**

**TRACK DESCRIPTION**

The Master of Education in Exceptional Education, Varying Exceptionalities program prepares exceptional education teachers to work in programs serving Pre-K-12 students with disabilities.

**CURRICULUM**

**Total Hours Required for MEd—33-36 Credit Hours Minimum beyond the Bachelor’s Degree.**

The MEd program requires between 33-36 credit hours minimum beyond the bachelor’s degree including, 9-12 hours of core, and 24 credit hours

of specialization, and a culminating examination requirement.

Individual Learning Projects, including research skills and action research, will be infused within courses of the specialization and a culminating comprehensive exam synthesizing current research will be completed to demonstrate mastery of skills, knowledge, and dispositions of standards from accrediting educational agencies.

### **Core Courses—3 Credit Hours**

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

### **Thesis and Nonthesis Options—6 Credit Hours**

Students select one of the following options.

- EEX 6971 Thesis (6 credit hours)
- EEX 6909 Research Report (6 credit hours)
- Two electives approved by an adviser.

### **Specialization Courses—24 Credit Hours**

- EEX 6061 Instructional Strategies PreK-6 (3 credit hours)
- EEX 6065 Programming for Students with Disabilities at the Secondary Level (3 credit hours)
- EEX 6107 Teaching Spoken and Written Language (3 credit hours)
- EEX 6295 Assessment and Curriculum Prescriptions for the Exceptional Population (3 credit hours)
- EEX 6342 Seminar—Critical Issues in Special Education (3 credit hours)
- EEX 6524 Organization and Collaboration in Special Ed (3 credit hours)
- EEX 6612 Methods of Behavioral Management (3 credit hours)
- EEX 6863 Supervised Teaching Practicum with Exceptional Children or Elective approved by adviser (3 credit hours)

Please see your adviser for guidance regarding the selection of electives. Approved electives should lead to completion of endorsements in reading or ESOL, if not currently endorsed, and may include courses such as:

- TSL 5528 Teaching Language Minority Students in K-12 classrooms (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

- RED 5514 Classroom Diagnosis (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

Other courses may be approved by an adviser. Additional courses within the Exceptional Education program area are also acceptable as electives and include:

- ELD 6146 Instructional Strategies for Students with Learning Disabilities
- EBD 6226 Theory and Application for EH
- EMR 6365 Teaching Students with Mental Retardation

Please see complete listings of additional courses in Certificate Programs in Exceptional Education as possible courses for the elective area (e.g., Autism, Pre-K Handicapped, Special Education, etc.)

### **Comprehensive Examination**

The culminating experience includes a comprehensive examination synthesizing current research, which will be completed to demonstrate mastery of skills, knowledge, and dispositions of standards from accrediting educational agencies.

The MEd program requires a practicum. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide a current Florida Professional Teaching Certificate in Exceptional Education or have completed all the requirements for that Professional Teaching Certificate.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in Exceptional Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate

subject and/or grade range, may also be admitted to the MEd program with approvals from appropriate College and Department committees and advisors.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into an MEd. program.

Varying Exceptionalities MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Mary Little PhD  
 Program Director  
 mlittle@mail.ucf.edu  
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 Department of Child, Family and Community Sciences  
 ED 315C

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## Film and Digital Media MA

- Visual Language and Interactive Media MA

### PROGRAM DESCRIPTION

The Master of Arts in Film and Digital Media—Visual Language and Interactive Media is based on an apprenticeship model. Students explore new media under the guidance of a faculty member and collaborate with this faculty member in creative and research projects that foster a unique contribution characterized as innovative in approach.

The School of Film and Digital Media faculty have extensive professional and academic experience in areas spanning film, video, multimedia, interactive and web design, human centered interactive design, exhibition and theme park design, simulation and

training, game development, broadcast design and motion graphics, animation, visual language, immersive design environments, database design, e-commerce, and educational technology and community development.

## CURRICULUM

### Total Hours Required for MEd—33-36 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires between 33-36 credit hours minimum beyond the bachelor's degree including, 9-12 hours of core, and 24 credit hours of specialization, and a culminating examination requirement.

Individual Learning Projects, including research skills and action research, will be infused within courses of the specialization and a culminating comprehensive exam synthesizing current research will be completed to demonstrated mastery of skills, knowledge, and dispositions of standards from accrediting educational agencies.

### Core Courses—3 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

### Thesis and Nonthesis Options—6 Credit Hours

Students select one of the following options.

- EEX 6971 Thesis (6 credit hours)
- EEX 6909 Research Report (6 credit hours)
- Two electives approved by an adviser.

### Specialization Courses—24 Credit Hours

- EEX 6061 Instructional Strategies PreK-6 (3 credit hours)
- EEX 6065 Programming for Students with Disabilities at the Secondary Level (3 credit hours)
- EEX 6107 Teaching Spoken and Written Language (3 credit hours)
- EEX 6295 Assessment and Curriculum Prescriptions for the Exceptional Population (3 credit hours)
- EEX 6342 Seminar—Critical Issues in Special Education (3 credit hours)
- EEX 6524 Organization and Collaboration in Special Ed (3 credit hours)



- EEX 6612 Methods of Behavioral Management (3 credit hours)
- EEX 6863 Supervised Teaching Practicum with Exceptional Children or Elective approved by adviser (3 credit hours)

Please see your adviser for guidance regarding the selection of electives. Approved electives should lead to completion of endorsements in reading or ESOL, if not currently endorsed, and may include courses such as:

- TSL 5528 Teaching Language Minority Students in K-12 classrooms (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)
- RED 5514 Classroom Diagnosis (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

Other courses may be approved by an adviser. Additional courses within the Exceptional Education program area are also acceptable as electives and include:

- ELD 6146 Instructional Strategies for Students with Learning Disabilities
- EBD 6226 Theory and Application for EH
- EMR 6365 Teaching Students with Mental Retardation

Please see complete listings of additional courses in Certificate Programs in Exceptional Education as possible courses for the elective area (e.g., Autism, Pre-K Handicapped, Special Education, etc.)

### Comprehensive Examination

The culminating experience includes a comprehensive examination synthesizing current research, which will be completed to demonstrate mastery of skills, knowledge, and dispositions of standards from accrediting educational agencies.

The MEd program requires a practicum. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog.

Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Film and Digital Media MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

Jose Maunez-Cuadra PhD  
 Program Director  
 jmaunez@mail.ucf.edu  
 Telephone 407-823-1174  
 Latin American, Caribbean and Latino Studies  
 Colbourn Hall 406E

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*Film and Digital Media MA*

# Visual Language and Interactive Media MA

### TRACK DESCRIPTION

In the Master of Arts in Visual Language and Interactive Media students explore new media in creative and research projects that foster a unique contribution characterized as innovative in approach.

### CURRICULUM

**Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor’s Degree.**

During the first academic year, students take core courses as dictated by the student’s plan of study and electives suggested by their adviser. The MA graduate program coordinator is the adviser for all nonthesis students. The coordinator is also the adviser for all thesis students until a Digital Media faculty mentor agrees to work with the student. The

faculty mentor then becomes the student's graduate adviser.

In the second year, students who select the thesis option will complete core and required course work as well as thesis research. Thesis students must be accepted by a faculty member for supervision in order to carry out the required thesis study. Thesis option students are encouraged to begin this process immediately upon entering the program by meeting faculty who work in areas of interest complementary to the student's. Nonthesis option students will complete core, required course work and electives as recommended by the MA program coordinator.

Typically, students entering or continuing professional careers following the MA should select the nonthesis option. Those who plan to enter doctoral programs should select the thesis option.

### **Core Requirements—21 Credit Hours**

- DIG 5647 Science and Technology of Dynamic Media (3 credit hours)
- DIG 6137 Information Architecture (3 credit hours)
- DIG 6487 Principles in Visual Language (3 credit hours)
- DIG 6XXX Transmedia Story Creation (3 credit hours)
- DIG 6XXX Design for Media (3 credit hours)
- DIG 6XXX Previsualization and Concept Development (3 credit hours)
- DIG 6XXX Applied Interactive Story (3 credit hours)

### **Nonthesis Option—6 Credit Hours**

Students selecting the nonthesis option are required to complete 6 additional credit hours of required courses:

- DIG 6XXX Theory and Application of Interactive Performance (3 credit hours)
- DIG 5565 Digital Asset Management (3 credit hours)

### **Program Electives (Nonthesis Option)—9 Credit Hours**

Many graduate-level courses in the College of Arts and Humanities can be used as electives, based on an adviser-approved plan of study. In addition, other graduate courses may be used in place of those listed above, with permission of the adviser. These courses must be selected so as to ensure that at least

one-half of the courses in the student's plan of study are taken at the 6000 level.

### **Thesis Option—15 Credit Hours**

- DIG 6825 Digital Media Research Methods (3 credit hours)
- DIG 6918 Directed Research (3 credit hours)
- DIG 6XXX Digital Media Pre-Production (3 credit hours)
- DIG 6971 (6 credit hours)

Each candidate for the Master of Arts submits a thesis prospectus and preliminary bibliography on a topic selected in consultation with the adviser. The formal thesis is initiated by the preparation of a proposal that meets both departmental and university requirements for the thesis. Prior to enrollment into thesis credit hours, the adviser, in consultation with the student, designates a Thesis Committee to be further approved by the College Graduate Dean. This committee is chaired by the adviser and includes two or more additional faculty members from the Department of Digital Media.

The members of the student's thesis committee judge the proposal as the preliminary step to beginning the thesis. This committee must approve the Thesis Proposal before academic credit can accrue.

The thesis is a formal written document. The introduction cites similar, related, and antecedent work. The body explains the purposes of the project, the method of its production, and any evaluation that was performed. The conclusion includes plans for future work. The thesis also includes an archival copy of the resulting creative product. Both the thesis and the creative product must be delivered in digital form, acceptable by the UCF library according to its standards for digital dissertations and theses.

### **Thesis Defense**

In addition to a written thesis, the final step in completing the thesis requirement is an oral defense before the thesis committee. Candidates must present their creative or research work and explain its creation in an oral defense. These presentations are made to the student's committee in a public meeting that other faculty and students may attend.

### **Comprehensive Examinations**

Digital Media MA students must take a Comprehensive Examination. The process is

designed to evaluate both the students' basic knowledge and competencies, and their ability to synthesize and apply what they know in depth—that is, both the breadth and depth of student learning in the Program. It is not intended to test specific course content for which students have already been evaluated and graded. The exam is designed to test the student's ability to respond and substantiate the response in a professional and educated fashion.

The Comprehensive Examination consists of five general categories. Students answer four questions in a total maximum time of four hours. Students will be given the opportunity to select one question from any four of the five categories.

Students who elect the thesis option engage in independent learning through the design and implementation of original research in the thesis process. Students who pursue the comprehensive exam option experience independent learning through their individual preparation for comprehensive exams. All students engage in independent learning in every Digital Media core course. A research paper or project is required in each of these classes. The papers and projects provide independent learning by requiring students to design and carry out research projects and develop analytical papers, some of which are submitted to conferences and/or journals for peer review. Internships and independent studies are also common opportunities for independent learning in the Digital Media MA Program.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree in a media-related creative or technical field such as art, film, animation, theater, music, digital media, computer science, English or education in the arts, a written statement, and three letters of recommendation.

In addition to the general UCF graduate admission requirements, applicants to this must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in a media-related creative or technical field such as art, film, animation, theater, music, digital media, computer science, English or education in the arts.
- Official, competitive GRE score taken within the last five years.

- A written statement (not to exceed 250 words) describing the student's personal goals, objectives, and research interests in seeking the degree.
- Three letters of recommendation from former professors or employers who can address applicant's ability to undertake graduate-level courses.

Applicants will be notified if an interview is required.

Desirable background skills for this degree include computer and software literacy. Examples include mastery of Macintosh and PC workstations that are configured with a diverse range of hardware and software for production and editing of images and sound for stories and messages.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Visual Language and Interactive Media MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Apr 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Latin American, Caribbean and Latino Studies  
 Colbourn Hall 406E

## Forensic Science MS

- Forensic Analysis MS
- Forensic Biochemistry MS

### PROGRAM DESCRIPTION

The Master of Science in Forensic Science program has a strong biochemistry-DNA focus to serve the needs of supervisory personnel in DNA sections of crime laboratories, who are mandated by the national DNA Advisory Board to hold advanced academic degrees. The program offers two tracks: Forensic Analysis and Forensic Biochemistry.

Forensic Science is a burgeoning field of study that is partially driven by today's explosion of television programs and media coverage of advancements in the forensic sciences. However, beyond the media glamour is the very serious endeavor of applying science to the administration of law. The significant new challenge of countering terrorism through the forensic analysis of evidence leading to the identification of groups or individuals responsible for terrorist acts will play a significant role in driving the future need for highly trained forensic analysts, as will the need for new rapid and accurate DNA-based methods of identifying victims of mass disasters.

### CURRICULUM

The Forensic Science MS degree is comprised of 32 hours of study beyond the BS degree with intensive specialization in one of two tracks, Forensic Analysis or Forensic Biochemistry. The full-time student should complete the degree in two years of continuous full-time study, while nonresident students will generally be expected to finish the degree in four years. The degree program is research-based and requires original and independent research resulting in a written thesis to be defended before a committee consisting of two UCF faculty members and at least one other acknowledged forensic expert in the field.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Forensic Science MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

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### *Forensic Science MS*

## Forensic Analysis MS

### TRACK DESCRIPTION

The Forensic Analysis MS emphasizes the application of modern chromatographic, spectroscopic and micro-analytical techniques to problems in forensic science.

### CURRICULUM

#### **Total Hours Required for MS—32 Credit Hours Minimum beyond the Bachelor's Degree.**

Forensic Science is a highly interdisciplinary science, as reflected in the following program of study. The interdisciplinary nature of the program makes it imperative that students seek advising from faculty members on the content of courses to ensure that they have the appropriate background to master the course content. Up to 6 hours of graduate credit for advanced courses taken at another approved institution can be accepted with approval of the program director.

#### **Foundation Courses—9 Credit Hours**

- CHS 5502 Principles of Forensic Science (3 credit hours)

- CHS 5596 The Forensic Expert in the Courtroom (3 credit hours)
- CHS 6513 QA and Bioinformation (3 credit hours)

### Required Courses—16 Credit Hours

- STA 5206 Statistical Analysis (3 credit hours) or equivalent
- CHM 5235 Applied Molecular Spectroscopy (3 credit hours)
- CHM 6492 Atomic Spectroscopy (3 credit hours)
- CHS 6539C Forensic Analysis Laboratory (4 credit hours)
- CHS 6548 Explosives and Accelerants Analysis (3 credit hours)

### Thesis—7 Credit Hours Minimum

The grounding in scientific research methodology provided by the thesis requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional laboratories where they work. In either case, a member of the UCF Forensic Science faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the thesis.

The student's research adviser will select the thesis examination committee, consisting of two UCF faculty members and at least one other acknowledged forensic expert in the field. The student will present his/her thesis for examination by the committee. The thesis must be judged worthy of publication by the review committee and may not be submitted for examination until approved. For nonresident students, the thesis adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

- CHM 6971 Thesis Research (7 credit hours)

Each student in the Forensic Science MS program is required to present a written thesis to their committee. The committee reviews the thesis and examines the student on the content and quality of the research described in the thesis. The research described in the thesis is conducted independently by the student with guidance from the supervising faculty member, and as such, the thesis represents a significant independent learning component of the Forensic Science MS degree.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree in Forensic Science or another related Physical Science, three letters of recommendation, and a personal statement.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's in Forensic Science or another physical science, based on at least 30 hours of college-level science subjects, that provides the background required to be successful in the proposed program. Acceptable non-Forensic Science BS degrees may include Chemistry, Physics, Molecular Biology, and Chemical Engineering.
- Three letters of recommendation. If the applicant is employed in a forensic laboratory and wishes to continue working in that laboratory while a distance learner in the Forensic Science MS program, one letter should come from his/her supervisor and should express their willingness to allow the student to use the laboratory instrumentation for their thesis research. Otherwise, the student will be unable to complete the research component of the degree.
- Short (one page) statement describing why the applicant wants to pursue an advanced degree in Forensic Science.

The Forensic Science Graduate Committee will evaluate the background of potential students applying for admission into the program.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Forensic Analysis MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Program Director  
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 Department of Chemistry  
 Chemistry 117

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### *Forensic Science MS*

# Forensic Biochemistry MS

## TRACK DESCRIPTION

The Forensic Biochemistry MS has a strong biochemistry-DNA focus to serve the needs of supervisory personnel in DNA sections of crime laboratories. National DNA standards mandate that such personnel have advanced degrees.

## CURRICULUM

### Total Hours Required for MS—32 Credit Hours Minimum beyond the Bachelor's Degree.

Forensic Science is a highly interdisciplinary science, as reflected in the following program of study. The interdisciplinary nature of the program makes it imperative that students seek advising from faculty members on the content of courses to ensure that they have the appropriate background to master the course content. Up to 6 hours of graduate credit for advanced courses taken at another approved institution can be accepted with approval of the program director.

## Foundation Courses—9 Credit Hours

- CHS 5502 Principles of Forensic Science (3 credit hours)
- CHS 5596 The Forensic Expert in the Courtroom (3 credit hours)
- CHS 6513 QA and Bioinformation (3 credit hours)

## Required Courses—16 Credit Hours

- CHS 6535L Forensic Analysis of Biological Materials (3 credit hours)
- CHS 6535 Forensic Molecular Biology (3 credit hours)
- CHS 6536 Population Genetics and Genetic Data Analysis (3 credit hours)
- PCB 5665C Human Genetics (4 credit hours)
- BCH 6740 Advanced Biochemistry (3 credit hours)

## Thesis—7 Credit Hours Minimum

The grounding in scientific research methodology provided by the thesis requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional laboratories where they work. In either case, a member of the UCF Forensic Science faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the thesis.

The student's research adviser will select the thesis examination committee, consisting of two UCF faculty members and at least one other acknowledged forensic expert in the field. The student will present his/her thesis for examination by the committee. The thesis must be judged worthy of publication by the review committee and may not be submitted for examination until approved. For nonresident students, the thesis adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

- CHM 6971 Thesis Research (7 credit hours)

Each student in the Forensic Science MS program is required to present a written thesis to their committee. The committee reviews the thesis and examines the student on the content and quality of the research described in the thesis. The research described in the thesis is conducted independently by the student with guidance from the supervising faculty member, and as such, the thesis represents a significant independent learning component of the Forensic Science MS degree.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, two letters of recommendation, a résumé, and a personal statement.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.
- Résumé.
- Personal statement explaining why the applicant wants to pursue advanced studies in forensic biochemistry.

The Forensic Science Graduate Committee will evaluate the background of potential students applying for admission into the program.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Forensic Biochemistry MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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Department of Chemistry  
Chemistry 117

## Health Sciences MS

- Health Services Administration MS

## PROGRAM DESCRIPTION

The College of Health and Public Affairs offers a Master of Science degree in Health Sciences with a track in Health Services Administration. The Health Services Administration track is offered through the Department of Health Management and Informatics and is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME).

## CURRICULUM

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Health Sciences MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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Program Director  
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Department of Health Management and Informatics  
Health and Public Affairs

*Health Sciences MS*

# Health Services Administration MS

## TRACK DESCRIPTION

The Department of Health Professions offers a Master of Science degree in Health Services Administration, an accredited program by the Commission on Accreditation of Healthcare Management Education (CAHME).

## CURRICULUM

### Total Hours Required for Health Services Administration Track MS—51 Credit Hours Minimum beyond the Bachelor's Degree.

Students must meet with their academic adviser to plan a program of study. The Health Services Administration track requires a minimum of 51 credit hours beyond the bachelor's degree, with 48 credit hours of required courses, and three credit hours of an elective. Students must pass a comprehensive examination at the end of their studies. The degree program also requires 9 credit hours of prerequisite courses which may be taken after admission into the program. Knowledge of personal computers is required.

The HSA Program is attractive to working professionals with its flexibility in course offerings and times and locations of courses. Students have the ability to choose from multiple campuses to complete their degree and courses are offered via the web, during evening hours, and often on weekends.

### Prerequisite Courses—9 Credit Hours

Completion the following course work, including knowledge of the U.S. health care systems, finance, and economics is required. These recommended courses may be taken after admission to the program.

- HSA 3170 Health Care Finance or equivalent (3 credit hours) OR HSA 5177 Foundation of Healthcare Finance (3 credit hours)
- HSA 3430 Health Care Economics or equivalent (3 credit hours)

- HSA 4702 Health Sciences Research Methods or equivalent (3 credit hours)

### Required Courses—48 Credit Hours

- HSA 5198 Health Care Decision Sciences and Knowledge Management (3 credit hours)
- HSA 6108 Health Care Organization and Management II (3 credit hours)
- HSA 6119 Health Care Organization and Management (3 credit hours)
- HSA 6128 Health Care Services Management (3 credit hours)
- HSA 6155 Health Economics and Policy (3 credit hours)
- HSA 6185 Health Care Human Resources (3 credit hours)
- HSA 6385 Health Care Quality Management (3 credit hours)
- HSA 6925 Capstone in HSA (3 credit hours; see description below)
- HSA 6946 Internship (3 credit hours)\*
- HSC 6636 Issues and Trends in the Health Professions (3 credit hours)
- HSC 6911 Scientific Inquiry in the Health Profession (3 credit hours)
- PHC 6000 Epidemiology (3 credit hours)
- PHC 6146 Health Planning and Policy (3 credit hours)
- PHC 6160 Health Care Finance (3 credit hours)
- PHC 6164 Health Care Finance II (3 credit hours)
- PHC 6420 Case Studies in Health Law (3 credit hours)

\* Students with three or more years of relevant work experience as defined by the director may substitute a second elective for the Internship course.

### Elective Courses—3 Credit Hours

Choose one course from the following list:

- HSC 6656 Health Care Ethics (3 credit hours)
- HSA 6112 International Health Care (3 credit hours)
- HSA 6511 Health Care Leadership (3 credit hours)
- PUP 6607 Politics of Health Care (3 credit hours)
- NGR 5660 Health Disparities: Issues and Strategies (3 credit hours)
- ENC 5237 Writing for the Business Professional (3 credit hours)
- GEY 5624 Gerontology: An Interdisciplinary Approach (3 credit hours)



- Or an alternative graduate-level course at the discretion of the Program Director

## Comprehensive Examination Experience

A final written examination experience is required of all students in the program. This requirement will be met through successful completion of the capstone course (HSA 6925). To successfully pass this course, students must earn a grade of “A” or “B.”

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible research projects, scholarly papers, internships, or our capstone experience also contribute to the self-development of our students. The research study and final report will focus on reviewing and analyzing contemporary research in a student’s particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

## ADMISSIONS

In addition to general admission requirements, applicants must provide a statement indicating how the Health Science master’s program will enhance career goals and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Statement indicating how the Health Science master’s program will enhance career goals.
- Résumé (no longer than two pages).

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past academic performance, work experience, and the match of the program with career goals. The Health Services Administration track accepts the most qualified students. Not all students who apply may be accepted, even if minimum requirements are met.

Students are admitted to the Health Services Administration track in the fall and spring semesters. Full- and part-time plans of study are available for both fall and spring admission cycles.

Health Services Administration MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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Program Director  
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Department of Health Management and Informatics  
Health and Public Affairs

## History MA

- Accelerated Graduate Program in History MA
- Public History MA

## PROGRAM DESCRIPTION

The Master of Arts in History is designed to serve the needs of a variety of students, including those who plan to pursue a PhD, those wishing to improve their proficiency as secondary school teachers, and those who seek to enrich their intellectual lives. The program offers Public History and Accelerated Undergraduate to Graduate tracks.

Students are served by departmental members whose areas of research include classical history, early Christianity, African history, American cultural and social history, local history, the South, the American Civil War, the American frontier, women and gender roles, Asian history, Middle-Eastern history, twentieth-century mass movements, Nazism and anti-Semitism in Central Europe, Latin American history, and European history, as well as other areas.

## CURRICULUM

The History MA program requires a minimum of 36 credit hours beyond the bachelor’s degree, including 12 credit hours of required courses, 18 credit hours

in an area of concentration, and 6 credit hours of electives outside of the area of concentration. 18 hours of the 36 required must be at the 6000 level.

### **Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor’s Degree.**

Students must pass a foreign language competency test, pass a written examination in two fields, and successfully complete and defend their thesis. No graduate credit is given for any grade lower than “B-”.

#### **Required Courses—6 Credit Hours**

- HIS 6159 Historiography (3 credit hours)
- HIS 6905 History Capstone Class (3 credit hours)

#### **Specialization Courses—18 Credit Hours**

- Eastern Hemisphere: African, Asian, European, or Middle Eastern; or
- Western Hemisphere: Caribbean, North American, or South American

#### **Elective Courses—6 Credit Hours**

Students should choose history courses outside their area of specialization.

#### **Thesis—6 Credit Hours Minimum**

- HIS 6971 Thesis (6 credit hours)

#### **Foreign Language Competency**

Students will also be expected to demonstrate a reading competency in one foreign language. The foreign language examination must be completed one semester prior to the thesis defense.

#### **Examination Requirements/Capstone Course**

Each candidate for the Master of Arts in History must pass written examinations in two fields upon conclusion of regular course work and before beginning a thesis. These examinations must be taken and passed as part of the requirements for the capstone course. Students are provided two attempts at successfully passing the examinations. Each student will also submit a thesis prospectus and preliminary bibliography, which the three members of the student’s thesis committee judge acceptable

as the preliminary step to beginning the thesis. An oral defense of the written exams and the thesis prospectus and bibliography is also a requirement of the capstone course.

#### **Thesis Defense**

The final step in completing the thesis requirement is a one-hour oral defense before the thesis committee.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

History MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### **CONTACT INFO**

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Colbourn Hall 415

*History MA*

# Accelerated Graduate Program in History MA

## TRACK DESCRIPTION

The Accelerated Undergraduate/Graduate program in History allows highly qualified undergraduate majors in history to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program.

## CURRICULUM

The BA is awarded after completion of 36 hours of history courses and all other university requirements, and the MA is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see history major requirements in the Undergraduate Catalog).

The departmental residency requirement is at least 18 semester hours of regularly scheduled 3000- or 4000-level courses taken from the UCF History Department. Students may substitute up to 9 hours of 5000- or 6000-level courses to meet this requirement.

## Additional Notes on the Accelerated Undergraduate and Graduate Program in History

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B-" in each undergraduate and graduate history course for them to be counted toward the major.
- Students must compile a portfolio of their written work in history (completed inside and outside the classroom).
- Students admitted to the combined bachelor's/master's program may take one 5000-level course the first semester of their senior year.
- After successfully completing one 5000-level course, students will be eligible to take HIS 6159 Historiography and another 5000-level

course or the 6000-level seminar following the 5000-level colloquium they have already completed.

- Students may substitute these 9 hours of graduate-level work for 9 hours of 3000- or 4000-level undergraduate work
- Students need to pay fees at the graduate rate for the graduate courses they take.

## Schedule for Students Enrolled Full-time

- Students complete 9 hours of graduate-level courses in their senior year.
- Students enroll in at least 3 credit hours of graduate-level courses the summer after they receive their bachelor's degree.
- Students enroll in 9 hours of graduate-level courses in both spring and fall semesters during their master's program.
- Students complete the Capstone course, pass their preliminary exams, and fulfill their foreign language requirement by the end of their first year in the master's program.
- Students complete and defend a master's thesis in 6 hours.

## Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

## Graduate Requirements

The History MA program requires a minimum of 36 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, 18 credit hours in an area of concentration, and six credit hours of electives outside of the area of concentration. Students must pass a foreign language competency test, pass a written examination in two fields, and successfully complete and defend their thesis. No graduate credit is given for any grade lower than "B-."

## Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

Students must pass a foreign language competency test, pass a written examination in two fields, and successfully complete and defend their thesis. No graduate credit is given for any grade lower than "B-."

**Required Courses—6 Credit Hours**

- HIS 6159 Historiography (3 credit hours)
- HIS 6905 History Capstone Class (3 credit hours)

**Specialization Courses—18 Credit Hours**

- Eastern Hemisphere: African, Asian, European, or Middle Eastern; or
- Western Hemisphere: Caribbean, North American, or South American

**Elective Courses—6 Credit Hours**

Students should choose history courses outside their area of specialization.

**Thesis—6 Credit Hours Minimum**

- HIS 6971 Thesis (6 credit hours)

**Foreign Language Competency**

Students will also be expected to demonstrate a reading competency in one foreign language. The foreign language examination must be completed one semester prior to the thesis defense.

**Examination Requirements/Capstone Course**

Each candidate for the Master of Arts in History must pass written examinations in two fields upon conclusion of regular course work and before beginning a thesis. These examinations must be taken and passed as part of the requirements for the capstone course. Students are provided two attempts at successfully passing the examinations. Each student will also submit a thesis prospectus and preliminary bibliography, which the three members of the student's thesis committee judge acceptable as the preliminary step to beginning the thesis. An oral defense of the written exams and the thesis prospectus and bibliography is also a requirement of the capstone course.

**Thesis Defense**

The final step in completing the thesis requirement is a one-hour oral defense before the thesis committee.

**ADMISSIONS**

Students apply for admission to the combined

undergraduate and graduate program at the end of their junior year or after 12 hours of upper-level history course work.

The accelerated undergraduate/graduate program in history allows highly qualified undergraduate majors in history to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program. Students apply for admission to the combined undergraduate and graduate program at the end of their junior year or after 12 hours of upper-level history course work.

**Rather than submitting an online application, applicants must submit hard copy (paper) applications directly to the Department of History. Please contact the Department of History for the appropriate application form.**

In addition to the general UCF graduate admissions requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A 3.5 GPA or higher in history courses.
- Official, competitive GRE score taken within the last five years.
- An essay indicating reasons for wishing to complete the combined bachelor's/master's program.
- Three letters of recommendation from the History Department faculty.
- A score of at least 233 (computer-based test) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Students will be formally admitted to the master's program following receipt of the bachelor's degree.

Accelerated Graduate Program in History MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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.....  
*History MA*

**Public History MA****TRACK DESCRIPTION**

The Master of Arts in Public History is designed to serve the needs of a variety of students, including those who plan to pursue a PhD, those wishing to improve their proficiency as secondary school teachers, and those who seek to enrich their intellectual lives.

**CURRICULUM****Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The Public History track requires a minimum of 36 credit hours beyond the bachelor's degree, including 15 credit hours of required courses, 15 credit hours in the area of concentration, which includes 9 credit hours of public history courses or internships, and 6 credit hours of elective courses taken outside of the area of concentration. All students must pass a foreign language competency test, pass a written examination in two fields, and successfully complete and defend their thesis. No graduate credit given for any grade lower than "B-."

**Required Courses—9 Credit Hours**

- HIS 5067 Introduction to Public History (3 credit hours)
- HIS 6159 Historiography (3 credit hours)
- HIS 6905 History Capstone Class (3 credit hours)

**Specialization Courses—21 Credit Hours****Western Hemisphere Concentration—15 Credit Hours**

- Students must take 9 credit hours of Public History courses or internships.

**Eastern Hemisphere Concentration—6 Credit Hours**

- Course work should be chosen outside a student's area of concentration and so that at least one-half of the required credit hours are taken at the 6000 level.

**Thesis—6 Credit Hours Minimum**

- HIS 6971 Thesis/Research Project (6 credit hours)

**Foreign Language Competency**

Students will also be expected to demonstrate a reading competency in one foreign language. The foreign language examination must be completed one semester prior to the thesis defense.

**Examination Requirements/Capstone Course**

Each candidate for the Master of Arts in History must pass written examinations in two fields upon conclusion of regular course work and before beginning a thesis. These examinations must be taken and passed as part of the requirements for the capstone course. Students are provided two attempts at successfully passing the examinations. Each student will also submit a thesis prospectus and preliminary bibliography, which the three members of the student's thesis committee judge acceptable as the preliminary step to beginning the thesis. An oral defense of the written exams and the thesis prospectus and bibliography is also a requirement of the capstone course.

**Thesis Defense**

The final step in completing the thesis requirement is a one-hour oral defense before the thesis committee.

## **Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.**

Students must pass a foreign language competency test, pass a written examination in two fields, and successfully complete and defend their thesis. No graduate credit is given for any grade lower than "B-".

### **Required Courses—6 Credit Hours**

- HIS 6159 Historiography (3 credit hours)
- HIS 6905 History Capstone Class (3 credit hours)

### **Specialization Courses—18 Credit Hours**

- Eastern Hemisphere: African, Asian, European, or Middle Eastern; or
- Western Hemisphere: Caribbean, North American, or South American

### **Elective Courses—6 Credit Hours**

Students should choose history courses outside their area of specialization.

### **Thesis—6 Credit Hours Minimum**

- HIS 6971 Thesis (6 credit hours)

### **Foreign Language Competency**

Students will also be expected to demonstrate a reading competency in one foreign language. The foreign language examination must be completed one semester prior to the thesis defense.

### **Examination Requirements/Capstone Course**

Each candidate for the Master of Arts in History must pass written examinations in two fields upon conclusion of regular course work and before beginning a thesis. These examinations must be taken and passed as part of the requirements for the capstone course. Students are provided two attempts at successfully passing the examinations. Each student will also submit a thesis prospectus and preliminary bibliography, which the three members of the student's thesis committee judge acceptable as the preliminary step to beginning the thesis. An oral defense of the written exams and the thesis prospectus and bibliography is also a requirement of the capstone course.

## **Thesis Defense**

The final step in completing the thesis requirement is a one-hour oral defense before the thesis committee.

## **ADMISSIONS**

In addition to meeting general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a bachelor's degree in history or an equivalent, a statement of research interests and goals, and three letters of recommendation; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in History (or an equivalent).
- A 3.0 GPA in history courses.
- Official, competitive GRE score taken in the last five years.
- A written statement describing personal goals and objectives in seeking a graduate degree in history.
- Three letters of recommendation from former professors who can address applicant's ability to undertake graduate-level history courses.
- A score of at least 233 (computer-based test) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Applicants who hold an undergraduate degree in History but do not have a GPA of 3.0 in all work attempted while registered as an undergraduate student, or while registered as an upper-division undergraduate student (normally based on the last sixty attempted semester hours), or a 3.0 GPA in their history courses, or do not have a competitive score on the combined verbal-quantitative sections of the GRE may take up to 9 hours of graduate courses as non-degree-seeking students. To be admitted into the graduate program, however, they must earn a 3.3 GPA or higher in the graduate-level history courses they take under this status.

Applicants who meet all of the above requirements but do not have an undergraduate degree in History must complete 12 hours of history course work at the 3000 and 4000 level, with a 3.25 GPA in these courses, before entering the graduate program. These courses will not count toward the graduate degree. The History Department Graduate Committee can waive this requirement, in whole or in part, when applicants present evidence that they are capable of successfully completing graduate history courses, either by submitting a portfolio documenting relevant past work or by providing a sample of their own written work, which indicates that they have the research and writing skills needed to do graduate-level work in history.

If, in addition, applicants without an undergraduate degree in History do not meet one of the other requirements for entry, they must complete 12 hours of course work at the 3000 and 4000 level with a 3.5 GPA before they can be admitted to the graduate program.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Public History MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Department of History  
Colbourn Hall 415

# Hospitality and Tourism Management MS

## PROGRAM DESCRIPTION

The Master of Science in Hospitality and Tourism Management enables students to build on their strengths and interests, broadens their knowledge of the industry; sharpens their management skills; and incorporates their professional and extracurricular experiences. The Rosen College of Hospitality Management candidates are especially attractive hires for hospitality and tourism organizations around the globe.

The typical Hospitality and Tourism Management MS candidate:

- Works as a professional for a leading hospitality organization within the central Florida region or beyond.
- Holds an undergraduate degree in hospitality, business management, or a related discipline.
- Realizes that advanced educational training is required to be competitive in this growing and vibrant hospitality and tourism industry.

The program offers thesis and nonthesis options. The thesis option is intended for students who are interested in the scientific study of the various aspects of the hospitality and tourism industry and who may anticipate pursuing a doctoral degree or a professional research position. The nonthesis option is intended for students who anticipate a leadership position in the hospitality and tourism industry. The emphasis of the nonthesis option is on course work and practical experience.

The Rosen College of Hospitality Management aims to provide students with an outstanding graduate hospitality management educational experience, and serve other stakeholders with continuing education, research, and service. The College is committed to UCF goals by providing intellectual leadership through quality hospitality education, international prominence by means of educational and research programs, promotion of a global perspective, nurturing inclusiveness and diversity, and partnerships with local, national, and international hospitality and tourism constituencies.

## CURRICULUM

The Hospitality and Tourism Management MS program requires a minimum of 36 credit hours for students who choose the thesis option, and 39 credit hours for students who choose the nonthesis option. For both options, 27 credit hours are from required core courses. The thesis option must also take three credit hours of a restricted elective and six credit hours of thesis work. Students in the nonthesis option must take 12 credit hours of restricted electives.

### Total Required Hours for MS—36-39 Credit Hours Minimum Beyond the Bachelor's Degree.

Candidates for the MS degree are constantly challenged with numerous requirements to engage in independent learning throughout the program of study through special projects and papers. For example, the capstone course, HFT 6296 Hospitality/Tourism Strategic Issues requires a critical strategic audit project and a reflective paper. The project demonstrates a range of cross-discipline knowledge and analytical skills to perform an executive level analysis of an enterprise. The reflective paper has guiding questions are subjective in nature and successful completion requires a thorough, insightful, and well articulated document that describes the learner's value proposition to industry and society.

### Core Courses—27 Credit Hours

- HFT 6245 Managing Hospitality and Guest Services Organizations (3 credit hours)
- HFT 6251 The Management of Lodging Operations (3 credit hours)
- HFT 6710 International Tourism Management (3 credit hours)
- FSS 6365 Management of Food Service Operations (3 credit hours)
- HFT 6477 Financial Analysis of Hospitality Enterprises (3 credit hours)
- HFT 6596 Strategic Marketing in Hospitality and Tourism (3 credit hours)
- HFT 6228 Critical Issues in Hospitality Human Resources (3 credit hours)
- HFT 6586 Research Methods in Hospitality and Tourism (3 credit hours)
- HFT 6296 Hospitality/Tourism Strategic Issues (3 credit hours)

### Restricted Electives—3-12 Credit Hours

The restricted electives in the thesis option consist of six credit hours of thesis research, and one course (three credit hours) from the specified list below. The restricted electives in the non-thesis option consist of four courses (12 credit hours) from the list. A maximum of three credit hours of restricted elective may be taken as an independent study.

- HFT 6446 Hospitality/Tourism Information Technology (3 credit hours)
- HFT 6533 Hospitality/Tourism Industry Brand Management (3 credit hours)
- HFT 6608 Hospitality/Tourism Law and Ethics Seminar (3 credit hours)
- HFT 6476 Feasibility Studies for the Hospitality/Tourism Enterprises (3 credit hours)
- HFT 6259 Case Studies in Lodging Management (3 credit hours)
- HFT 6319 Convention Center Management (3 credit hours)
- HFT 6636 Hospitality/Tourism Risk Management (3 credit hours)
- HFT 6267 Case Studies in Restaurant Management (3 credit hours)
- HFT 6347 Advanced Vacation Ownership Resort Planning (3 credit hours)
- HFT 6526 Vacation Ownership Resort Sales Management (3 credit hours)
- HFT 6528 Convention and Conference Sales and Services (3 credit hours)
- HFT 6707 Travel and Tourism Economics (3 credit hours)
- HFT 6797 Event Administration (3 credit hours)
- HFT 6247 Organizational Communication in Hospitality/Tourism Enterprises (3 credit hours)

### Thesis Option - 6 Credit Hours

- HFT 6971 Thesis (research for thesis option only; 6 credit hours)

### Culminating Experience

An appropriate culminating academic experience is required of all master's degree candidates.

For those students on the thesis option, a thesis defense is required. Thesis defenses will be approved by a majority vote of the thesis advisory committee. Further approval is required by the Dean of the Rosen College of Hospitality Management and the UCF College of Graduate Studies before final acceptance of the thesis in fulfilling degree requirements.



For students in the nonthesis option, an appropriate culminating academic experience is the successful completion of HFT 6296 Hospitality/Tourism Strategic Issues, a required course in the curriculum that is designated as a capstone course. This capstone course acquaints students with the principles of strategic decision-making in various sectors of the tourism and hospitality industry. Students are required to apply skills, knowledge, and understanding in order to identify areas of concern encountered by managers responsible for formulating and implementing operational strategies.

For students in the nonthesis option, an appropriate culminating academic experience is the successful completion of HFT 6296 Hospitality/Tourism Strategic Issues, a required course in the curriculum that is designated as a capstone course. This capstone course acquaints students with the principles of strategic decision-making in various sectors of the tourism and hospitality industry. Students are required to apply skills, knowledge, and understanding in order to identify areas of concern encountered by managers responsible for formulating and implementing operational strategies.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is restricted each semester to individuals showing high promise of success in postgraduate studies. In addition to the requirements noted below, other indicators of promise include the applicant's extracurricular activities, work experience, job responsibilities, and leadership experience, which will be considered in making admissions decisions.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive score on the GRE or GMAT taken within the last five years.
- Goal statement.
- Résumé.
- Three letters of recommendation.

## Prerequisites

For students with undergraduate majors in Hospitality Management or Business Administration, there will be no undergraduate course prerequisites, provided they have successfully completed an undergraduate course in statistics with a grade of "C" or higher.

For industry professionals with an undergraduate degree in a discipline other than Hospitality Management or Business Administration, the following three undergraduate courses are required to be completed with a grade of "B" or higher within the first year of course work in the program:

- HFT 3540 Guest Services Management I
- HFT 4295 Strategic Management in Hospitality Industry
- HFT 3431 Hospitality Industry Managerial Accounting

These students would also have to have successfully completed an undergraduate course in statistics with a grade of "C" or higher within the first year of course work in the program.

For applicants with undergraduate degrees in disciplines other than Hospitality Management or Business Administration and no significant hospitality industry experience, the following five undergraduate courses are required to be completed with a grade of "B" or higher within the first year of course work in the program:

- HFT 1000 Introduction to the Hospitality and Tourism Industry
- HFT 3540 Guest Services Management I
- HFT 4295 Strategic Management in Hospitality Industry
- HFT 2403 Hospitality Industry Financial Accounting
- HFT 3431 Hospitality Industry Managerial Accounting

These students would also have successfully completed an undergraduate course in statistics with a grade of "C" or higher within the first year of course work in the program.

Hospitality and Tourism Management MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Rosen School of Hospitality Management  
 RCH 270

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# Industrial and Organizational Psychology MS

## PROGRAM DESCRIPTION

The Master of Science in Industrial and Organizational Psychology program is located in Seminole County at the newly created Heathrow center. This center is approximately 28 miles from the main campus. The program focuses on the application of psychological principles to organizations and emphasizes the major areas of selection and training of employees, applied theories of organizational behavior including models of motivation, job satisfaction, and productivity; test theory and construction; assessment center technology; statistics and experimental design and a variety of current topics. Industrial and Organizational Psychology graduates are involved in many issues of critical importance to society including fairness in the selection and treatment of employees, the creation of work environments that maximize the satisfaction and productivity of employees, and the study of technological influences on human performance.

## CURRICULUM

The MS degree program in Industrial and Organizational Psychology is a four-semester program for full-time students. Both thesis and nonthesis options are offered. Both options consist of a minimum of 40 semester hours of work. The required courses, which are scheduled primarily in the evenings to accommodate working students, are as follows.

### Total Required Hours for MS—40 Credit Hours Minimum beyond the Bachelor's Degree.

#### Nonthesis Option

#### Required Course Work—35 Credit Hours

- INP 6058 Job and Task Analysis (3 credit hours)
- INP 6080 Advanced Practice in Industrial and Organizational Psychology (3 credit hours)
- INP 6094 Current Topics in Industrial and Organizational Psychology (3 credit hours)
- INP 6215 Assessment Centers and Leadership (3 credit hours)
- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- INP 6605 Training and Performance Appraisal (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- PSY 6308 Psychological Testing I (4 credit hours)
- PSY 6318 Applied Testing and Selection (3 credit hours)
- SOP 5059 Advanced Social Psychology (3 credit hours)
- INP 6072 Applied Research Methods in Industrial and Organizational Psychology (3 credit hours)

#### Practicum—3 Credit Hours

Practicum assignments serve to provide the student with experience in an applied setting while also aiding the organization in which the practicum occurs to meet some specific project need. Practicum possibilities generated by the I/O faculty and students may involve settings in private industry, federal, state, or local government, educational institutions, or consulting firms.

Practicum assignments involve one-semester commitments ranging from 12 to 15 hours per week on the part of the student. Depending on the nature of the assignment, this time may be distributed in a variety of ways among the organization, library, field work, etc.

Practicum placements are initiated with a behavioral agreement between the graduate student and the organization. Behavioral agreements and performance objectives are jointly decided by the supervising faculty member, the organization representative, and the student. Full-time students are typically assigned practicum projects for the fall or spring terms of their second year.

- INP 6945C Industrial Psychology Practicum I (3 credit hours)

### **Research—2 Credit Hours**

- INP 6908 Directed Independent Studies (2 credit hours)

Students electing the nonthesis option are expected to materially participate in the conduct of research under the supervision of a faculty adviser and in the preparation of a research report of sufficient quality to allow submission for publication or presentation at a national professional association conference. The research report will be evaluated jointly by the faculty adviser and the program director.

### **Thesis Option**

#### **Required Course Work—29 Credit Hours**

- INP 6058 Job and Task Analysis (3 credit hours)
- INP 6215 Assessment Centers and Leadership (3 credit hours)
- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- INP 6605 Training and Performance Appraisal (3 credit hours)
- INP 6080 Advance Practice in Industrial and Organizational Psychology (3 credit hours)
- PSY 6216 Advanced Research Methodology I (4 credit hours)
- PSY 6308 Psychological Testing I (4 credit hours)
- PSY 6318 Applied Testing and Selection (3 credit hours)
- INP 6072 Applied Research Methods in Industrial and Organizational Psychology (3 credit hours)

### **Elective Course Work—3 Credit Hours**

Choose one course from the following:

- SOP 5059 Advanced Social Psychology (3 credit hours)
- INP 6094 Current Topics in Industrial and Organizational Psychology (3 credit hours)
- INP 6945C Industrial Psychology Practicum I (3 credit hours)

### **Practicum**

Practicum assignments serve to provide the student with experience in an applied setting while also aiding the organization in which the practicum occurs to meet some specific project need. Practicum possibilities generated by the I/O faculty and students may involve settings in private industry, federal, state, or local government, educational institutions, or consulting firms.

Practicum assignments involve one-semester commitments ranging from 12 to 15 hours per week on the part of the student. Depending on the nature of the assignment, this time may be distributed in a variety of ways among the organization, library, field work, etc.

Practicum placements are initiated with a behavioral agreement between the graduate student and the organization. Behavioral agreements and performance objectives are jointly decided by the supervising faculty member, the organization representative, and the student. Full-time students are typically assigned practicum projects for the fall or spring terms of their second year.

### **Thesis—8 Credit Hours**

- INP 6971 (8 credit hours)

Students electing the thesis option are expected to conduct independent research. Students electing the nonthesis option are expected to materially participate in the conduct of research under the supervision of a faculty adviser and in the preparation of a research report of sufficient quality to allow submission for publication or presentation at a national professional association conference. The research report will be evaluated jointly by the faculty adviser and the program director.

Practicum assignments serve to provide the student with experience in an applied setting while also aiding the organization in which the practicum occurs to meet some specific project need.

Practicum possibilities generated by the Industrial and Organizational Psychology faculty and students may involve settings in private industry, federal, state, or local government, educational institutions, or consulting firms. Practicum assignments involve one-semester commitments ranging from 12 to 15 hours per week on the part of the student. Depending on the nature of the assignment, this time may be distributed in a variety of ways among the organization, library, field work, etc. Practicum placements are initiated with a behavioral agreement between the graduate student and the organization. Behavioral agreements and performance objectives are jointly decided by the supervising faculty member, the organization representative, and the student. Full-time students are typically assigned practicum projects for the fall or spring terms of their second year.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A bachelor's degree with a major in psychology or a baccalaureate degree and completion of undergraduate psychology courses in statistics and research methods, and four additional upper-division courses (12 credit hours) in the core content areas of psychology, for a minimum of 18 upper-division hours in psychology.
- Résumé.
- Goal statement.
- Three letters of recommendation, with at least two furnished by college or university professors who are acquainted with the applicant.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this

program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Acceptance decisions are made only in the spring semester for admission in the fall of each year.

Industrial and Organizational Psychology MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jan 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Jan 15		

## CONTACT INFO

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 I/O MS  
 Heathrow Campus

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# Industrial Chemistry MS

## PROGRAM DESCRIPTION

The Master of Science in Industrial Chemistry (MS) program prepares students for careers in the chemical industry. The curriculum is designed to provide a broad overall perspective of the industry and an awareness of economic and engineering considerations while placing the primary emphasis upon chemistry and the application of chemical principles to the development of products and processes.

## CURRICULUM

The Industrial Chemistry MS program requires a minimum of 30 credit hours beyond the bachelor's degree, including 17 credit hours of core courses, and 7 credit hours of electives that must be approved by the student's advisory committee.

## **Total Required Hours for MS—30 Credit Hours beyond the Bachelor's Degree**

Proficiency examinations are given to all incoming graduate students. The results of these exams are used in planning the student's program of study. Deficiencies may require remedial course work.

### **Required Core Courses—17 Credit Hours**

- CHM 6710 Applied Analytical Chemistry (3 credit hours)
- CHS 6240 Chemical Thermodynamics (3 credit hours)
- CHS 6251 Applied Organic Synthesis (3 credit hours)
- CHM 6440 Kinetics and Catalysis (3 credit hours)
- CHS 6260 Chemical Unit Operations and Separations (3 credit hours)
- CHM 6936 Graduate Chemistry Seminar (1 credit hour - taken twice)

### **Electives for Industrial Chemistry—7 Credit Hours**

Choose from the following list (all elective courses must be approved by the student's advisory committee).

- CHM 5225 Advanced Organic Chemistry (3 credit hours)
- CHM 5235 Applied Molecular Spectroscopy (3 credit hours)
- CHM 5305 Applied Biological Chemistry (3 credit hours)
- CHM 5450 Polymer Chemistry (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHM 5580 Advanced Physical Chemistry (3 credit hours)
- CHM 6711 Chemistry of Materials (3 credit hours)
- CHS 6261 Chemical Process and Product Development (2 credit hours)
- CHM/CHS Special topics courses

### **Thesis—6 Credit Hours**

- CHM 6971 Thesis (6 credit hours)

The grounding in scientific research methodology provided by the thesis requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional

laboratories where they work. In either case, a member of the UCF Chemistry Department faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the thesis. The student will present his/her thesis for examination by a committee consisting of three members including the research adviser. The committee has to be approved by the Graduate Coordinator of the Chemistry program. The thesis must be judged worthy of publication by the review committee and may not be submitted for examination until so deemed. For nonresident students, the thesis adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

### **Examination Requirements**

Satisfactory completion of a final examination (oral defense of thesis) is required.

The grounding in scientific research methodology provided by the thesis requirement is a central focus of the proposed program. Students will conduct research either on site or at the professional laboratories where they work. In either case, a member of the UCF Chemistry Department faculty will act as research adviser and approve the research topic. This research culminates in the writing and presentation of the thesis. The student will present his/her thesis for examination by a committee consisting of three members including the research adviser. The committee has to be approved by the Graduate Coordinator of the Chemistry program. The thesis must be judged worthy of publication by the review committee and may not be submitted for examination until so deemed. For nonresident students, the thesis adviser will visit the student's laboratory, where their research is to be performed, before the research begins and on a regular basis until the work is complete.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must

provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Industrial Chemistry MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Department of Chemistry  
Chemistry 117

# Industrial Engineering MS

- Accelerated BS to MS
- Human Engineering/Ergonomics MS
- Engineering Management MS
- Interactive Simulation and Training Systems MS
- Manufacturing Engineering MS
- Operations Research MS
- Quality Engineering MS
- Simulation Modeling and Analysis MS
- Systems Engineering MS

## PROGRAM DESCRIPTION

The Master of Science programs in Industrial Engineering are designed to produce highly skilled industrial engineers, engineering managers, technical professionals, and leaders for the global economy. The program offers specialization tracks in the areas of Engineering Management, Human Engineering/Ergonomics, Interactive Simulation and Training Systems, Manufacturing Engineering, Operations Research, Quality Engineering, Simulation Modeling and Analysis, and Systems Engineering.

Industrial Engineering focuses on the design and improvement of systems, products, and processes. A total systems approach is used to optimize the various aspects of operations in both manufacturing and service industries. Industrial engineers use many analytical approaches to improve productivity, safety, and quality of working life while reducing operating costs.

The Industrial Engineering programs are structured to support the emergence of Central Florida as a national center of high technology as well as supporting the diverse service industries in the region and throughout the nation.

Additional information can be found at [www.iems.ucf.edu](http://www.iems.ucf.edu).

## CURRICULUM

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog.

Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Industrial Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Charles H. Reilly PhD  
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 Program Director  
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 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

### *Industrial Engineering MS*

## Accelerated BS to MS

### TRACK DESCRIPTION

The Accelerated Undergraduate/Graduate program in Industrial Engineering allows highly qualified undergraduate majors in Industrial Engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program.

### CURRICULUM

The BSIE is awarded after fulfilling all university requirements including completing 128 credit hours of course work and 71 credit hours of engineering courses. The MSIE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved 5000- or 6000-level courses with grades "B" (3.0) or better

may be counted towards the BS and MS degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Industrial Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B" (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

### Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

### Graduate Requirements

Please see graduate program requirements in the track of interest.

### ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Accelerated BS to MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Engineering II, Room 312C

### *Industrial Engineering MS*

## Human Engineering/ Ergonomics MS

### TRACK DESCRIPTION

The Human Engineering Ergonomics MS is designed for students who have an undergraduate degree in Engineering or a closely related discipline. The program is designed to provide students with the necessary knowledge in human engineering and ergonomics to effectively design tasks, industrial systems, and work environments that maximize human performance, safety, and overall productivity.

### CURRICULUM

#### **Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.**

The Human Engineering/Ergonomics MS program requires an undergraduate degree in Engineering or a closely related discipline and is available with

thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, and 12 to 18 credit hours of restricted electives. Thesis option students will take 12 credit hours of electives and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

### Prerequisites

- MAC 2313 Mathematics through Calculus III (4 credit hours)
- EIN 3314C Work Measurement and Design (3 credit hours)
- EIN 4243C Human Engineering (or equivalent) (3 credit hours)
- Computer programming capability. C, C++, or Java recommended.

### Required Courses—12 Credit Hours

- EIN 5248C Ergonomics (3 credit hours)



- EIN 6279C Biomechanics (3 credit hours) or EIN 6270C Work Psychology (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)

### Restricted Electives—9 Credit Hours

Select 3 courses from the following courses.

- EIN 5140 Project Engineering (3 credit hours)
- EIN 6215 System Safety Engineering and Management (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- Psychology Elective (3 credit hours)

### Thesis Option—9 Credit Hours

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level.

### Nonthesis Option—9 Credit Hours

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level.

A comprehensive examination also must be successfully passed.

### Comprehensive Examination

Nonthesis students must successfully pass an oral comprehensive examination as a requirement for graduation.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and

professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Human Engineering/ Ergonomics MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Charles H. Reilly PhD

Professor

Program Director

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Telephone 407-823-2204

Industrial Engineering and Management Systems  
Engineering II, Room 312C

**Industrial Engineering MS****Engineering  
Management MS****TRACK DESCRIPTION**

The Engineering Management MS focuses on effective decision-making in engineering and technological organizations.

**CURRICULUM****Total Hours Required for MS—30  
Credit Hours Minimum beyond the  
Bachelor's Degree.**

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.**

The Engineering Management MS program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

**Prerequisites**

- Mathematics through Calculus III (MAC 2313)
- Computer programming capability. C, C++, or Java recommended.

**Required Courses—12 Credit Hours**

- EIN 5108 The Environment of Technical Organizations (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

**Restricted Electives—9 Credit Hours**

Select 3 courses from the following courses.

- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)
- EIN 6224 Quality Management (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)
- EIN 5356 Cost Engineering (3 credit hours)
- EIN 6326 Technology Strategy (3 credit hours)
- EIN 6936 Seminar in Advanced Industrial Engineering (3 credit hours)
- ESI 6551C Systems Engineering (3 credit hours)

**Thesis Option—9 Credit Hours**

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level.

**Nonthesis Option—9 Credit Hours**

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student’s program of study must be at the 6000 level.

**ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor’s degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Engineering Management MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Professor  
 Program Director  
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 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

Industrial Engineering MS

**Interactive Simulation and Training Systems MS**

**TRACK DESCRIPTION**

The Interactive Simulation and Training Systems MS focuses on providing a fundamental understanding of significant topics relative to simulation systems and the requirements, design, development, and use of such systems for knowledge transfer in the technical environment.

**CURRICULUM**

**Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor’s Degree.**

The Interactive Simulation and Training Systems MS degree program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor’s degree, including 9 credit hours of required courses, and 15-21 credit hours of restricted electives. Thesis option students will take 15 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 21 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research the profession in order to help students acquire knowledge and skills pertaining to research-based

best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

### Prerequisites

- Computer programming capability. C, C++, or Java recommended.
- Mathematics through Differential Equations (MAP 2302)

### Required Courses—9 Credit Hours

- EIN 5255C Interactive Simulation (3 credit hours)
- EIN 5317 Training Systems Design (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

### Restricted Electives—12 Credit Hours

Select 4 courses from the following courses.

- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6532 Object-Oriented Simulation (3 credit hours)
- EIN 6258 Human Computer Interaction(3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)

- EIN 6647 Intelligent Simulation (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)

### Thesis Option—9 Credit Hours

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level.

### Nonthesis Option—9 Credit Hours

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level.

### Comprehensive Examination

Nonthesis students who do not take EIN 6647 must successfully pass an oral comprehensive examination over their graduate coursework. Please see the program director for further details.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Engineering or a closely related discipline.

- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

<b>Interactive Simulation and Training Systems MS</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

### **CONTACT INFO**

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 Engineering II, Room 312C

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### *Industrial Engineering MS*

# **Manufacturing Engineering MS**

## **TRACK DESCRIPTION**

The Manufacturing Engineering MS program provides that basic knowledge and supports education in new manufacturing concepts such as concurrent design and manufacturing, the virtual factory, and agile manufacturing.

## **CURRICULUM**

**Total Hours Required for MS—30  
 Credit Hours Minimum beyond the Bachelor’s Degree.**

The Manufacturing Engineering MS program requires an undergraduate degree in Engineering

or a closely related discipline and is available with thesis or nonthesis options. The program also offers a High Performance Internal Combustion Engine Optimization Focus with a thesis and nonthesis option.

The program requires a minimum of 30 credit hours beyond the bachelor’s degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university’s requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master’s program of study must be taken in courses at the 6000 level or higher.

### **Prerequisites**

- Computer programming capability. C, C++, or Java recommended.
- Mathematics through Differential Equations (MAP 2302)

**Required Courses—12 Credit Hours**

- EIN 6336 Production and Inventory Control (3 credit hours)
- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- EGN 5858C Prototyping and Product Realization (3 credit hours) or EIN 6459 Concurrent Engineering (3 credit hours)

**Restricted Electives—9 Credit Hours**

Select 3 courses from the following courses.

- EIN 6339 Operations Engineering (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 5607C Computer Control of Manufacturing Systems (3 credit hours)
- EIN 5248C Ergonomics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)

**Thesis Option—9 Credit Hours**

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

**Nonthesis Option—9 Credit Hours**

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

A comprehensive oral examination must also be successfully passed.

**Comprehensive Examination**

An oral comprehensive examination must be successfully passed as a graduation requirement by nonthesis students. Please see the program director for further details.

**High Performance Internal Combustion Engine Optimization Focus**

The Manufacturing MS program with a focus on High Performance Internal Combustion Engine

Optimization Focus requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of an elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

**Prerequisites**

- Computer programming capability. C, C++, or Java recommended.
- Mathematics through Differential Equations (MAP 2302)

**Required Courses—12 Credit Hours**

- EGN 5720 Internal Combustion Engine Analysis and Optimization (3 credit hours)
- EGN 6721C Experimental Methods for High Performance Engine Manufacturing (3 credit hours)
- EIN 5607C Computer Control of Manufacturing Systems (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

**Restricted Electives—9 Credit Hours**

Select 3 courses from the following courses.

- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)
- EGN 5858C Prototyping and Product Realization (3 credit hours) or EIN 6459 Concurrent Engineering (3 credit hours)

**Thesis Option—9 Credit Hours**

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

**Nonthesis Option—9 Credit Hours**

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student’s program of study must be at the 6000 level

They must also successfully pass a comprehensive examination.

**Comprehensive Examination**

Nonthesis students must successfully pass an oral comprehensive examination as a degree requirement.

**ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants to this program must provide a bachelor’s degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Manufacturing Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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 Industrial Engineering and Management Systems Engineering II, Room 312C

Industrial Engineering MS

**Operations Research MS**

**TRACK DESCRIPTION**

The Operations Research MS builds on an undergraduate Engineering, Mathematics, or Science degree to develop a strong modeling and analytical capability to improve processes and decision-making.

**CURRICULUM**

**Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor’s Degree.**

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.**

The Operations Research MS degree program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor’s

degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of electives and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

### Prerequisites

- Mathematics through Differential Equations (MAP 2302)
- Operations Research (ESI 4312 or ESI 5306)
- Computer programming capability. C, C++, or Java recommended.

### Required Courses—12 Credit Hours

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 6418 Linear Programming and Extensions (3 credit hours) or ESI 5419C Engineering Applications of Linear and Nonlinear Optimization (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)

- ESI 6336 Queuing Systems (3 credit hours)

### Restricted Electives—9 Credit Hours

Select 3 courses from the following courses.

- EIN 6336 Production and Inventory Control (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)

### Thesis Option—9 Credit Hours

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

### Nonthesis Option—9 Credit Hours

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

Nonthesis students must successfully pass the comprehensive examination.

### Comprehensive Examination

Nonthesis students must successfully pass an oral comprehensive examination over their graduate coursework. Please see the program director for further details.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.



**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Operations Research MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

Industrial Engineering MS

# Quality Engineering MS

## TRACK DESCRIPTION

The Quality Engineering MS focuses on improving

product and process quality in manufacturing and service industries.

## CURRICULUM

### Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor’s Degree.

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.**

The Quality Engineering MS degree program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor’s degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university’s requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

### Prerequisites

- Computer programming capability. C, C++, or Java recommended.
- Mathematics through Differential Equations (MAP 2302)

### Required Courses—12 Credit Hours

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)

### Restricted Courses—9 Credit Hours

Select 3 courses from the following courses.

- EIN 5140 Project Engineering (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)
- ESI 5227 Total Quality Improvement (3 credit hours)
- EIN 6336 Production and Inventory Control (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- EIN 5368C Integrated Factory Automation Systems (3 credit hours)

### Thesis Option—9 Credit Hours

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

### Nonthesis Option—9 Credit Hours

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student's program of study must be at the 6000 level

Nonthesis students must successfully pass the comprehensive examination.

### Comprehensive Examination

Nonthesis students must successfully pass an oral comprehensive examination at the completion of

their studies to fulfill degree requirements. Please see the program director for further details.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Quality Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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***Industrial Engineering MS***

## **Simulation Modeling and Analysis MS**

**TRACK DESCRIPTION**

The Simulation Modeling and Analysis MS focuses on providing a fundamental understanding of the functional and technical design requirements for simulation in manufacturing and service industries.

**CURRICULUM**

### **Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.**

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.**

The Simulation Modeling and Analysis MS program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in his the profession in order to help students acquire

knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

**Prerequisites**

- Computer programming capability. C, C++, or Java recommended.
- Mathematics through Differential Equations (MAP 2302)
- Operations Research (ESI 4312 or ESI 5306)\*

\*This requirement may be met by taking ESI 5306 as part of the program of study.

**Required Courses—12 Credit Hours**

- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6532 Object-Oriented Simulation (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)

**Restricted Electives—9 Credit Hours**

Select 3 courses from the following courses.

- EIN 5255C Interactive Simulation (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)

- EIN 6258 Human-Computer Interaction (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- ESI 6336 Queuing Systems (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

**Thesis Option—9 Credit Hours**

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to the requirement that at least one-half of the credit hours on a student’s program of study must be at the 6000 level

**Nonthesis Option—9 Credit Hours**

- Electives (9 credit hours), subject to the requirement that at least one-half of the credit hours on a student’s program of study must be at the 6000 level

Nonthesis students must successfully pass a comprehensive examination.

**Comprehensive Examination**

Nonthesis students must successfully pass an oral comprehensive examination to fulfill degree requirements. Please see the program director for further details.

**ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor’s degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Simulation Modeling and Analysis MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

**CONTACT INFO**

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*Industrial Engineering MS*

**Systems Engineering MS**

**TRACK DESCRIPTION**

The Systems Engineering MS program focuses on a systems view of engineering problems related to the management of complex industrial, military, government, and social systems.

## CURRICULUM

### Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.

The Systems Engineering MS program requires an undergraduate degree in Engineering or a closely related discipline and is available with thesis or nonthesis options. The program requires a minimum of 30 credit hours beyond the bachelor's degree, including 12 credit hours of required courses, and 12-18 credit hours of restricted electives. Thesis option students will take 12 credit hours of elective and 6 thesis credit hours and conduct an oral defense of their thesis. Nonthesis option students will take 18 credit hours of electives and pass a comprehensive oral examination at the end of their program of study.

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher.

### Required Courses—12 Credit Hours

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6551C Systems Engineering (3 credit hours)

### Restricted Electives—9 Credit Hours

Select 3 courses from the following courses.

- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 5248C Ergonomics (3 credit hours)
- EIN 5368C Integrated Factory Automation Systems (3 credit hours)
- EIN 5392C Manufacturing Systems Engineering (3 credit hours)
- EIN 5607C Computer Control of Manufacturing Systems (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)
- EIN 6215 Systems Safety Engineering and Management (3 credit hours)
- EIN 6258 Human-Computer Interaction (3 credit hours)
- EIN 6279C Biomechanics (3 credit hours)
- EIN 6336 Production and Inventory Control (3 credit hours)
- EIN 6357 Advanced Engineering Economics (3 credit hours)
- EIN 6459 Concurrent Engineering (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6647 Intelligent Simulation (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- ESI 5227 Total Quality Improvement (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- ESI 6336 Queueing Systems (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)

- ESI 6418 Linear Programming and Extensions (3 credit hours)
- ESI 6532 Object Oriented Simulation (3 credit hours)
- EEL 5173 Linear Systems Theory (3 credit hours)
- EEL 5625 Applied Control Systems (3 credit hours)
- EEL 5630 Digital Control Systems (3 credit hours)
- EEL 6255 Advanced Power Systems Analysis (3 credit hours)
- CEN 5016 Software Engineering (3 credit hours)
- TTE 6270 Intelligent Transportation Systems (3 credit hours)
- TTE 6625 Mass Transportation Systems (3 credit hours)

### Thesis Option—9 Credit Hours

- EIN 6971 Thesis (6 credit hours)
- Elective (3 credit hours), subject to approval by the IEMS Graduate Coordinator and to the requirement that at least one-half of the credit hours on a student's program of study must be 6000-level or beyond

### Nonthesis Option—9 Credit Hours

- Electives (9 credit hours), subject to approval by the IEMS Graduate Coordinator and to the requirement that at least one-half of the credit hours on a student's program of study must be 6000-level or beyond

Nonthesis students must successfully complete a comprehensive examination.

### Comprehensive Examination

Nonthesis students must successfully pass an oral comprehensive examination to fulfill degree requirements. For further details, please see the program director.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to general admission requirements, applicants must provide a bachelor's degree in Engineering or a closely related field, a résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Systems Engineering MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Charles H. Reilly PhD

Professor

Program Director

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Telephone 407-823-2204

Industrial Engineering and Management Systems Engineering II, Room 312C

# Industrial Engineering MSIE

## PROGRAM DESCRIPTION

The Department of Industrial Engineering and Management Systems offers a Master of Science in Industrial Engineering (MSIE) degree focusing on the design and improvement of systems, products, and processes. A total systems approach is used to optimize the various aspects of operations in both manufacturing and service industries. Industrial engineers use many analytical approaches to improve productivity, safety, and quality of working life while reducing operating costs. The MSIE curriculum builds on an undergraduate engineering degree to develop a stronger systems focus and analytical capability.

The industrial engineering graduate programs are structured to support the emergence of Central Florida as a national center of high technology as well as supporting the diverse service industries in the region and throughout the nation.

Many of the graduate courses offered by the department or required in the MSIE program are offered through the Florida Engineering Educational Delivery System (FEEDS), which provides video-streamed versions of classes over the Internet.

## CURRICULUM

The Industrial Engineering and Management Systems MSIE program requires a minimum of 30 credit hours beyond the bachelor's degree with thesis and nonthesis options. The MSIE curriculum builds on an undergraduate engineering degree to develop a stronger systems focus and analytical capability.

### **Total Hours Required for MSIE—30 Credit Hours Minimum beyond the Bachelor's Degree.**

Research studies are required in one or more courses. The research study and report will focus on reviewing and analyzing contemporary research in the profession in order to help students acquire knowledge and skills pertaining to research-based best practices. In addition, students may engage in directed independent studies, directed research or a

research report during their studies.

A program of study must be developed with the graduate program director and meet with departmental approval. Required courses vary depending on the program and are supplemented by electives that may include courses offered by other departments. A student with an undergraduate degree outside of industrial engineering may be required to satisfy an articulation program.

Students on assistantships must take 9 credit hours per semester to satisfy the university's requirement for full-time status. Most students working full time take 6 credit hours per semester. At that rate, the program can be completed in 6 semesters or less. However, students with more time available and, with an early start on a thesis, if applicable, can finish the program in 3 semesters.

At least one-half of the credit hours (including thesis hours) required in a master's program of study must be taken in courses at the 6000 level or higher. There are two options for students with a BSIE degree to pursue the MSIE; students with other Bachelor of Science degrees in Engineering may pursue Option 3 only.

### **Option 1: Generalist**

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video streamed versions of classes over the Internet.** The generalist program provides for both thesis and nonthesis options.

### **Required Courses—18 Credit Hours**

- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours) OR ESI 6358 Decision analysis (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

### **Thesis Option—12 Credit Hours**

- EIN 6971 Thesis (6 credit hours)
- Electives (6 credit hours), subject to the requirement that at least one-half of the credit

hours of a student's program of study must be at the 6000 level

### **Nonthesis Option—12 Credit Hours**

- Electives (12 credit hours), subject to the requirement that at least one-half of the credit hours of a student's program of study must be at the 6000 level

Nonthesis students must successfully pass a comprehensive examination.

### **Comprehensive Examination**

Nonthesis students must successfully pass an oral comprehensive examination to fulfill degree requirements. For further details, please see the program director.

### **Option 2: Follow the requirements for any Industrial Engineering MS track.**

**Depending on the MS track a student chooses, this program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video streamed versions of classes over the Internet. The program provides for both thesis and nonthesis options.**

### **Option 3: For those with other BS degrees in Engineering only.**

**This program can be taken entirely through the Florida Engineering Educational Delivery System (FEEDS), which provides video streamed versions of classes over the Internet, except the prerequisite courses. This option does not provide a thesis option.**

The following prerequisite courses are required.

### **Prerequisites**

- Computer programming capability. C, C++, or Java recommended.
- EIN 3314C Work Measurement and Design (3 credit hours)
- EIN 4333C Industrial Control Systems (3 credit hours)
- EIN 4391C Manufacturing Engineering (3 credit hours)

### **Required Courses—24 Credit Hours**

Choose eight courses; at least three courses must be at the 6000 level.

- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 5248C Ergonomics (3 credit hours)
- EIN 6336 Production and Inventory Control (3 credit hours)
- EIN 6357 Advanced Engineering Economic analysis (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

### **Electives—6 Credit Hours**

- Students select elective courses subject to the requirement that at least one-half of the credit hours of a student's program of study must be at the 6000 level.

### **Comprehensive Examination**

Students must successfully pass an oral comprehensive examination to fulfill degree requirements. Please see the program director for further details.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:



- One official transcript (in a sealed envelope) from each college/university attended.
- Bachelor's degree in Industrial Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Industrial Engineering MSIE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

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# Instructional Technology/Media MA

- Educational Technology MA
- e-Learning MA
- Instructional Systems MA

## PROGRAM DESCRIPTION

The Instructional Technology MA program is designed to meet the needs of working professionals in various settings. It enables candidates to complete courses in traditional, Web, and mixed mode (with one face-to-face meeting every other week). The program offers tracks in educational technology, instructional systems and e-learning

enabling candidates to pursue careers in business and industry, K12 and higher education.

## CURRICULUM

All three tracks of the Instructional Technology MA require a minimum of 39 credit hours beyond the bachelor's degree. The Educational Technology MA curriculum includes 15 credit hours of instructional technology core courses, 15 credit hours of professional specialization, six credit hours of electives, and three credit hours of practicum. The Instructional Systems MA and the e-Learning MA curriculum includes 15 credit hours of instructional technology core courses, 12 credit hours of professional specialization, 9 credit hours of electives, and three credit hours of practicum.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Letters of recommendation.
- Statement of professional and academic goals.
- Résumé.

For more information about the MA program, visit the program website at <http://insttech.education.ucf.edu>.

Instructional Technology/Media MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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Department of Education Research, Technology and Leadership  
ED 320-C

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### *Instructional Technology/Media MA*

## Educational Technology MA

### TRACK DESCRIPTION

The Instructional Technology MA program is designed to meet the needs of working professionals in various settings. It enables candidates to complete courses in traditional, Web, and mixed mode (with one face-to-face meeting every other week). The program offers tracks in educational technology, instructional systems and e-learning enabling candidates to pursue careers in business and industry, K12 and higher education.

### CURRICULUM

All three tracks of the Instructional Technology MA require a minimum of 39 credit hours beyond the bachelor's degree. The Educational Technology MA curriculum includes 15 credit hours of instructional technology core courses, 15 credit hours of professional specialization, six credit hours of electives, and three credit hours of practicum. The Instructional Systems MA and the e-Learning MA curriculum includes 15 credit hours of instructional technology core courses, 12 credit hours of professional specialization, 9 credit hours of electives, and three credit hours of practicum.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established

deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Letters of recommendation.
- Statement of professional and academic goals.
- Résumé.

For more information about the MA program, visit the program website at <http://insttech.education.ucf.edu>.

## CONTACT INFO

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Program Director  
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Telephone 407-823-4835  
Department of Education Research, Technology and Leadership  
ED 320-C

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### *Instructional Technology/Media MA*

## e-Learning MA

### TRACK DESCRIPTION

The Instructional Technology MA program is designed to meet the needs of working professionals in various settings. It enables candidates to complete courses in traditional, Web, and mixed mode (with one face-to-face meeting every other week). The program offers tracks in educational technology, instructional systems and e-learning enabling candidates to pursue careers in business and industry, K12 and higher education.

### CURRICULUM

All three tracks of the Instructional Technology MA require a minimum of 39 credit hours beyond the bachelor's degree. The Educational Technology MA curriculum includes 15 credit hours of instructional technology core courses, 15 credit hours of professional specialization, six credit hours of electives, and three credit hours of practicum. The Instructional Systems MA and the e-Learning MA curriculum includes 15 credit hours

of instructional technology core courses, 12 credit hours of professional specialization, 9 credit hours of electives, and three credit hours of practicum.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Letters of recommendation.
- Statement of professional and academic goals.
- Résumé.

For more information about the MA program, visit the program website at <http://insttech.education.ucf.edu>.

## CONTACT INFO

Atsusi Hirumi PhD  
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Telephone 407-823-4835  
Department of Education Research, Technology and Leadership  
ED 320-C

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### *Instructional Technology/Media MA*

# Instructional Systems MA

## TRACK DESCRIPTION

The Instructional Technology MA program is designed to meet the needs of working professionals in various settings. It enables candidates to complete courses in traditional, Web, and mixed mode (with one face-to-face meeting every other week). The program offers tracks in educational technology, instructional systems and e-learning

enabling candidates to pursue careers in business and industry, K12 and higher education.

## CURRICULUM

All three tracks of the Instructional Technology MA require a minimum of 39 credit hours beyond the bachelor's degree. The Educational Technology MA curriculum includes 15 credit hours of instructional technology core courses, 15 credit hours of professional specialization, six credit hours of electives, and three credit hours of practicum. The Instructional Systems MA and the e-Learning MA curriculum includes 15 credit hours of instructional technology core courses, 12 credit hours of professional specialization, 9 credit hours of electives, and three credit hours of practicum.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Letters of recommendation.
- Statement of professional and academic goals.
- Résumé.

For more information about the MA program, visit the program website at <http://insttech.education.ucf.edu>.

## CONTACT INFO

Atsusi Hirumi PhD  
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Telephone 407-823-4835  
Department of Education Research, Technology and Leadership  
ED 320-C

# Instructional Technology/Media

## MEd

- Educational Media MEd

### PROGRAM DESCRIPTION

**The Master of Education in Instructional Technology/Educational Media Track is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changed implemented to comply with new state requirements.**

The Master of Education in Instructional Technology program in Educational Media (Ed Media) is a totally web-based initial-certification program that leads to Florida certification as a school library media specialist. The Ed Media program is designed to offer skills in administration, production, instructional design, organization, selection, evaluation and research that relate to school library media programs. It stresses knowledge and applications of both present and future innovations and technologies used by school library media specialists. This program is designed for the student who has completed all requirements needed to earn the Florida Professional Educator's Certificate.

### CURRICULUM

The MEd program in Educational Media (Ed Media) is a totally online web-based program that prepares public school PK-12 teachers to become PK-12 school library media specialists. The program requires a minimum of 36 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, 24 credit hours of specialization, three credit hours of a co-requisite course, and three credit hours of an internship. Completion of the Ed Media MEd leads to certification in Educational Media as a FL PK-12 school library media specialist. Ed Media students are required to pass the Educational Media Subject Area Test in order to graduate from the online Ed Media program.

### Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—9 Credit Hours

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EME 6062 Research in Instructional Technology (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

#### Specialization Courses—24 Credit Hours

- EME 5051 Technologies of Instruction and Information Management (3 credit hours)
- EME 5225 Media for Children and Young Adults (3 credit hours)
- EME 6105 Collection Development Policies and Procedures (3 credit hours)
- EME 6605 Role of the Media Specialist in Curriculum and Instruction (3 credit hours)
- EME 6706 Administrative Principles in Media Centers (3 credit hours)
- EME 6805 Organization of Media and Information (3 credit hours)
- EME 6807 Information Sources and Services (3 credit hours)

#### Select one of the following:

- EME 5208 Production Techniques for Instructional Settings (3 credit hours)
- EME 6058 Current Trends in Educational Media (3 credit hours)

#### Internship—3 Credit Hours

All Ed Media students must complete either a job-site internship or a regular internship.

- EME 6946 Ed Media Internship

#### Co-requisite Courses—3 Credit Hours

This co-requisite is prescribed by the College of Education to meet state certification requirements or as support for a degree program. The co-requisite will be waived if the ESOL requirement is met by providing evidence of having completed a district-level 60 hour training OR an undergraduate or graduate level course that meets the state requirement for ESOL (i.e., a course that satisfies the district-level 60-hour training requirement. Waiver for a co-requisite must meet department

standards and be approved by the Chair of the department.

- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- An internship is required.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

The MEd in Education Media (Ed Media) at UCF is a state-approved initial teacher preparation program and, as such, the emphasis is on preparing media specialists as practitioners.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Educator's Certificate
- Three essay statements, details of which can be found at <http://edmedia.ucf.edu/graduate.htm>.
- Three letters of recommendation.
- At least one year of successful classroom experience is preferred.

Instructional Technology/ Media MEd	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

Amy Scheick PhD

Program Director  
 ascheick@mail.ucf.edu  
 Telephone 407-823-0228  
 Department of Educational Research, Technology and Leadership  
 College of Education, 320L

## Instructional Technology/Media MEd

# Educational Media MEd

## TRACK DESCRIPTION

**The Master of Education in Instructional Technology/Educational Media Track is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changed implemented to comply with new state requirements.**

The Master of Education in Instructional Technology program in Educational Media (Ed Media) is a totally web-based initial-certification program that leads to Florida certification as a school library media specialist. The Ed Media program is designed to offer skills in administration, production, instructional design, organization, selection, evaluation and research that relate to school library media programs. It stresses knowledge and applications of both present and future innovations and technologies used by school library media specialists. This program is designed for the student who has completed all requirements needed to earn the Florida Professional Educator's Certificate.

## CURRICULUM

The MEd program in Educational Media (Ed Media) is a totally online web-based program that prepares public school PK-12 teachers to become PK-12 school library media specialists. The program requires a minimum of 36 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, 24 credit hours of specialization, three credit hours of a co-requisite course, and three credit hours of an internship. Completion of the Ed Media MEd leads to certification in Educational Media as a FL PK-12 school library media specialist. Ed Media students are required to pass the Educational Media Subject Area Test in order to graduate from the online Ed Media program.

## **Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree.**

### **Core Courses—9 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EME 6062 Research in Instructional Technology (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

### **Specialization Courses—24 Credit Hours**

- EME 5051 Technologies of Instruction and Information Management (3 credit hours)
- EME 5225 Media for Children and Young Adults (3 credit hours)
- EME 6105 Collection Development Policies and Procedures (3 credit hours)
- EME 6605 Role of the Media Specialist in Curriculum and Instruction (3 credit hours)
- EME 6706 Administrative Principles in Media Centers (3 credit hours)
- EME 6805 Organization of Media and Information (3 credit hours)
- EME 6807 Information Sources and Services (3 credit hours)

#### **Select one of the following:**

- EME 5208 Production Techniques for Instructional Settings (3 credit hours)
- EME 6058 Current Trends in Educational Media (3 credit hours)

### **Internship—3 Credit Hours**

All Ed Media students must complete either a job-site internship or a regular internship.

- EME 6946 Ed Media Internship

### **Co-requisite Courses—3 Credit Hours**

This co-requisite is prescribed by the College of Education to meet state certification requirements or as support for a degree program. The co-requisite will be waived if the ESOL requirement is met by providing evidence of having completed a district-level 60 hour training OR an undergraduate or graduate level course that meets the state requirement for ESOL (i.e., a course that satisfies the district-level 60-hour training requirement. Waiver for a co-requisite must meet department

standards and be approved by the Chair of the department.

- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- An internship is required.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

The MEd in Education Media (Ed Media) at UCF is a state-approved initial teacher preparation program and, as such, the emphasis is on preparing media specialists as practitioners.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Educator's Certificate
- Three essay statements, details of which can be found at <http://edmedia.ucf.edu/graduate.htm>.
- Three letters of recommendation.
- At least one year of successful classroom experience is preferred.

## **CONTACT INFO**

Amy Scheick PhD  
 Program Director  
 ascheick@mail.ucf.edu  
 Telephone 407-823-0228  
 Department of Educational Research, Technology and Leadership  
 College of Education, 320L

# Interactive Entertainment MS

## PROGRAM DESCRIPTION

The Master of Science in Interactive Entertainment at the UCF Florida Interactive Entertainment Academy (FIEA) teaches artists, programmers, and producers the techniques, tools, and skills to succeed in the gaming industry. The program provides specific skills in the area of game design, as well as essential skills such as problem solving, teamwork, and project management. Students are selected for admission into production teams based on the skills they possess and contributions they can make to their production team.

FIEA provides a team-based, industry-oriented education in a world-class facility located at the Expo Centre in downtown Orlando. Student production teams are mentored by industry experts and researchers who provide instruction in game design, creative collaboration, rapid prototyping, 3-D animation and modeling, documentation, software engineering, legal and ethical issues, preproduction, and postmortems. Graduates have access to internship opportunities and job interviews with game and media companies from across the country.

## CURRICULUM

The Interactive Entertainment MS degree requires a minimum of 30 credit hours beyond the bachelor's degree including 12 credit hours of core courses, 9 credit hours of specialization, a practicum and a capstone experience.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The Master of Science in Interactive Entertainment at the Florida Interactive Entertainment Academy (FIEA) offers an immersive, project-based gaming education that is as active as it is interactive. Students become part of a team of fellow students who work together as producers, programmers, and artists on real-world projects with milestones and tight deadlines.

The immersive, team-based approach of this track is emphasized by the many projects students undertake that require communication and collaboration. Students become part of a team composed of producers, programmers, and artists and work on projects that mimic segments of the production processes found in the interactive entertainment industry.

The degree concludes with a capstone experience, where students work on a final large-scale project under the supervision of the faculty involving new research developments or partnerships within the industry. These partnerships could result in an internship, where course credit will be awarded based on work performance and a presentation about what the student learned during the internship experience. This experience serves as a capstone that ties together the knowledge and expertise gained to make a lasting contribution to research within interactive entertainment.

### Core Courses—12 Credit Hours

The foundation of the degree is the three-course core sequence that focuses on team-based learning. This sequence is designed to provide declarative, procedural, and strategic knowledge in a variety of issues related to game design. These include creative collaboration, rapid prototyping, 3-D animation and modeling, documentation, software engineering, legal and ethical issues, preproduction, and postmortems.

- DIG 5529C Production for Media (3 credit hours)
- DIG 5548C Rapid Prototype Production I (3 credit hours)
- DIG 5549C Rapid Prototype Production II (3 credit hours)
- DIG 6547C Preproduction and Prototyping (3 credit hours)

### Specialization Courses—9 Credit Hours

Specialization courses help prepare students in their chosen field (Programming, Art or Production) by covering the details of each discipline. Programming classes focus on software engineering techniques as they apply to interactive entertainment products, while production classes focus on the specifics of game design as well as project management. Art classes help students develop aesthetic and technical skills necessary to create compelling visuals for the entertainment industry.

- DIG 5045C Principles of Interactive Entertainment I (3 credit hours)
- DIG 5046C Principles of Interactive Entertainment II (3 credit hours)
- DIG 6785C Advanced Interactive Entertainment (3 credit hours)

### Capstone Experience—3 Credit Hours

The capstone experience applies the concepts and theories learned to produce a large-scale project. The target deliverable is a playable demonstration of a game that simulates the core experience and demonstrates the key features of the project’s vision. The course concludes with a special event premiering the final project to the FIEA community and invited guests.

- DIG 6718C Interactive Entertainment Project (3 credit hours)

### Practicum Experience—6 Credit Hours

The practicum is a supervised experience supplementing theoretical and practical experiences involving new research developments or partnerships within industry. Students may participate on a research team exploring new ideas in interactive entertainment with industry partners, work on an on-site internship with a game company, or develop their own interests by working with faculty on a personal research area of interest.

- DIG 6944C Game Design Practicum (6 credit hours)
- Both the capstone course and the practicum provide independent learning experiences. The capstone experience is a project-based class that features a game demonstration. The practicum allows students to work with industry partners, in an internship, or to conduct research.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- A portfolio of prior work as it relates to their area of specialization (art, programming, production, etc.) sent directly to Florida Interactive Entertainment Academy.

This program admits students in the fall semesters into production teams. Students will be selected based on the skills they possess and contributions they can make to the production team.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicant’s potential for completing the degree.

Interactive Entertainment MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15		
International Applicants	Jan 15	Jan 15		
International Transfer Applicants	Jan 15	Mar 1		

### CONTACT INFO

Shawna Adamson

Program Staff  
 admission@fiea.ucf.edu  
 Telephone 407-823-2121  
 Florida Interactive Entertainment Academy  
 FIEA 115F



# Interdisciplinary Studies MA

## PROGRAM DESCRIPTION

Interdisciplinary Studies offers a Master of Arts degree with more than two dozen concentrations and certificate affiliations available for constructing a program of study. Students create an individualized program in consultation with the program director, allowing for both the breadth and depth of experience that is valuable for students pursuing various career, educational, and intellectual goals.

The program incorporates three core courses as a common basis of study that integrates knowledge from various fields, traditions, and cultures to enhance and extend the educational experience. In addition, the program develops research abilities, substantive knowledge, critical thinking, and advanced skills through the diverse concentrations of study. Individual advising, carefully selected classes and program construction, and a commitment to the student are central to these programs.

## CURRICULUM

The Interdisciplinary Studies MA program requires a minimum of 33 credit hours beyond the bachelor's degree including 6 credit hours of core courses, 21 credit hours within the chosen concentration of study that includes at least 9 hours of courses in each of two disciplines for a total of 18 hours with an additional 3 hours of course work taken from any discipline of the student's choosing, and a capstone experience that consists of 6 hours of thesis credits and the presentation/defense of a thesis.

### **Total Required Hours for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.**

The Master of Arts in the Interdisciplinary Studies program is designed for students interested in an interdisciplinary experience by completing their concentration through courses traditionally associated with MA degrees. Course work must be selected so that at least 50 percent of credit hours in the program are taken at the 6000 level. Students must earn course grades of "B" or better to gain

credit toward the master's degree.

The program is designed to provide numerous independent learning opportunities. One core course will introduce students to research methodology that they will apply to independent research work. The other core course will involve students in small groups working primarily on projects involving ethics, research methods and information sources, and perhaps other topics and is organized to allow students to learn and practice interdisciplinary thinking, problem solving, and communication. As early as possible during their course of study, students will work with their committees and faculty advisers to prepare, present, and defend thesis based on independent research and analysis.

### **Core Courses—6 Credit Hours**

- IDS 6XXX Interdisciplinarity (3 credit hours)
- IDS 6XXX Research Methodology (3 credit hours)

### **Concentration—21 Credit Hours**

A minimum of 21 semester hours of course work must be completed in the concentration. Students will take at least 9 hours of courses in each of two disciplines for a total of 18 hours. An additional 3 hours of course work will be taken in any discipline of the student's choosing. Course selection is done in consultation and with approval of the program director and/or academic coordinator and the student's faculty adviser and thesis committee.

### **Capstone Experience—6 Credit Hours**

As early as possible and no later than the end of their second semester in the program, students are required to present a thesis proposal to the Interdisciplinary Studies Graduate Committee. This proposal must cover the thesis topic, plan of approach, and the faculty adviser and two thesis committee members. By the end of their plan of study, students must complete 6 credit hours of thesis and successfully defend their thesis. The thesis consists of a common theme with an introduction and literature review, details of the study, and results and conclusions. The thesis must be prepared in writing as well as being presented and defended orally.

The program is designed to provide numerous independent learning opportunities. One opportunity is a core course that will introduce students to research methodology that will be

applied to independent research work. Another opportunity is a second core course that will involve students in small groups working primarily on projects involving ethics, research methods and information sources, and perhaps other topics and is organized to allow students to learn and practice interdisciplinary thinking, problem solving, and communication. Finally, as early as possible during their course of study, students will work with their committees and faculty advisers to prepare, present, and defend a thesis based on independent research and analysis.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Goal statement.
- Three letters of recommendation from academic references.
- Interview with the Interdisciplinary Studies Graduate Coordinator

Applicants should note the minimal requirements for admission to the program, although meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Interdisciplinary Studies MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Michael Hampton PhD  
 Professor  
 Program Director  
 mis@mail.ucf.edu  
 Telephone 407-823-0144  
 Department of Interdisciplinary Studies  
 Classroom I, Suite 302

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# Interdisciplinary Studies MS

## PROGRAM DESCRIPTION

Interdisciplinary Studies offers a Master of Arts degree with more than two dozen concentrations and certificate affiliations available for constructing a program of study. Students create an individualized program in consultation with the program director, allowing for both the breadth and depth of experience that is valuable for students pursuing various career, educational, and intellectual goals.

The program incorporates three core courses as a common basis of study that integrates knowledge from various fields, traditions, and cultures to enhance and extend the educational experience. In addition, the program develops research abilities, substantive knowledge, critical thinking, and advanced skills through the diverse concentrations of study. Individual advising, carefully selected classes and program construction, and a commitment to the student are central to these programs.

## CURRICULUM

The Interdisciplinary Studies MS program requires a minimum of 33 credit hours beyond the bachelor's degree including 6 credit hours of core courses, 21 credit hours within the chosen concentration of study, that includes at least 9 hours of courses in each of 2 disciplines for a total of 18 hours with an additional 3 hours of course work taken from any discipline of the students choosing, and a capstone experience that consists of 6 hours of thesis credits and the presentation/defense of a thesis.

### **Total Required Hours for MS—33 Credit Hours Minimum beyond the Bachelor's Degree.**

The Master of Science in Interdisciplinary Studies degree program is designed for students interested in an interdisciplinary experience by completing their concentration through courses traditionally associated with MS degrees. Course work must be selected so that at least fifty percent of credit hours in the program are taken at the 6000 level. Students must earn course grades of "B" or better to get credit toward the master's degree.

The program is designed to provide numerous independent learning opportunities. One core course will introduce students to research methodology that they will apply to independent research work. The other core course, IDS XXXX, will involve students in small groups working primarily on projects involving ethics, research methods and information sources, and perhaps other topics and is organized to allow students to learn and practice interdisciplinary thinking, problem solving, and communication. As early as possible during their course of study, students will work with their committees and faculty advisors to prepare, present, and defend thesis based on independent research and analysis.

#### **Core Courses—6 Credit Hours**

- IDS 6XXX Interdisciplinarity (3 credit hours)
- IDS 6XXX Research Methodology (3 credit hours)

#### **Concentration—21 Credit Hours**

A minimum of 21 credit hours of course work must be completed in the concentration. Students will take at least 9 hours of courses in each of two disciplines for a total of 18 hours. An additional 3 hours of coursework will be taken in any discipline of the student's choosing. Course selection is done in consultation and with approval of the program director and/or academic coordinator and the student's faculty advisor and thesis committee.

#### **Capstone Experience—6 Credit Hours**

As early as possible and no later than the end of their second semester in the program, students are required to present a thesis proposal to the Interdisciplinary Studies Graduate Committee. This proposal must cover the thesis topic, plan of

approach, and the faculty advisor and two thesis committee members. By the end of their plan of study, students must complete 6 credit hours of thesis and successfully defend their thesis. The thesis consists of a common theme with an introduction and literature review, details of the study, and results and conclusions. The thesis must be prepared in writing as well as being presented and defended orally.

The program is designed to provide numerous independent learning opportunities. One opportunity is a core course that will introduce students to research methodology that will be applied to independent research work. Another opportunity is a second core course, IDS XXXX, that will involve students in small groups working primarily on projects involving ethics, research methods and information sources, and perhaps other topics and is organized to allow students to learn and practice interdisciplinary thinking, problem solving, and communication. Finally as early as possible during their course of study, students will work with their committees and faculty advisors to prepare, present, and defend thesis based on independent research and analysis.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Goal statement.
- Three letters of recommendation from academic references.
- Interview with the Interdisciplinary Studies Graduate Coordinator

Applicants should note the minimal requirements for admission to the program, although meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities,

past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals and the applicant's potential for completing the degree.

Interdisciplinary Studies MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Michael Hampton PhD  
 Professor  
 Program Director  
 mis@mail.ucf.edu  
 Telephone 407-823-0144  
 Department of Interdisciplinary Studies  
 Classroom I, Suite 302

# K-8 Mathematics and Science Education MEd

## PROGRAM DESCRIPTION

The K-8 Mathematics and Science Education program is offered as a Master of Education (MEd) degree for teachers with at least three years experience who instruct students in mathematics and/or science in the indicated grade levels.

The K-8 Mathematics and Science Education program is designed to improve the quality of teaching and learning in mathematics and science in grades K-8. Graduates of the K-8 Mathematics and Science program form a strong infrastructure of teachers focusing on long-term impact in schools while helping students succeed in mathematics and science classrooms.

The program is dedicated to providing all graduates with exceptional pedagogical and subject matter knowledge and skills by focusing on research-

based, state-of-the-art best practices in secondary mathematics and science education.

## Other K-8 Mathematics and Science Programs

The K-8 Mathematics and Science Education program offers a graduate certificate program that can be transferred in its entirety into the master's program.

The K-8 Mathematics and Science Education program is closely allied with both the Curriculum and Instruction (EdS/EdD) and PhD in Education programs. Graduates of the K-8 Mathematics and Science master's program have been very successful in completing the advanced graduate degrees.

## CURRICULUM

The K-8 Mathematics and Science Education MEd program requires a minimum of 36 credit hours beyond the bachelor's degree, including 15 credit hours of core courses, 12 credit hours of content pedagogy, 3 credit hours of supervised professional laboratory experience, and six credit hours of thesis work.

## Total Required Hours for MEd—36 Credit Hours Minimum beyond the Bachelor's Degree

### Core Courses—15 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- IDS 6934 Using Technology in Mathematics and Science (3 credit hours)
- IDS 6937 Reflecting on Instruction of Mathematics and Science (3 credit hours)
- IDS 6939 Reforming Curriculum in Mathematics and Science Education (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)

### Content Pedagogy—12 Credit Hours

- MAE 6641 Problem Solving and Critical Thinking Skills (3 credit hours)
- SCE 5825 Space Science for Educators (3 credit hours)
- ISC 6146 Environmental Education for Educators (3 credit hours)
- Elective (3 credit hours)

**Supervision—3 Credit Hours**

- EDS 5356 Supervision of Professional Laboratory Experiences (3 credit hours)

**Thesis—6 Credit Hours**

- IDS 6971 Thesis
- A thesis is required.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Three years of teaching experience.
- Recommendation letter by a school principal.
- A professional Florida teaching certificate in one of the following areas: elementary education, mathematics education (middle school or secondary), or science education (middle school or secondary).

K-8 Mathematics and Science Education program applications are accepted for admission to the summer term only. For best consideration, students applying for Lockheed Martin/UCF Academy for Mathematics and Science fellowships must apply for admission by the Fall Priority deadline date.

<b>K-8 Mathematics and Science Education MEd</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15			Apr 15
International Applicants	Jan 15			Nov 1
International Transfer Applicants	Jan 15			Dec 15

**CONTACT INFO**

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Department of Teaching and Learning Principles  
ED 123F

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# Management Information Systems MS

**PROGRAM DESCRIPTION**

The Master of Science in Management Information Systems program is an alternative to the MBA degree for students who desire specialized study and the development of a high level of professional proficiency in information technology. The areas of proficiency include enterprise resource planning, systems analysis and design, systems implementation, database administration, telecommunications, and e-commerce. Students completing the master's degree program in MIS will be prepared to work in organizations in such areas as software developers, systems analysts, database administrators, network managers and consultants.

The degree prepares students in the technical and managerial topics essential for a successful career in the information technology (IT) field. This field is characterized by rapid advances in technology (hardware, software, telecommunications), intense international competition, faster product life cycles, and complex and specialized markets.

In such turbulent environments, the information requirements of organizations are becoming increasingly more challenging. Forward-looking companies must invest wisely in IT and the human expertise necessary to make them competitive and successful in the future. Individuals are needed who can design and manage large and complex information systems, and who can communicate effectively with customers and management.

Our goal is to develop specialists who are attuned to the latest principles, methods, and techniques

of both technology and management. The MIS program at the University of Central Florida is designed to meet the challenge of producing individuals who are capable of leading such companies successfully into the future.

## CURRICULUM

The Master of Science in Management Information Systems program requires a minimum of 30 credit hours beyond the bachelor's degree, including 3 credit hours of business core courses, and 15 credit hours of MIS core courses, and 12 credit hours of MIS approved by the graduate program director. Students without a bachelor's degree in business will need to take 12 credit hours of Business Foundation prerequisites. Students without a technical background will take 9 credit hours of technical prerequisite courses.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

The major consists of 30 credit hours taken from the business core, the MIS core, and the MIS electives. All courses can be completed by a full-time student in one calendar year and by a part-time student in two calendar years. ISM 6305, typically taken in the last semester, serves as a capstone course and culminating experience in the program.

A required comprehensive research paper or practicum is required. The research paper is the major component of ISM 6305 Information Systems Management. In addition, students may elect to undertake a practicum where they gain practical real-world experience working in a professional capacity in the information systems field.

### Prerequisites

#### Business Foundation—12 Credit Hours

An undergraduate degree in business or the satisfactory completion of the following foundation courses fulfills this requirement. These requirements should be completed prior to starting the program in the fall semester. They will be offered during the spring and summer semesters. In some cases these courses may be waived by the faculty adviser or taken concurrently with the cohort program.

- ACG 6065 Accounting Foundations (3 credit hours)

- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

#### Technology Foundation—9 Credit Hours

The following technical prerequisites (or equivalents) should be completed before enrolling in 6000-level graduate courses. These courses are offered every semester including summer. In some cases these courses may be waived by the faculty adviser or taken concurrently with the cohort program.

- ISM 5123 Concepts of Systems Analysis and Design (3 credit hours)
- ISM 5127 Concepts of Database Design and Administration (3 credit hours)
- ISM 5256 Concepts of Business Programming (3 credit hours)

#### Business Core—3 Credit Hours

- MAN 6245 Organizational Behavior and Development (3 credit hours)

#### Management Information Systems Core—15 Credit Hours

- ISM 6121 Advanced Information Systems Analysis and Design (3 credit hours)
- ISM 6217 Advanced Database Administration (3 credit hours)
- ISM 6305 Information Resources Management (3 credit hours)
- ISM 5315 Information Systems Project Management (3 credit hours)
- ISM 6227 Management of Telecommunications (3 credit hours)

#### Management Information Systems Electives—12 Credit Hours

Students may take other electives as available and as approved by the graduate program director.

- ISM 6158 ERP Implementation (3 credit hours)
- ISM 5219 Business Intelligence Systems (3 credit hours)
- ISM 6368 Business Knowledge Management Systems (3 credit hours)
- ISM 6485 Electronic Commerce (3 credit hours)
- ISM 6305 Information Systems Management integrates the knowledge gained through the

curriculum and requires a research paper to be presented. If students wish practicum experience, they may substitute that for any ISM 6000-level class.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay, of no more than 1,000 words addressing the following topics: Why are you applying for admission to the graduate program at the University of Central Florida ? What are your five- and ten-year career objectives, and how will this degree assist you in obtaining these objectives? What alternatives to this degree have you considered?
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Management Information Systems MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jun 15	Nov 1	Mar 15
Fall admission only.				
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
Fall admission only.				
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15
Fall admission only.				

## CONTACT INFO

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 Department of Management Information Systems  
 Business Administration 325

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## Management MS

- Human Resources/Change Management MS

## PROGRAM DESCRIPTION

The College of Business Administration offers a Master of Science in Management degree that provides an alternative to the MBA degree for students who desire specialized study and the development of a high level of professional proficiency in a functional area of business. The primary track in the Management program is Human Resources and Change Management and will prepare students to work in organizations in such areas as human resources, strategic planning, organizational effectiveness, staffing, and employee relations.

The MSM program offers an alternative to students who want to pursue graduate study in business, but who also desire a focus on management. The program is designed to appeal to those currently in management positions who want to develop additional expertise, as well as those who seek to move into the management track as a vehicle for career advancement.

The program is based on the belief that successful change involves aligning a firm's people and process with an ever-changing environment. As a result, the goals of our program are to provide you with the knowledge required to successfully anticipate, plan, and carry out changes. One main component of the program is a focus on developing practices and methods that align human resources activities with organizational strategies. The second component is designed to help you develop skills in recognizing the need for change, the factors that improve a firm's ability to absorb change, along with effective and appropriate responses to those changes.

Students with a wide variety of backgrounds, including those with degrees in economics, education, hospitality, nursing, psychology, and business, are encouraged to apply to this program. Students without an undergraduate degree in business must take a series of background courses by completing the MBA foundation core.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Management MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

## CONTACT INFO

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 UCF Executive Development Center  
 DTC 201D

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*Management MS*

# Human Resources/ Change Management MS

## TRACK DESCRIPTION

The Master of Science in Management program provides an alternative to the MBA degree for students who desire specialized study and the development of a high level of professional

proficiency in a functional area of business. The primary track in the Management program is Human Resources and Change Management and will prepare students to work in organizations in such areas as human resources, strategic planning, organizational effectiveness, staffing, and employee relations.

## CURRICULUM

### Total Hours Required for Human Resources and Change Management Track—30 Credit Hours Minimum

#### Required Courses—18 Credit Hours

- MAN 6305 Human Resources Management (3 credit hours)
- MAN 6311 Advanced Topics in Human Resources Management (3 credit hours)
- MAN 6385 Strategic Human Resources Management (3 credit hours)
- MAN 6245 Organizational Behavior (3 credit hours)
- MAN 6325 Applied Research Tools (3 credit hours)
- MAN 6448 Conflict Resolution and Negotiation (3 credit hours)

#### Elective Courses—12 Credit Hours

- MAN 6286 Innovation and Strategic Change (3 credit hours)
- MAN 6323 Human Resources Information Systems (3 credit hours)
- MAN 6915 Applied Field Project (3 credit hours)
- MAN 6285 Change Management (3 credit hours)
- MAN 6395 Leadership Development and Coaching (3 credit hours)

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide an official, competitive GRE or GMAT score taken within the last five years, three letters of recommendation, an essay, and a résumé; applicants from countries where English is not the official language or applicants with degrees from non-U.S. accredited institutions must achieve a minimum score of 233 on the TOEFL.

In addition to the general UCF graduate admission requirements, applicants to this program must



provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see the college website).
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

Human Resources/Change Management MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants			Nov 15	
The next term that this program will be offered is Spring 2010.				
International Applicants				
International Transfer Applicants				

**CONTACT INFO**

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 UCF Executive Development Center  
 DTC 201D

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# Marriage and Family Therapy MA

**PROGRAM DESCRIPTION**

The Master of Arts in Marriage and Family Therapy prepares students to work in private practice, agencies and other settings as marriage and family therapists. Graduates of the program are expected to have a sense of professional identity, acquire requisite skills and knowledge to work with couples

and families, attain licensure and become leaders in the profession.

**CURRICULUM**

The Marriage and Family Therapy MA program requires a minimum of 63 credit hours beyond the bachelor’s degree, including six credit hours of core courses, 45 credit hours of specialization courses, and 12 credit hours of professional clinical experience. In addition, students must create and defend a portfolio during their final internship course, and also must take an exit examination.

**Total Required for MA—63 Credit Hours beyond the Bachelor’s Degree.**

The Marriage and Family Therapy MA program requires an internship or practicum. Practica and internship are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

The following courses must be taken before enrolling in MHS 6803 (Practicum): MHS 5005, 6400, 6401, 6500, 6702, 6070. Two semesters of practicum are prerequisite for MHS 6830, Internship.

**Core Courses—6 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

**Specialization Courses—45 Credit Hours**

- MHS 5005 Introduction to the Counseling Profession (3 credit hours)
- MHS 6430 Family Counseling I (3 credit hours)
- MHS 6431 Family Counseling II (3 credit hours)
- MHS 6440 Couples Counseling (3 credit hours)
- MHS 6070 Diagnosis and Treatment in Counseling (3 credit hours)
- MHS 6220 Individual Psychoeducational Testing I (3 credit hours)

- MHS 6400 Theories of Counseling and Personality (3 credit hours)
- MHS 6401 Techniques of Counseling (3 credit hours)
- MHS 6420 Counseling Special Populations (3 credit hours)
- MHS 6450 Counseling Substance Use and Abuse (3 credit hours)
- MHS 6470 Human Sexuality and Relationships (3 credit hours)
- MHS 6500 Group Procedures and Theories in Counseling (3 credit hours)
- MHS 6702 Ethical and Legal Issues (3 credit hours)
- SDS 6347 Career Development (3 credit hours)
- Elective approved by adviser (3 credit hours)

### Professional Clinical Experiences—12 Credit Hours

- MHS 6803 Practicum in Counselor Education (3 credit hours)
- MHS 6803 Practicum in Counselor Education (3 credit hours)
- MHS 6830 Counseling Internship (3 credit hours)
- MHS 6830 Counseling Internship (3 credit hours)

### Portfolio and Exit Examination

In lieu of comprehensive exams, students must complete a portfolio and defend it during their final internship classes. Portfolio requirements are described in the Graduate Student Handbook for the Counselor Education Program. Students must take an exit examination.

### Internships

Besides the 51 credit hours of normal course work, students must complete two separate semesters of Practicum MHS 6803 and two separate semesters of Internship MHS 6830 bringing the total hours to 63. During practicum, students see clients under supervision in the Community Counseling Clinic where they must accumulate 100 contact hours. In addition, 900 more contact hours are required in the two Internship classes so the student gains a total of 1000 hours of clinical experience.

The Marriage and Family Therapy MA program requires an internship or practicum. Practica and internship are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and

skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member).

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Résumé.

A formal interview is required and will be scheduled after the College of Education admission requirements are met. Interviews are conducted on the second Friday in March and the second Friday in October.

The program can accommodate only a limited number of students; therefore, there is a possibility of being denied admission even when all criteria are met.

The College of Education reserves the right to refuse student entrance or terminate a student after admission to the Marriage and Family Therapy Program, if in the judgment of the faculty the student demonstrates unacceptable personal fitness to work in the field with children, youth, and/or adults.

Marriage and Family Therapy MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Mar 1	Oct 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Department of Child, Family and Community  
 Sciences  
 ED 322-Q

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# Materials Science and Engineering MSMSE

- Accelerated BS to MSMSE

## PROGRAM DESCRIPTION

The Materials Science and Engineering master's degree program (MSMSE), intended primarily for a student with a bachelor's degree in materials science and engineering or a closely related science or engineering discipline obtained from a recognized accredited institution.

Fields of emphasis and research for materials science and engineering include crystal growth, high temperature materials and coatings, multicomponent interdiffusion, material stability and degradation, shape memory alloys, mechanical behavior, magnetic and optical and electronic materials, thin films, solar cells, sensors, ceramics, powder metallurgy, non-equilibrium processing of materials, nanosynthesis and consolidation, nanomaterials including quantum dots nanowires and nanocomposites, biomaterials, and electrochemically active materials.

## CURRICULUM

The Materials Science and Engineering MSMSE program requires a minimum of 30 credit hours beyond the bachelor's degree and has both thesis and nonthesis options. The program includes 12-15 credit hours of required courses, and the remaining courses must be electives, including at least six credit hours of thesis work for students in the thesis option.

## Total Hours Required for MSMSE—30 Credit Hours Minimum beyond the Bachelor's Degree

All students are expected to identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. The appropriate program of study form can be found at <http://www.mmae.ucf.edu/Academics/graduate.html>. Students should consult with the Materials program coordinator for assistance in filling out a program of study and approval.

A student pursuing the thesis option may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time and online students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE or EMA 6918 Directed Research as part of their 30-credit-hour course requirement to demonstrate their ability to perform independently in research conditions. See materials program coordinator for specific details.

A student with an undergraduate degree outside of the materials science and engineering discipline is required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the materials program coordinator.

### Prerequisites (or equivalent)

- Mathematics through Differential Equations (MAP 2302 )
- Structure and Properties of Materials (EGN 3365 )
- Mechanics of Materials (EGN 3331) or Thermodynamics (EGN 3343 )
- Experimental Techniques in Mechanics and Materials (EMA 3012C)

### Required Courses—12-15 Credit Hours

All students must take the following five required courses. Students with a Materials undergraduate degree are exempt from taking EMA 5104.

- EMA 5104 Intermediate Structure and Properties of Materials (3 credit hours)

- EMA 5106 Metallurgical Thermodynamics (3 credit hours)
- EMA 5317 Materials Kinetics (3 credit hours)
- EMA 6126 Physical Metallurgy (3 credit hours)
- EMA 6626 Mechanical Behavior of Materials (3 credit hours)

Additional courses to satisfy total semester hour requirements (30 credit hours thesis option, 30 credit hours nonthesis option) may be taken from the list of representative electives below or be any preapproved School of Electrical Engineering and Computer Science, Physics, Chemistry, College of Optics and Photonics, or Mechanical, Materials and Aersospace Engineering (MMAE) course offering. To obtain preapproval students should consult with their faculty adviser (or program coordinator if they do not have a faculty adviser) and have the course included in their program of study prior to registering for classes. Note that thesis option students must take 6 credit hours of thesis and nonthesis option students must take either EML 6085 Research Methods in MMAE or EMA 6918 Directed Research. Thesis students who are full time must continue to enroll in three credit hours of thesis course work (EMA 6971) until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis.

### Electives—9-18 Credit Hours

Thesis students take 9-12 credit hours of electives (depending upon the required hours of 12-15) while non-thesis students take 15 -18 credit hours of electives (depending upon the required hours of 12 -15). Courses should be selected with faculty advisor input.

- EMA 5108 Surface Science (3 credit hours)
- EMA 5140 Introduction to Ceramic Materials (3 credit hours)
- EMA 5504 Modern Characterization of Materials (3 credit hours)
- EMA 6130 Phase Transformation in Metals and Alloys (3 credit hours)
- EMA 6136 Diffusion in Solids (3 credit hours)
- EMA 5585 Materials Science of Thin Film (3 credit hours)
- EMA 6516 X-ray Diffraction and Crystallography (3 credit hours)
- EMA 5586 Photovoltaic Solar Energy Materials (3 credit hours)
- EMA 5584 Biomaterials (3 credit hours)
- EMA 6149 Imperfections in Crystals (3 credit hours)
- EMA 5505 Scanning Electron Microscopy (3 credit hours)
- EMA 5060 Polymer Science and Engineering (3 credit hours)
- EMA 6518 Transmission Electron Microscopy (3 credit hours)
- EMA 5705 High Temperature Materials (3 credit hours)
- EMA 6605 Materials Processing Techniques (3 credit hours)
- EMA 5610 Laser Materials Processing (3 credit hours)
- EMA 5587C Characterization and Reliability of PV Cells (3 credit hours)
- EML 6085 Research Methods in MMAE (3 credit hours)
- EMA 6515 X-ray and Auger Electron Spectroscopic Techniques (3 credit hours)
- EMA 6938 Electronic and Optical Materials Processing (3 credit hours)

### Electives Outside EMA Offerings

- CHM 5450 Polymer Chemistry (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHM 5715C Materials Processing and Characterization Techniques (3 credit hours)
- CHM 6711 Materials Chemistry (3 credit hours)
- EEL 5332C Thin Film Technology (3 credit hours)
- EEL 5352 Semiconductor Material and Device Characterization (3 credit hours)
- EEL 6326C MEMS Fabrication Laboratory (3 credit hours)
- EML 5290 Introduction to MEMS and Micromachining (3 credit hours)
- EML 5291 MEMS Materials (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)
- PHY 5140C Ion-Solid Interactions (3 credit hours)
- PHY 7423 Physics of Nanostructures (3 credit hours)
- PHZ 5405 Condensed Matter Physics (3 credit hours)

### Thesis Option—6 Credit Hours

- EML 6971 (6 credit hours)

## Comprehensive Examination

Nonthesis students will have to successfully pass a comprehensive examination to fulfill degree requirements.

A research course, either EML 6085 Research Methods, or EMA 6918 Directed Research, is required of all nonthesis students as their independent learning experience.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before you complete the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Materials Science and Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the Materials program director for more information.

Materials Science and Engineering MSMSE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Telephone 407-823-2175  
AMPAC  
ENG I Rm 381

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### *Materials Science and Engineering MSMSE*

## Accelerated BS to MSMSE

### TRACK DESCRIPTION

The Accelerated Undergraduate/Graduate program in Materials Science and Engineering allows highly qualified undergraduate majors in Mechanical Engineering (Materials Option) to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program.

### CURRICULUM

The BSMSE is awarded after completing university requirements for the degree, including 120 credit hours and completing of 71 credit hours of engineering courses. The MSMSE is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved graduate level courses of grades “B” (3.0) or better may be counted towards the B.S. and M.S. degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Materials Science and Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a “B” (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

## Undergraduate Requirements

Please see the current edition of the Undergraduate Catalog.

## Graduate Requirements

Please see the Materials Science and Engineering MSME program.

## Total Hours Required for MSMSE—30 Credit Hours Minimum beyond the Bachelor’s Degree

All students are expected to identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. The appropriate program of study form can be found at <http://www.mmae.ucf.edu/Academics/graduate.html>. Students should consult with the Materials program coordinator for assistance in filling out a program of study and approval.

A student pursuing the thesis option may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time and online students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE or EMA 6918 Directed Research as part of their 30-credit-hour course requirement to demonstrate their ability to perform independently in research conditions. See materials program coordinator for specific details.

A student with an undergraduate degree outside of the materials science and engineering discipline is required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the materials program coordinator.

## Prerequisites (or equivalent)

- Mathematics through Differential Equations (MAP 2302 )
- Structure and Properties of Materials (EGN 3365 )
- Mechanics of Materials (EGN 3331) or Thermodynamics (EGN 3343 )
- Experimental Techniques in Mechanics and Materials (EMA 3012C)

## Required Courses—12-15 Credit Hours

All students must take the following five required courses. Students with a Materials undergraduate degree are exempt from taking EMA 5104.

- EMA 5104 Intermediate Structure and Properties of Materials (3 credit hours)
- EMA 5106 Metallurgical Thermodynamics (3 credit hours)
- EMA 5317 Materials Kinetics (3 credit hours)
- EMA 6126 Physical Metallurgy (3 credit hours)
- EMA 6626 Mechanical Behavior of Materials (3 credit hours)

Additional courses to satisfy total semester hour requirements (30 credit hours thesis option, 30 credit hours nonthesis option) may be taken from the list of representative electives below or be any preapproved School of Electrical Engineering and Computer Science, Physics, Chemistry, College of Optics and Photonics, or Mechanical, Materials and Aerospace Engineering (MMAE) course offering. To obtain preapproval students should consult with their faculty adviser (or program coordinator if they do not have a faculty adviser) and have the course included in their program of study prior to registering for classes. Note that thesis option students must take 6 credit hours of thesis and nonthesis option students must take either EML 6085 Research Methods in MMAE or EMA 6918 Directed Research. Thesis students who are full time must continue to enroll in three credit hours of thesis course work (EMA 6971) until the thesis requirement is satisfied, beyond the minimum of 6 credit hours of thesis.

## Electives—9-18 Credit Hours

Thesis students take 9-12 credit hours of electives (depending upon the required hours of 12-15) while non-thesis students take 15 -18 credit hours of electives (depending upon the required hours of 12 -15). Courses should be selected with faculty advisor input.

- EMA 5108 Surface Science (3 credit hours)
- EMA 5140 Introduction to Ceramic Materials (3 credit hours)
- EMA 5504 Modern Characterization of Materials (3 credit hours)
- EMA 6130 Phase Transformation in Metals and Alloys (3 credit hours)
- EMA 6136 Diffusion in Solids (3 credit hours)
- EMA 5585 Materials Science of Thin Film (3 credit hours)
- EMA 6516 X-ray Diffraction and Crystallography (3 credit hours)
- EMA 5586 Photovoltaic Solar Energy Materials (3 credit hours)
- EMA 5584 Biomaterials (3 credit hours)
- EMA 6149 Imperfections in Crystals (3 credit hours)
- EMA 5505 Scanning Electron Microscopy (3 credit hours)
- EMA 5060 Polymer Science and Engineering (3 credit hours)
- EMA 6518 Transmission Electron Microscopy (3 credit hours)
- EMA 5705 High Temperature Materials (3 credit hours)
- EMA 6605 Materials Processing Techniques (3 credit hours)
- EMA 5610 Laser Materials Processing (3 credit hours)
- EMA 5587C Characterization and Reliability of PV Cells (3 credit hours)
- EML 6085 Research Methods in MMAE (3 credit hours)
- EMA 6515 X-ray and Auger Electron Spectroscopic Techniques (3 credit hours)
- EMA 6938 Electronic and Optical Materials Processing (3 credit hours)

### Electives Outside EMA Offerings

- CHM 5450 Polymer Chemistry (3 credit hours)
- CHM 5451C Techniques in Polymer Science (3 credit hours)
- CHM 5715C Materials Processing and Characterization Techniques (3 credit hours)
- CHM 6711 Materials Chemistry (3 credit hours)

- EEL 5332C Thin Film Technology (3 credit hours)
- EEL 5352 Semiconductor Material and Device Characterization (3 credit hours)
- EEL 6326C MEMS Fabrication Laboratory (3 credit hours)
- EML 5290 Introduction to MEMS and Micromachining (3 credit hours)
- EML 5291 MEMS Materials (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- OSE 6432 Fundamentals of Photonics (3 credit hours)
- PHY 5140C Ion-Solid Interactions (3 credit hours)
- PHY 7423 Physics of Nanostructures (3 credit hours)
- PHZ 5405 Condensed Matter Physics (3 credit hours)

### Thesis Option—6 Credit Hours

- EML 6971 (6 credit hours)

### Comprehensive Examination

Nonthesis students will have to successfully pass a comprehensive examination to fulfill degree requirements.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before you complete the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to admission requirements, applicants must provide a bachelor's degree in Materials Science and Engineering or a closely related discipline, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before you complete the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Materials Science and Engineering or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Students should contact the Materials program director for more information.

Accelerated BS to MSMSE	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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AMPAC  
ENG I Rm 381

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# Mathematical Science MS

- Industrial Mathematics MS

## PROGRAM DESCRIPTION

The Master of Science in Mathematical Science provides a broad base in applied and industrial mathematics. Research interests of the faculty include applied analysis, differential equations, methods of mathematical physics, nonlinear waves, probability and mathematical statistics, functional analysis, numerical analysis, approximation

theory, nonlinear dynamics, fluid mechanics, wave propagation, algebra, number theory, combinatorics and graph theory, inverse problems, special functions and orthogonal polynomials, financial mathematics, and medical imaging.

## CURRICULUM

The Mathematical Science MS program requires 30 credit hours minimum beyond the bachelor's degree for the thesis option and 36 credit hours minimum beyond the bachelor's degree for the nonthesis option.

### Total Required Hours for MS—30 or 36 Credit Hours Minimum beyond the Bachelor's Degree.

Thesis and nonthesis options are offered within the program. In either option, students should find an adviser who participates in designing a program of study. A program of study is presented to either the Graduate Curriculum Committee or the graduate program director for approval.

### Thesis Option—30 Credit Hours Minimum

In this option, the Mathematical Science degree requires a minimum of 30 credit hours composed of at least 18 credit hours of foundation course work, 9 hours of electives, and 3 credit hours of thesis. It is recommended that thesis topics have potential for industrial applications. An oral defense of the thesis will be required. It is strongly recommended that the student select a thesis adviser by the completion of 18 semester hours of course work.

### Foundation Courses—18 Credit Hours

*Choose with program approval. List below is offered as a sample of typical foundation courses.*

- MAA 5210 Topics in Advanced Calculus (4 credit hours)
- MAA 6405 Complex Variables (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAS 5145 Advanced Linear Algebra and Matrix Theory (3 credit hours)



### **Electives—9 Credit Hours**

Electives should be chosen in consultation with the graduate program director or the student's thesis adviser and may be chosen from the suggested options: discrete mathematics, general applied mathematics, image processing and computer graphics, mathematical optics, mathematical physics, pure mathematics, rational mechanics, signal analysis, and statistics. A list of courses for these elective options can be obtained from the graduate program director. Approved graduate courses outside the department may also be used. At least one-half of the program courses must be taken at the 6000 level.

### **Thesis—3 Credit Hours Minimum**

- MAP 6971 Thesis (3 credit hours)

### **Nonthesis Option—36 Credit Hours Minimum**

In this option the student takes 36 credit hours of course work, including the required courses and approved electives. The student must pass a comprehensive written examination given in the final semester of the student's program, based on the program of study. Students should take MAP 6407 Applied Mathematics I, where they apply mathematical principles to independent projects. Other courses also have substantial research projects, including MAP 5117 Mathematical Modeling, MAT 5711 Scientific Computing, and MAP 6111 Mathematical Statistics.

### **Foundation Courses—18 Credit Hours**

*Choose with program approval. List below is offered as a sample of typical foundation courses.*

- MAA 5210 Topics in Advanced Calculus (4 credit hours)
- MAA 6405 Complex Variables (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAS 5145 Advanced Linear Algebra and Matrix Theory (3 credit hours)

### **Electives—18 Credit Hours**

Electives should be chosen in consultation with the graduate program director or the student's adviser.

In the Mathematical Science MS program, the thesis option provides an independent learning experience through directed research, reading published research papers, and writing and defending the thesis. The nonthesis option requires students to take MAP 6407 Applied Mathematics I, where they apply mathematical principles to independent projects.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A working knowledge of undergraduate calculus, differential equations, linear algebra (or matrix theory), boundary value problems, statistics, computer programming, and maturity in the language of advanced calculus (at the level of MAA 4226).

Students who find they are not adequately prepared in one or more of the required mathematical subject areas can select appropriate courses from the undergraduate curriculum to make up such deficiencies. Such courses, unless specially approved, will not count toward the graduate degree. Applicants not qualified for regular status may be admitted initially to the university in a nondegree-seeking status, although only nine hours in this status can be transferred into a graduate program.

Transfer of credits from other programs will be considered on a course-by-course basis.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

Mathematical Science MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Mathematics  
 Math and Physics 212

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### *Mathematical Science MS*

# Industrial Mathematics MS

## TRACK DESCRIPTION

The Master of Science in Industrial Mathematics prepares graduate students to pursue careers in industry by providing them with high quality professional training in branches of mathematics valuable to high-technology industry.

## CURRICULUM

### **Total Required Hours for MS—30 or 36 Credit Hours Minimum beyond the Bachelor's Degree.**

Thesis or nonthesis options are offered within the program. In either option, students will work with an adviser to design a program of study. A program of study is presented to either the Graduate Curriculum Committee or the program director for approval. If a student has an industry sponsor, the student's program of study will be developed in consultation with a representative from his sponsoring company. Students are expected to obtain hands-on experience by working at

sponsoring companies during summer semesters.

The following courses are required as prerequisites to this track: Calculus with Analytic Geometry I, II, and III; Differential Equations; Elementary Linear and Matrix Algebra (or a course equivalent); Numerical Calculus (or a course equivalent); and Statistics.

At least one-half of the program courses must be taken at the 6000 level.

### **Thesis Option—30 Credit Hours Minimum**

#### **Required Courses—15 Credit Hours**

- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 5117 Mathematical Modeling (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6111 Mathematical Statistics (3 credit hours)
- MAT 5711 Scientific Computing (3 credit hours)

#### **Elective Courses—12 Credit Hours**

Electives should be chosen in consultation with the graduate program director and the student's adviser.

#### **Thesis—3 Credit Hours**

It is recommended that the thesis topics have potential for industrial applications. An oral defense of the thesis will be required.

#### **Nonthesis Option—36 Credit Hours**

The nonthesis option requires 36 credit hours of courses, including the required courses and a written comprehensive examination.

#### **Required Courses—15 Credit Hours**

- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 5117 Mathematical Modeling (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6111 Mathematical Statistics (3 credit hours)
- MAT 5711 Scientific Computing (3 credit hours)

**Electives—21 Credit Hours**

Electives should be chosen in consultation with the graduate program director and the student's adviser.

**Comprehensive Exam**

The comprehensive examination will be given in the final semester of the student's program of study, based on the program of study. The examination will be on the required courses with the exclusion of Scientific Computing. The examination will be supervised by a committee composed of the adviser and at least two other faculty members from the Department of Mathematics. A pass/fail grade is given on the examination; and it may be repeated twice if necessary.

**Total Required Hours for MS—30 or 36 Credit Hours Minimum beyond the Bachelor's Degree.**

Thesis and nonthesis options are offered within the program. In either option, students should find an adviser who participates in designing a program of study. A program of study is presented to either the Graduate Curriculum Committee or the graduate program director for approval.

**Thesis Option—30 Credit Hours Minimum**

In this option, the Mathematical Science degree requires a minimum of 30 credit hours composed of at least 18 credit hours of foundation course work, 9 hours of electives, and 3 credit hours of thesis. It is recommended that thesis topics have potential for industrial applications. An oral defense of the thesis will be required. It is strongly recommended that the student select a thesis adviser by the completion of 18 semester hours of course work.

**Foundation Courses—18 Credit Hours**

*Choose with program approval. List below is offered as a sample of typical foundation courses.*

- MAA 5210 Topics in Advanced Calculus (4 credit hours)
- MAA 6405 Complex Variables (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)

- MAP 6407 Applied Mathematics I (3 credit hours)
- MAS 5145 Advanced Linear Algebra and Matrix Theory (3 credit hours)

**Electives—9 Credit Hours**

Electives should be chosen in consultation with the graduate program director or the student's thesis adviser and may be chosen from the suggested options: discrete mathematics, general applied mathematics, image processing and computer graphics, mathematical optics, mathematical physics, pure mathematics, rational mechanics, signal analysis, and statistics. A list of courses for these elective options can be obtained from the graduate program director. Approved graduate courses outside the department may also be used. At least one-half of the program courses must be taken at the 6000 level.

**Thesis—3 Credit Hours Minimum**

- MAP 6971 Thesis (3 credit hours)

**Nonthesis Option—36 Credit Hours Minimum**

In this option the student takes 36 credit hours of course work, including the required courses and approved electives. The student must pass a comprehensive written examination given in the final semester of the student's program, based on the program of study. Students should take MAP 6407 Applied Mathematics I, where they apply mathematical principles to independent projects. Other courses also have substantial research projects, including MAP 5117 Mathematical Modeling, MAT 5711 Scientific Computing, and MAP 6111 Mathematical Statistics.

**Foundation Courses—18 Credit Hours**

*Choose with program approval. List below is offered as a sample of typical foundation courses.*

- MAA 5210 Topics in Advanced Calculus (4 credit hours)
- MAA 6405 Complex Variables (3 credit hours)
- MAP 5336 Ordinary Differential Equations and Applications (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)

- MAS 5145 Advanced Linear Algebra and Matrix Theory (3 credit hours)

### Electives—18 Credit Hours

Electives should be chosen in consultation with the graduate program director or the student's adviser.

## ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years and a working knowledge of undergraduate calculus, differential equations, linear algebra (or matrix theory), boundary value problems, statistics, computer programming, and maturity in the language of advanced calculus (at the level of MAA 4226).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A working knowledge of undergraduate calculus, differential equations, linear algebra (or matrix theory), boundary value problems, statistics, computer programming, and maturity in the language of advanced calculus (at the level of MAA 4226).

Students who find they are not adequately prepared in one or more of the required mathematical subject areas can select appropriate courses from the undergraduate curriculum to make up such deficiencies. Such courses, unless specially approved, will not count toward the graduate degree. Applicants not qualified for regular status may be admitted initially to the university in a nondegree-seeking status, although only nine hours in this status can be transferred into a graduate program.

Transfer of credits from other programs will be considered on a course-by-course basis.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential

for completing the degree.

Industrial Mathematics MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Department of Mathematics  
 Math and Physics 212

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# Mathematics Education MA

- Middle School Mathematics MA

## PROGRAM DESCRIPTION

**With the exception of the Community College Teaching Track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The Master of Arts in Mathematics Education program is for noneducation majors or previously certified teachers in another field and offers a program in secondary mathematics, as well as tracks in middle school mathematics and community college teaching.

The primary mission of the program is to provide quality professional education for those entering careers as educators and trainers and for practicing

teachers seeking to enhance their professional knowledge and skills through advanced studies.

## CURRICULUM

Students in the Mathematics Education MA program in secondary mathematics (grades 6-12) requires a minimum of 36 credit hours beyond the bachelor's degree, with 15 credit hours of core courses, 15 credit hours of specialization, and 6 credit hours of an internship. All students in this program must also complete a portfolio and pass all required sections of the Florida Teaching Certification Examination prior to graduation.

Students may also choose one of two available tracks. The Middle School Mathematics (grades 5-9) program requires a minimum of 36 credit hours beyond the bachelor's degree, with 15 credit hours of core courses, 15 credit hours of specialization, and 6 credit hours of an internship. All students in this program must also complete a portfolio and pass all required sections of the Florida Teaching Certification Examination prior to graduation.

### Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program in secondary mathematics (grades 6-12) requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students' as reflective practitioners.

#### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)

- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

#### Specialization Courses—15 Credit Hours

- MAE 5336 Current Methods in Secondary School Mathematics (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives approved by adviser (9 credit hours; substitutions can be made with approval of adviser)
- Choose one course: MAE 6641, MAE 6899, or IDS 6939 (3 credit hours)
- Choose one course: MAE 6517, MAE 6656, or IDS 6915 (3 credit hours)
- Choose one course: MAE 6337 or MAE 6338 (3 credit hours)

Students are required to have 30 credit hours of mathematics course work to meet certification requirements to teach mathematics in grades 6-12. These may be previously earned undergraduate or graduate mathematics credits or include graduate credits in mathematics approved for electives in the program. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

#### Internship—6 Credit Hours

- MAE 6946 Graduate Internship (6 credit hours)

Satisfactory completion of the Graduate Internship requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State Board of Education Rule 6A-5.065.

#### Additional Graduation Requirements

- All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Pass all applicable sections of the Florida Teacher Certification Examination.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished

Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students' as reflective practitioners.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process.

Mathematics Education MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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### Mathematics Education MA

# Middle School Mathematics MA

## TRACK DESCRIPTION

The Master of Arts in Middle School Mathematics program is for noneducation majors or previously certified teachers in another field and offers a program in secondary mathematics and tracks in middle school mathematics and community college teaching.

## CURRICULUM

### Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students' as reflective practitioners.

### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Specialization Courses—15 Credit Hours

- MAE 5327 Teaching Middle School Mathematics (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives (9 credit hours; substitutions can be made with approval of adviser) Choose One: MAE 6641, MAE 6899 OR IDS 6939 (3 credit hours)
- Choose One: MAE 6517, MAE 6656, OR IDS 6915 (3 credit hours)
- Choose One: MAE 6337 OR MAE 6338 (3 credit hours)

Students are required to have 18 credit hours of mathematics course work to meet certification requirements to teach mathematics in grades 5-9. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

### Internship—6 Credit Hours

- MAE 6946 Graduate Internship (6 credit hours)

Satisfactory completion of the Graduate Internship requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State Board of Education Rule 6A-5.065.

### Additional Graduation Requirements

- All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Pass all applicable sections of the Florida Teacher Certification Examination.

### Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program in secondary mathematics (grades 6-12) requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analyses are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students'

overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students' as reflective practitioners.

### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Specialization Courses—15 Credit Hours

- MAE 5336 Current Methods in Secondary School Mathematics (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives approved by adviser (9 credit hours; substitutions can be made with approval of adviser)
- Choose one course: MAE 6641, MAE 6899, or IDS 6939 (3 credit hours)
- Choose one course: MAE 6517, MAE 6656, or IDS 6915 (3 credit hours)
- Choose one course: MAE 6337 or MAE 6338 (3 credit hours)

Students are required to have 30 credit hours of mathematics course work to meet certification requirements to teach mathematics in grades 6-12. These may be previously earned undergraduate or graduate mathematics credits or include graduate credits in mathematics approved for electives in the program. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

### Internship—6 Credit Hours

- MAE 6946 Graduate Internship (6 credit hours)

Satisfactory completion of the Graduate Internship requires the student to demonstrate proficiency in all 12 Florida Educator Accomplished Practices at the pre-professional level in accordance with State

Board of Education Rule 6A-5.065.

### Additional Graduation Requirements

- All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Pass all applicable sections of the Florida Teacher Certification Examination.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students' as reflective practitioners.

### ADMISSIONS

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process.

Middle School Mathematics MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants				
International Applicants				
International Transfer Applicants				

### CONTACT INFO

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## Mathematics Education MEd

### PROGRAM DESCRIPTION

The Master of Education in Mathematics Education (MEd) is designed to meet the advanced knowledge and skill needs of the classroom teacher of mathematics.

The primary mission of the program is to provide quality professional education for those entering careers as educators and trainers and for practicing teachers seeking to enhance their professional knowledge and skills through advanced studies.

### CURRICULUM

The Mathematics Education MEd program requires a minimum of 33 credit hours beyond the bachelor's degree, including 12-15 credit hours of core courses, six credit hours of specialization courses approved by an adviser, and 15 credit hours of curriculum core courses approved by an adviser. The program also required the completion of a research report at the end of studies or a research study done through one or more courses.

### Total Hours Required for MEd—33 Credit Hours Minimum beyond the Bachelor's degree.

The MEd program has a research study housed in one or more courses. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working



in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### **Core Courses—12 or 15 Credit Hours**

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- MAE 6909 Research Report or 2 approved electives (2,1 or 6 credit hours)

#### **Select one of the following courses:**

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)

#### **Select one of the following courses:**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

### **Specialization Courses—6 Credit Hours**

- MAE 6641 Problem Solving and Critical Thinking Skills (3 credit hours)
- IDS 6934 Using Technology in Mathematics and Science (3 credit hours)

### **Curriculum Core Courses—15 Credit Hours**

- MAE 6145 Mathematics Curriculum, K-12 (3 credit hours)
- MAE 6337 Teaching Algebra in the Secondary School (3 credit hours)
- MAE 6338 Teaching Geometry in the Secondary School (3 credit hours)
- IDS 6937 Reflecting on Instruction of Mathematics (3 credit hours)
- IDS 6939 Reforming Curriculum in Mathematics and Science Education (3 credit hours)
- Program must specify.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested

materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in Mathematics Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into an MEd program.

<b>Mathematics Education MEd</b>	<b>Fall Priority</b>	<b>Fall</b>	<b>Spring</b>	<b>Summer</b>
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## **CONTACT INFO**

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 Department of Teaching and Learning Principles  
 ED 123-Q

# Mechanical Engineering MSME

- Accelerated BS to MSME
- Computer-Aided Mechanical Engineering MSME
- Mechanical Systems MSME
- Miniature Engineering Systems MSME
- Professional MSME
- Thermofluids MSME

## PROGRAM DESCRIPTION

The Master of Science degree in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

## CURRICULUM

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses.

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

## ADMISSION

Mechanical Engineering MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

**Mechanical Engineering MSME****Accelerated BS to MSME****TRACK DESCRIPTION**

The Accelerated Undergraduate/Graduate program in Mechanical Engineering allows highly qualified undergraduate majors in Mechanical Engineering to begin taking graduate-level courses that will count toward their master's degree while completing their baccalaureate degree program.

**CURRICULUM**

The BSME is awarded after completing all university requirements, including 120 total credit hours and 71 credit hours of engineering courses. The MSME is awarded upon completion of the master's program. Courses designated in General Education Program and Common Program Prerequisites are usually completed in the first 60 hours (see engineering major requirements in the Undergraduate Catalog).

Up to 12 credit hours of approved graduate level courses of grades "B" (3.0) or better may be counted towards the BS and MS degrees. Additional notes on the Accelerated Undergraduate and Graduate Program in Mechanical Engineering:

- Students who change degree programs and select this major must adopt the most current catalog.
- Students must earn at least a "B" (3.0) in each undergraduate and graduate engineering course for them to be counted toward the major.

**Undergraduate Requirements**

Please see the current edition of the Undergraduate Catalog.

**Graduate Requirements**

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The

nonthesis options require 30 credit hours of courses.

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

EML 6085 Research Methods is required of all nonthesis students to fulfill the independent learning requirement.

**ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.

Accelerated BS to MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Telephone 407-823-3402  
 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

## Mechanical Engineering MSME

# Computer-Aided Mechanical Engineering MSME

## TRACK DESCRIPTION

The Master of Science in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

## CURRICULUM

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval

of the adviser and the department. More information is available from the MMAE Department.

### Prerequisites (or equivalent)

- Mathematics through Differential Equations (MAP 2302)
- Modeling Methods in Mechanical and Aerospace Engineering (EML 3034)
- Thermodynamics of Mechanical Systems (EML 3101)
- Structure and Properties of Materials (EGN 3365)
- Machine Design and Analysis (EML 3500)

### Required Courses—12 Credit Hours

- EML 5060 Mathematical Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials and Aerospace Engineering I (3 credit hours)

### Suggested Electives—12-18 Credit Hours

Thesis students will take 12 credit hours of electives while nonthesis students will take 18 credit hours of electives. All nonthesis students are required to take either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours). The remaining credit hours can be selected from the following list or from courses from other tracks.

- EGN 5858C Prototyping and Product Realization (3 credit hours)
- EML 5237 Intermediate Mechanics of Materials (3 credit hours)
- EML 5025C Engineering Design Practice (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EML 6062 Boundary Element Methods in Engineering (3 credit hours)
- EML 6547 Engineering Fracture Mechanics in Design (3 credit hours)
- EML 6305C Experimental Mechanics (3 credit hours)
- EML 6725 Computational Fluid Dynamics and Heat Transfer I (3 credit hours)

- EAS 6138 Advanced Gas Dynamics (3 credit hours)
- EAS 6185 Turbulent Flow (3 credit hours)
- EML 5105 Gas Kinetics and Statistical Thermodynamics (3 credit hours)
- EML 5402 Turbomachinery (3 credit hours)
- EML 6155 Convection Heat Transfer (3 credit hours)
- EML 6712 Mechanics of Viscous Flow (3 credit hours)
- EML 5066 Computational Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5131 Combustion Phenomena (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 5713 Intermediate Fluid Mechanics (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EML 6154 Conduction Heat Transfer (3 credit hours)
- EML 6233 Fundamentals of Fatigue Analysis (3 credit hours)
- EML 5237 Intermediate Mechanics of Materials (3 credit hours)
- EML 5546 Engineering Design with Composite Materials (3 credit hours)
- EML 6547 Engineering Fracture Mechanics in Design (3 credit hours)
- EML 6085 Research Methods in MMAE (3 credit hours)\*
- EML 6908 Directed Research (3 credit hours)\*

Note: EML 6085 or EML 6908 serve as the independent learning experience for the program.

### Thesis Option—6 Credit Hours

#### Minimum

- EML 6971 Thesis (6 credit hours)

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student

pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

Nonthesis students are required to take either EML 6085, Research Methods, or EML 6908 Directed Research as their independent learning experience. Either of these courses also serves as the culminating experience of the program for the nonthesis students.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines

for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.

Computer-Aided Mechanical Engineering MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

*Mechanical Engineering MSME***Mechanical Systems  
MSME****TRACK DESCRIPTION**

The Master of Science in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

**CURRICULUM****Total Required Hours for MS—30  
Credit Hours Minimum beyond the  
Bachelor's Degree.**

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

**Prerequisites (or equivalent)**

- Mathematics through Differential Equations (MAP 2302)
- Modeling Methods in Mechanical and Aerospace Engineering (EML 3034)
- Machine Design and Analysis (EML 3500)
- Vibration Analysis (EML 4220)
- Experimental Techniques in Mechanics and Materials (EMA 3012C)
- Feedback Control (EML 3312C)

**Required Courses—12 Credit Hours**

- EML 5060 Mathematical Methods in Mechanical, Materials, and Aerospace Engineering (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials and Aerospace Engineering I (3 credit hours)

**Electives—12-18 Credit Hours  
Minimum**

Thesis option students take 12 credit hours of electives while nonthesis students take 18 credit hours of electives which need to include either EML 6085 Research Methods in MMAE (3 credit hours) or EAS 6908 Directed Research (3 credit hours). The remaining credit hours can be selected from the following list or from courses from other tracks.

- EML 6305C Experimental Mechanics (3 credit hours)
- EML 5311 System Control (3 credit hours)
- EML 5546 Engineering Design with Composite Materials (3 credit hours)
- EML 6068 Finite Elements in Mechanical and Aerospace Engineering II (3 credit hours)
- EML 6062 Boundary Element Methods in Engineering (3 credit hours)
- EML 6227 Nonlinear Vibrations (3 credit hours)
- EML 5025C Engineering Design Practice (3 credit hours)
- EML 5066 Computational Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5224 Acoustics (3 credit hours)
- EML 5228C Modal Analysis (3 credit hours)
- EML 5245 Tribology (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)

- EML 5572 Probabilistic Methods in Mechanical Design (3 credit hours)
- EML 6808 Analysis and Control of Robot Manipulators (3 credit hours)
- EML 6226 Analytical Dynamics (3 credit hours)
- EML 6233 Fundamentals in Fatigue Analysis (3 credit hours)
- EML 6085 Research Methods in MMAE (3 credit hours)\*
- EML 6908 Directed Research (3 credit hours)\*

Note: courses denoted with the asterisk fulfill the independent learning requirement and either is required for nonthesis students.

### **Thesis Option—6 Credit Hours**

- EML 6971 (6 credit hours)

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required

to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

Nonthesis students are required to take either EML 6085, Research Methods, or EML 6908 Directed Research as their independent learning experience. Either of these courses also serves as the culminating experience of the program for the nonthesis students.

## **ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The

deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The

deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.



Mechanical Systems MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

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### *Mechanical Engineering MSME*

# Miniature Engineering Systems MSME

## TRACK DESCRIPTION

The Master of Science in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

## CURRICULUM

### **Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.**

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students

should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

### **Required Courses—12 Credit Hours**

- EML 5060 Mathematical Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5290 Introduction to MEMS and Micromachining (3 credit hours)
- EML 6296 MEMS Mechanism and Design (3 credit hours)
- EEL 6326C MEMS Fabrication Laboratory (3 credit hours), or EEL 5355C Fabrication of Solid-State Devices (3 credit hours)

### **Electives—12-18 Credit Hours Minimum**

Thesis option students take 12 credit hours of electives while non-thesis students take 18 credit hours which need to include either EML 6085 (Research Methods in MMAE; 3 credit hours) or EML 6908 (Direct Research; 3 credit hours). The remaining credit hours can be elected from the following list or from courses from other tracks.

- EML 5292 Fundamental Phenomena and Scaling Laws in Miniature Engineering Systems (3 credit hours)
- EML 5291 MEMS Materials (3 credit hours)

- EML 6299 Advanced Topics on Miniaturization (3 credit hours)
- EML 6297 MEMS Characterization (3 credit hours)
- EML 6295 Sensors and Actuators for Micro Mechanical Systems (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)
- EML 5025C Engineering Design Practice (3 credit hours)
- ENG 5858C Prototyping and Product Realization (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 6712 Mechanics of Viscous Flow (3 credit hours)
- EML 6155 Convective Heat Transfer (3 credit hours)
- EML 5713 Intermediate Fluid Mechanics (3 credit hours)
- EML 6725 Computational Fluid Dynamics (3 credit hours)
- EML 6104 Classical Thermodynamics (3 credit hours)
- EML 5402 Turbomachinery (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EAS 5407 Mechatronics (3 credit hours)
- EML 6157 Radiation Heat Transfer (3 credit hours)
- EML 6233 Fundamentals of Fatigue Analysis (3 credit hours)
- EML 5245 Tribology (3 credit hours)
- EML 5311 System Control (3 credit hours)
- EML 5105 Gas Kinetics and Statistical Thermodynamics (3 credit hours)
- EEL 5625 Applied Control System (3 credit hours)
- EML 5546 Engineering Design with Composite Materials (3 credit hours)
- EML 6203 Advanced Vibrational Systems (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials and Aerospace Engineering I (3 credit hours)
- EML 6085 Research Methods in MMAE\* (3 credit hours)
- EML 6908 Directed Research\* (3 credit hours)

Note: Courses with asterisk have independent learning experiences. Nonthesis students are required to take at least one course from those

with an asterisk. These courses also provide the culminating experience for the program.

### **Thesis Option—6 Credit Hours Minimum**

- EML 6971 Thesis (6 credit hours)

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

EML 6085 or EML 6908 is required of all nonthesis students and provides the independent learning experience for the program.

## **ADMISSIONS**

### **The College of Engineering and Computer**

**Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form (www.cecs.ucf.edu/preapp) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.

Miniature Engineering Systems MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

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### *Mechanical Engineering MSME*

## Professional MSME

### TRACK DESCRIPTION

The Master of Science in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

### CURRICULUM

#### **Total Hours Required for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.**

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition,

students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

### Prerequisites (or equivalent)

- Mathematics through Differential Equations (MAP 2302)
- Modeling Methods in Mechanical and Aerospace Engineering (EML 3034)
- Thermodynamics of Mechanical Systems (EML 3101)
- Structure and Properties of Materials (EGN 3365)
- Mechanics of Materials (EGN 3331)

### Required Courses—12 Credit Hours

- EML 5060 Mathematical Methods in Mechanical, Materials, and Aerospace Engineering (3 credit hours)
- EML 5211 Continuum Mechanics (3 credit hours)
- EML 5271 Intermediate Dynamics (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials and Aerospace Engineering I (3 credit hours)

### Electives—12-18 Credit Hours

#### Minimum

Thesis option students take 12 credit hours of electives; non-thesis students take 18 credit hours of electives and need to include either EML 6085 (Research Methods in MMAE; 3 credit hours) or EML 6908 (Direct Research; 3 credit hours). The remaining credit hours can be elected from the following list or from courses from other tracks and up to 6 credit hours from graduate courses offered in the College of Engineering and Computer Science.

- EML 5131 Combustion Phenomena (3 credit hours)
- EML 5402 Turbomachinery (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EML 6062 Boundary Element Methods in Engineering (3 credit hours)

- EML 6155 Convection Heat Transfer (3 credit hours)
- EML 6226 Analytical Dynamics (3 credit hours)
- EML 6305C Experimental Mechanics (3 credit hours)
- EML 6547 Engineering Fracture Mechanics in Design (3 credit hours)
- EML 6712 Mechanics of Viscous Flow (3 credit hours)
- EML 6725 Computational Fluid Dynamics and Heat Transfer I (3 credit hours)
- EML 5025C Engineering Design Practice (3 credit hours)
- EML 5105 Gas Kinetics and Statistical Thermodynamics (3 credit hours)
- EAS 6138 Advanced Gas Dynamics (3 credit hours)
- EAS 6185 Turbulent Flow (3 credit hours)
- EML 5066 Computational Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5131 Combustion Phenomena (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 5713 Intermediate Fluid Mechanics (3 credit hours)
- EML 6068 Finite Elements in Mechanical, Materials, and Aerospace Engineering II (3 credit hours)
- EML 6233 Fundamentals of Fatigue Analysis (3 credit hours)
- EML 6726 Computational Fluid Dynamics and Heat Transfer II (3 credit hours)
- EML 5237 Intermediate Mechanics of Materials (3 credit hours)
- EML 5546 Engineering Design with Composite Materials (3 credit hours)
- EML 6085 Research Methods in MMAE\* (3 credit hours)
- EML 6908 Directed Research\* (3 credit hours)

Note: \*Nonthesis students are required to take either EML 6085, Research Methods, or EML 6908 Directed Research as their independent learning experience.

### Thesis Option—6 Credit Hours

#### Minimum

- EML 6971 Thesis (6 credit hours)

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's

degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

Nonthesis students are required to take either EML 6085, Research Methods, or EML 6908 Directed Research as their independent learning experience. Either of these courses also serves as the culminating experience of the program for the nonthesis students.

## ADMISSIONS

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.

Professional MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Telephone 407-823-3402  
 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

*Mechanical Engineering MSME***Thermofluids MSME****TRACK DESCRIPTION**

The Master of Science in Mechanical Engineering is primarily intended for students with a bachelor's degree in Mechanical or Aerospace engineering or a closely related discipline obtained from a recognized accredited institution. The program offers Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, Thermofluids and Accelerated BS to MS tracks.

**CURRICULUM****Total Required Hours for MS—30  
Credit Hours Minimum beyond the  
Bachelor's Degree.**

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

**Prerequisites (or equivalent)**

- Mathematics through Differential Equations (MAP 2302)
- Modeling Methods in Mechanical and Aerospace Engineering (EML 3034)
- Thermodynamics of Mechanical Systems (EML 3101)
- Measurements in Thermal Systems (EML 4304C)
- Fluid Mechanics II (EML 4703)
- Heat Transfer (EML 4142)

**Required Courses—12 Credit Hours**

- EML 5060 Mathematical Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 6712 Viscous Flow (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 6104 Classical Thermodynamics (3 credit hours)

**Electives—12-18 Credit Hours  
Minimum**

Thesis option students take 12 credit hours of electives while nonthesis students take 18 credit hours of electives which need to include either EML 6085 (Research Methods in MMAE; 3 credit hours) or EML 6908 (Direct Research; 3 credit hours). The remaining credit hours can be elected from the following list or from courses from other tracks and up to 6 credit hours from graduate courses offered in the College of Engineering and Computer Science.

- EML 5402 Turbomachinery (3 credit hours)
- EML 6155 Convection Heat Transfer (3 credit hours)
- EML 6157 Radiation Heat Transfer (3 credit hours)
- EML 6725 Computational Fluid Dynamics and Heat Transfer I (3 credit hours)
- EML 5131 Combustion Phenomena (3 credit hours)
- EML 6154 Conduction Heat Transfer (3 credit hours)
- EAS 6185 Turbulent Flow (3 credit hours)
- EML 6712 Viscous Flow (3 credit hours)
- EAS 6138 Advanced Gas Dynamics (3 credit hours)
- EAS 5302 Direct Energy Conversion (3 credit hours)
- EAS 5315 Rocket Propulsion (3 credit hours)

- EML 5025C Engineering Design Practice (3 credit hours)
- EML 5066 Computational Methods in Mechanical, Materials and Aerospace Engineering (3 credit hours)
- EML 5105 Gas Kinetics and Statistical Thermodynamics (3 credit hours)
- EML 6062 Boundary Element Methods in Engineering (3 credit hours)
- EML 6124 Two-Phase Flow (3 credit hours)
- EML 6158 Gaseous Radiation Heat Transfer (3 credit hours)
- EML 6144 Boiling and Condensation Heat Transfer (3 credit hours)
- EML 6726 Computational Fluid Dynamics and Heat Transfer II (3 credit hours)
- EML 6085 Research Methods in MMAE\* (3 credit hours)
- EML 6908 Directed Research\* (3 credit hours)

Note: nonthesis students are required to take one course with an asterisk, representing the independent learning experience for the program.

### **Thesis Option—6 Credit Hours Minimum**

- EML 6971 Thesis (6 credit hours)

The Mechanical Engineering program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options in each of the five tracks, Computer-Aided Mechanical Engineering, Mechanical Systems, Miniature Engineering Systems, Professional, and Thermofluids. The thesis options require 24 credit hours of courses, and six credit hours of thesis. The nonthesis options require 30 credit hours of courses

The thesis option requires 30 credit hours, at least half of which must be at the 6000 level and will include 6 credit hours of thesis credit. A student pursuing the thesis program may not register for thesis credit hours until an advisory committee has been appointed and the committee has reviewed the program of study and the proposed thesis topic.

The nonthesis option is primarily designed to meet the needs of part-time students and requires 30 credit hours of course work, at least one-half of which must be at the 6000 level. In addition, students pursuing the nonthesis option are required to take EML 6085 Research Methods in MMAE as part of their 30-credit-hour course requirement.

All students must identify an adviser and file an official degree program of study prior to the completion of 9 credit hours of study. Students should consult with the MMAE Graduate Director for assistance in filling out their program of study. The program of study must be met with departmental approval.

A student with an undergraduate degree outside of the selected departmental discipline may be required to satisfy an articulation program. Substitutions to the program of study must meet with the approval of the adviser and the department. More information is available from the MMAE Department.

Nonthesis students are required to take either EML 6085, Research Methods, or EML 6908 Directed Research as their independent learning experience. Either of these courses also serves as the culminating experience of the program for the nonthesis students.

## **ADMISSIONS**

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to meeting the general admission requirements, applicants must provide a bachelor's degree in Mechanical or Aerospace Engineering or a closely related field, résumé, and a statement of educational, research, and professional career objectives.

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Mechanical or Aerospace Engineering, or a closely related discipline.

- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting applicants into their research program.

Additional courses may be required to correct deficiencies. Applicants should contact the MMAE Graduate Director for more information.

Thermofluids MSME	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Program Director  
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 Telephone 407-823-3402  
 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

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# Modeling and Simulation MS

## PROGRAM DESCRIPTION

The Master of Science in Modeling and Simulation (M&S) prepares scientists who can work with interdisciplinary teams to use simulation and modeling in solving important problems in both the public and private sectors. Simulation is the quintessential utility tool. In one way or another, just about every engineering or scientific field uses simulation as an exploration, modeling, or analysis technique. Simulation is not limited to engineering or science. Simulation is used in training, management, and concept exploration and involves constructing human-centered, equipment-centered, and/or stand-alone computer-based models of

existing as well as conceptual systems or processes. The purpose of simulation is to evaluate the behavior of the human(s), organization, equipment, and/or systems under study through the evaluation of output from the corresponding simulation construct. Because of the scale and complexity of modeling and simulation, practitioners have developed both generalized and specialized skills. Input from industry and government M&S users and developers has been instrumental in identifying the key competencies for M&S professionals and has been critical to the development of this curriculum.

Graduates of the Modeling and Simulation MS program will be able to establish depth in one of seven focus areas and have the diverse training necessary to enable them to work in varied capacities in government agencies, or in the defense, entertainment, and manufacturing industries. They will have an interdisciplinary core body of knowledge on modeling approaches, human factors, computing infrastructure, and visual representation and will be capable of critically reviewing the literature in the field. They will have developed the capacity to solve complex problems by building simulation models, designing and carrying out experiments, collecting data, analyzing results, and managing M&S programs. They will be able to clearly communicate their findings to their peers.

The program offers seven focus areas from which students must choose their program of study:

- Quantitative Aspects of Simulation
- Simulation Infrastructure
- Simulation Management
- Computer Visualization in M&S
- Simulation Modeling and Analysis
- Interactive Simulation/Intelligent Systems
- Human Systems in M&S

These M&S focus areas have been identified and discussed with M&S leaders from industry and government. Each of these focus areas represents an area in which UCF has considerable faculty expertise, expertise that has developed and grown as UCF has grown with the M&S field in our community. Government and industry leaders in M&S endorse these focus areas because of their importance to the continued growth of the M&S field. For all of the focus areas, opportunities are available for students to work with researchers and M&S faculty on research and development projects. Descriptions of these focus areas are provided under the Program Curriculum section.



## CURRICULUM

The MS in Modeling and Simulation program requires a minimum of 30 credit hours beyond the bachelor's degree, and offers thesis and nonthesis options. Students in both options must take 9 credit hours of required core courses, and 6 credit hours of cornerstone courses in one or two of the seven offered focused areas of study. Students in the thesis option must take 9 credit hours of electives and 6 thesis credit hours, while students in the nonthesis option must take 15 credit hours of electives. The elective courses are contingent with the focus areas chosen.

### Total Required Hours for MS—30 Credit Hours Minimum beyond the Bachelor's Degree.

In addition to university-wide requirements for master's degrees, the Modeling and Simulation MS has special requirements because of its interdisciplinary nature. Courses will introduce students to the interdisciplinary aspects of the field and require students from different disciplines to work together in teams. Students may select from seven M&S focus areas in planning their program of study. Courses for the focus areas, including the cornerstone courses, are listed below. Cornerstone courses should be taken before the restricted electives can be taken. The culminating experience for nonthesis students in the master's program will be the project, paper, and presentation done as part of required core course, IDS 6916 Simulation Research Methods and Practicum. This project will serve as a capstone experience and will be reviewed by outside experts. For thesis-option students, the thesis and its defense serve as the culminating experience.

### Interdisciplinary Core Courses—9 Credit Hours

Three core courses provide an interdisciplinary framework for all students. Teams of program faculty teach these core courses. A brief description of the core courses follows.

- IDS 5717C Introduction to Modeling and Simulation. Introduction to the theory and practice of modeling and simulation with an emphasis on multidisciplinary scientific underpinnings. Led by one instructor augmented by a team.

- IDS 5719 Quantitative Aspects of Modeling and Simulation. An introduction to matrix algebra, probability and statistics, and high level programming languages for the M&S student who does not have a strong background in these areas. Students who have this background may select an elective instead.
- IDS 6916 Simulation Research Methods and Practicum. Pre-requisite or concurrent: ESI 5219 Engineering Statistics, PSY 6216 Advanced Research Methodology I, or equivalent. Project course in which interdisciplinary teams conduct and manage research projects on fundamental and applied issues in modeling and simulation and training. Led by one instructor and supported by a team.\*

\*This course provides the independent learning experience for the program.

### Focus Areas

#### Quantitative Aspects of Simulation Focus Area

The Quantitative Aspects of Simulation focus area caters to those who seek to develop skill in the application of advanced quantitative methods to modeling and simulation. Building on backgrounds in mathematics or statistics they will gain experience in modeling and simulation. Graduates will be able to apply mathematics and statistics to build multidisciplinary models and simulations. Typical courses include: Mathematical Modeling, Statistical Aspects of Digital Simulation, Advanced Systems Simulation, and Splines and Data Fitting.

#### Cornerstone Course

- MAP 5117 Mathematical Modeling (3 credit hours)

#### Restricted Electives

- EEL 5173 Linear Systems Theory (3 credit hours)
- EML 6062 Boundary Element Methods in Engineering (3 credit hours)
- EML 6067 Finite Elements in Mechanical, Materials, and Aerospace Engineering I (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- ESI 6529 Advanced Systems Simulation (3 credit hours)

- ESI 6546 Process Simulation (3 credit hours)
- MAP 5117 Mathematical Modeling (3 credit hours)
- MAP 6385 Applied Numerical Mathematics (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 6118 Introduction to Nonlinear Dynamics (3 credit hours)
- MAP 6207 Optimization Theory (3 credit hours)
- MAP 6408 Applied Mathematics II (3 credit hours)
- MAP 6445 Approximation Techniques (3 credit hours)
- MAP 6465 Wavelets and Their Applications (3 credit hours)
- STA 6246 Linear Models (3 credit hours)
- STA 5703 Data Mining Methodology I (3 credit hours)
- STA 6704 Data Mining Methodology II (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)
- STA 6714 Data Preparation (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 credit hours)
- STA 6246 Linear Models (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

### Simulation Infrastructure Focus Area

The Simulation Infrastructure focus area caters to those who wish to gain an in-depth understanding of the basic components of simulation systems and their patterns of configuration and communication, including hardware and software issues. They will gain experience in the development of distributed simulation and training environments. Graduates will be able to implement such systems or manage a team capable of developing such systems. Typical courses include Performance Models of Computers and Networks, Simulation Design and Analysis, High Performance Computer Architecture, and Analysis of Computer and Communication Systems.

#### Cornerstone Course

- CDA 5530 Performance Models of Computers and Networks (3 credit hours)

### Restricted Electives

- CDA 5106 Advanced Computer Architecture I (3 credit hours)
- CDA 6107 Parallel Computer Architecture (3 credit hours)
- CNT 5008 Computer Communication Networks Architecture (3 credit hours)
- COP 6615 Operating Systems Theory (3 credit hours)
- COT 5405 Design and Analysis of Algorithms (3 credit hours)
- EEL 5708 High Performance Computer Architecture (3 credit hours)
- EEL 5762 Performance Analysis of Computer and Communication Systems (3 credit hours)
- EEL 6785 Computer Network Design (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)
- EEL 6893 Continuous System Simulation II (3 credit hours)
- ISM 6217 Advanced Database Administration (3 credit hours)
- EEL 5881 Software Engineering I (3 credit hours)
- EEL 6883 Software Engineering II (3 credit hours)
- EEL 6885 Software Engineering Quality Assurance Methods (3 credit hours)

### Simulation Management Focus Area

The Simulation Management focus area caters to those who wish to gain expertise in the management of projects related to modeling, simulation, and training (MS&T). A graduate will be prepared to manage such projects for military agencies or MS&T companies. Typical courses include Environment of Technical Organizations, Modeling and Simulation of Real-Time Processes, Management Information Systems, and Project Engineering.

#### Cornerstone Course

- EIN 5108 The Environment of Technical Organizations (3 credit hours) or EIN 6528 Simulation Based Life Cycle Engineering (3 credit hours)

### Restricted Electives

- EEL 6887 Software Engineering Life-Cycle Control (3 credit hours)
- EIN 5117 Management Information Systems I (3 credit hours)

- EIN 5140 Project Engineering (3 credit hours)
- EIN 5346 Engineering Logistics (3 credit hours)
- EIN 6182 Engineering Management (3 credit hours)
- EIN 6339 Operations Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours)
- EIN 6528 Simulation-based Life Cycle Engineering (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 6358 Decision Analysis (3 credit hours)
- EML 4024C Engineering Design Practice (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)

### **Computer Visualization in M&S Focus Area**

The Computer Visualization in M&S focus area caters to those who wish to gain expertise in technical aspects of computer graphic systems, virtual environments, and human-centered simulation systems. A graduate will have knowledge and experience in applying the state-of-the-art in computer graphics and other human-interface technologies. Typical courses include Computer Graphics Systems, Computer Vision, Machine Perception, Human-Virtual Environment Interaction, and Sensation and Perception. Some students in this focus area will also have an interest in UCF's Digital Media program.

#### **Cornerstone Course**

- CAP 5725 Computer Graphics I (3 credit hours)

#### **Restricted Electives**

- CAP 5415 Computer Vision (3 credit hours)
- CAP 6411 Computer Vision Systems (3 credit hours)
- CAP 6412 Advanced Computer Vision (3 credit hours)
- EEL 5771C Engineering Applications of Computer Graphics (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 5825 Pattern Recognition (3 credit hours)
- EEL 6823 Pattern Recognition II (3 credit hours)
- EEL 6843 Machine Perception (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)

### **Simulation Modeling and Analysis Focus Area**

The Simulation Modeling and Analysis focus area caters to those who desire to gain expertise in using simulation as a tool for effective design, planning, analysis, and decision making. The emphasis of this track is on problem definition, model formulation, design of simulation experiments, and model-based analysis. A graduate will be prepared to work with corporate and government decision makers as they model and evaluate the impacts of proposed policies and system designs. Typical courses include Discrete System Simulation, Experimental Design, and Object-Oriented Simulation.

#### **Cornerstone Course**

- ESI 5531 Discrete Systems Simulation (3 credit hours)

#### **Restricted Electives**

- EEL 4890 Continuous System Simulation I (3 credit hours)
- EEL 6878 Modeling and Artificial Intelligence (3 credit hours)
- EEL 5892 Continuous System Simulation II (3 credit hours)
- EIN 6524 Simulation Modeling Paradigms (3 credit hours)
- EIN 6529 Simulation Design and Analysis (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- ESI 6529 Advanced Systems Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)
- ESI 6546 Process Simulation (3 credit hours)

### **Interactive Simulation/Intelligent Systems Focus Area**

The Interactive Simulation/Intelligent Systems focus area responds to the needs of those who wish to pursue or are currently pursuing careers in the training simulation/simulator industries. Graduates specializing in this focus area possess the basic tools to create system designs for simulators and simulator-based training systems and to apply expert systems and other intelligent systems in a simulation setting. Typical required courses include Training Systems Engineering, Simulation of Real-

Time Processes, and Intelligent Simulation.

### Cornerstone Course

- EIN 5255 Interactive Simulation (3 credit hours)

### Restricted Electives

- CAP 5512 Evolutionary Computation (3 credit hours)
- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- CAP 6637 Affective Computing with Artificial Intelligence (3 credit hours)
- EEL 5874 Expert Systems and Knowledge Engineering (3 credit hours)
- EEL 6875 Engineering of Artificial Intelligence Systems (3 credit hours)
- EEL 6876 Current Topics in Artificial Intelligence in Engineering Systems (3 credit hours)
- EEL 6878 Modeling Artificial Intelligence (3 credit hours)
- EEL 6895 Current Issues in Real-Time Simulation (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)
- EIN 5602C Expert Systems in Industrial Engineering (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6647 Intelligent Simulation (3 credit hours)
- EIN 6946 Simulation Practicum (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)
- EME 6613 Instructional Systems Design (3 credit hours)
- TTE 6270 Intelligent Transportation Systems (3 credit hours)

### Human Systems in M&S Focus Area

The Human Systems in M&S focus area caters to those who wish to gain expertise in the content and techniques of human behavior in simulation systems, including human factors, human-computer interaction, virtual worlds, statistical and quantitative procedures, experimental design, computer techniques, and other research methodologies. Typical problem areas for R&D include human-in-the-loop simulation; team

performance under stress; and use of visual, audio, haptic, and other sensory input/output modalities to coordinate human-machine activities. Typical courses include Human Factors, Training Systems Engineering, Human Computer Interaction, Intelligent Simulation, and Distributed Learning.

### Cornerstone Course

- EXP 5256 Human Factors I (3 credit hours)
- OR
- EIN 5251 Usability Engineering (3 credit hours)

### Restricted Electives

- EIN 5248C Ergonomics (3 credit hours)
- EIN 6215 System Safety Engineering and Management (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- EME 5051 Technologies of Instruction and Information Management (3 credit hours)
- EME 6457 Distance Education: Technology Process Product (3 credit hours)
- EME 6613 Instructional System Design (3 credit hours)
- EXP 5208 Sensation and Perception (3 credit hours)
- EXP 6255 Human Performance (3 credit hours)
- EXP 6257 Human Factors II (3 credit hours)
- EXP 6258 Human Factors III (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)
- EXP 6541 Advanced Human-Computer Interaction (3 credit hours)
- INP 6215 Assessment Centers and Leadership (3 credit hours)
- INP 6317 Organizational Psychology and Motivation (3 credit hours)
- INP 6605 Training and Performance Appraisal (3 credit hours)
- PSY 6216 Advanced Research Methodology I (3 credit hours)
- DIG 5647C Science and Technology of Dynamic Media (3 credit hours)

### Nonthesis Option

The nonthesis option requires 30 credit hours, including:

- Required core courses (9 credit hours)
- Cornerstone courses for two focus areas (6 credit hours)
- Electives for focus area (15 credit hours)

- No independent study, directed research, or thesis hours may be included in a program of study

### Thesis Option

The thesis option requires 30 credit hours, including:

- Required core courses (9 credit hours)
- Cornerstone courses for focus areas (6 credit hours)
- Electives from focus area (9 credit hours)
- Thesis (6 credit hours)
- IDS 6916 Simulation Research Methods and Practicum provides the independent learning experience for the program.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Students who enter the Master of Science in Modeling and Simulation program are expected to have an academic and/or work background that has prepared them in mathematics (introductory calculus and probability and statistics) and computer “literacy,” including proficiency with word processing, spreadsheet, and database programs, and, preferably, familiarity with at least one higher order programming language (e.g., C++). Students with undergraduate degrees in engineering, computer science, or mathematics will generally have this background.

For students with less technical academic preparation, the core course IDS 5719 Introduction to Quantitative Aspects of Modeling and Simulation, will prepare them to pursue several, but not all, of the focus areas. For example, these students could pursue the Simulation Management or Human Systems focus areas, but would need a number of prerequisite courses in mathematics, statistics, and computer science to pursue more technical focus areas such as Simulation Infrastructure. IDS 5719 Introduction to Quantitative Aspects of Modeling and Simulation has a math prerequisite of a one semester introductory to calculus course (e.g., MAC 2233 Concepts of Calculus or MAC 2241 Calculus for

Life Sciences).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Goal statement.
- Two letters of recommendation.

Applications are accepted for the fall and spring terms only.

Modeling and Simulation MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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# Molecular Biology and Microbiology MS

## PROGRAM DESCRIPTION

The Department of Molecular Biology and Microbiology offers the Master of Science in Molecular and Microbiology for students to further their knowledge in the field and prepare for professional careers in medical fields, higher education, and research.

## CURRICULUM

The Molecular Biology and Microbiology MS

course and credit requirements consist of a minimum of 30 credit hours including 6 credit hours of thesis, 2 credit hours of graduate seminar, BSC 6431 The Practice of Biomolecular Science (2 credit hours), and other courses as specified by the student's thesis advisory committee in the approved Program of Study. At least 24 semester hours of course work must be earned exclusive of thesis. Students are required to take the two-semester core course Structure-Function-Relationships of Biomolecular Science I and II.

### **Total Required Hours for MS—30-35 Credit Hours Minimum beyond the Bachelor's Degree.**

#### **Thesis Option—30 Credit Hours**

During the first two semesters of the thesis option, students are expected to familiarize themselves with the research programs of the faculty. Students are expected to have an in-depth discussion with at least three faculty members before choosing a laboratory for thesis research. The student and the Thesis Adviser/Major Professor will jointly recommend an advisory committee composed of at least four members. The committee composition must reflect expertise relevant to the student's thesis research and must be approved by the Graduate Committee. Students wishing to change the composition of the Thesis Advisory Committee must also obtain approval from the Graduate Committee.

#### **Required Courses—14 Credit Hours**

- BSC 6431 Practice of Biomolecular Science (2 credit hours)
- MCB 6938 Seminar (2 credit hours)
- BSC 6432 Structure-Function-Relationships of Biomolecular Science I (5 credit hours)
- BSC 6433 Structure-Function-Relationships of Biomolecular Science II (5 credit hours)

#### **Elective Courses—10 Credit Hours Minimum**

- BSC 5418 Tissue Engineering (3 credit hours)
- BSC 6407C Laboratory Methods in Molecular Biology (5 credit hours)
- IDS 5127 Foundation of Bio-Imaging Science (3 credit hours)
- MCB 5205 Infectious Processes (3 credit hours)
- MCB 5208 Cellular Microbiology: Host-Pathogen Interactions (3 credit hours)

- MCB 5225 Molecular Biology of Disease (3 credit hours)
- MCB 5505 Molecular Virology (3 credit hours)
- MCB 5527 Genetic Engineering and Biotechnology (3 credit hours)
- MCB 5654 Applied Microbiology (3 credit hours)
- MCB 5722C Methods in Biotechnology (4 credit hours)
- MCB 5932 Current Topics in Molecular Biology (3 credit hours)
- MCB 6226 Molecular Diagnostics (3 credit hours)
- MCB 6417C Microbial Metabolism (3 credit hours)
- PCB 5025 Molecular and Cellular Pharmacology (3 credit hours)
- PCB 5238 Immunobiology (3 credit hours)
- PCB 5239 Tumor Biology (3 credit hours)
- PCB 5275 Signal Transduction Mechanisms (3 credit hours)
- PCB 5937 Special Topics: Human Endocrinology (3 credit hours)
- PCB 6528 Plant Molecular Biology (3 credit hours)
- PCB 6595 Regulation of Gene Expression (3 credit hours)
- PCB 6596 Bioinformation and Genomics (3 credit hours)
- ZOO 5745C Essentials of Neuroanatomy (4 credit hours)
- ZOO 5748C Clinical Neuroanatomy (5 credit hours)

#### **Thesis—6 Credit Hours**

- MCB 6971 Thesis (6 credit hours)

#### **Examinations**

A written comprehensive examination to test the understanding of the basic concepts in the field and relevant applications is required of all students in the MS program. This comprehensive examination will use questions provided by the Program Faculty. The comprehensive examination will be offered once each in the fall and spring semesters, and may be taken a maximum of two times.

An oral thesis defense is required. The defense will be in the format of:

- A 50-minute presentation of the thesis work, including a 5-minute introduction
- A 10-minute free period for the general audience to ask questions

- A 1-hour close-door examination by the Thesis Advisory Committee and the program faculty present

Approval of the final thesis will require consent from the majority of the Program Faculty who choose to review the thesis, inclusive of the Thesis Advisory Committee. Faculty members with dissenting vote on the thesis must provide written justification. Scientific journal review criteria will be used as guidelines by the faculty to evaluate the final thesis for its appropriateness for publication in the target journal.

Students will be evaluated on the progress in thesis research by the thesis advisory committee for fall and spring. Two consecutive unsatisfactory evaluations will result in reversion to non-degree status.

### **Nonthesis Option—35 Credit Hours (Effective Fall 2008)**

The nonthesis option of the Molecular Biology and Microbiology Master of Science degree program addresses the need of applicants who wish to pursue a teaching career in secondary schools, two-year and four-year colleges or other careers without an active research role. The same rigor and quality of training currently offered to students in the thesis option will be provided to seekers of the nonthesis option. Nonthesis students are not considered for financial assistantships or tuition waiver assistance.

#### **Required Courses—18 Credit Hours**

- BSC 6431 Practice of Biomolecular Science (2 credit hours)
- BSC 6432 Structure-Function-Relationships of Biomolecular Science I (5 credit hours)
- BSC 6433 Structure-Function-Relationships of Biomolecular Science II (5 credit hours)
- BSC 6407C Laboratory Methods in Molecular Biology (4 credit hours)
- MCB 6938 Seminar (2 credit hours)

#### **Electives with Biomedical Sciences Focus—6 Credit Hours**

- MCB 5225 Molecular Biology of Disease (3 credit hours)
- MCB 5527 Genetic Engineering and Biotechnology (3 credit hours)
- MCB 6226 Molecular Diagnostics (3 credit hours)
- PCB 5238 Immunobiology (3 credit hours)
- PCB 5239 Tumor Biology (3 credit hours)

- PCB 5275 Signal Transduction Mechanisms (3 credit hours)
- PCB 6528 Plant Molecular Biology (3 credit hours)

#### **Electives with Microbiology Focus—6 Credit Hours**

- MCB 5205 Infectious Processes (3 credit hours)
- MCB 5505 Molecular Virology (3 credit hours)
- MCB 5654 Applied Microbiology (3 credit hours)
- MCB 6417C Microbial Metabolism (3 credit hours)

#### **Capstone Experience—5 Credit Hours**

- MCB 6XXX Capstone Course (5 credit hours)

An in-depth current literature research report on a relevant subject will be required for each student in the final semester of study. The student will select a faculty adviser to chair a faculty committee of three members for evaluation of the report.

#### **Examination and Professional Writing Requirements**

- Students must pass a comprehensive exam to qualify for the Master of Science degree.

An oral presentation on the written capstone report will be used as a final examination. A majority of the program faculty must be present for the final examination. Before graduation, the report should be submitted for consideration of publication as a review article in appropriate journals.

#### **Teaching Requirement**

Students without significant prior teaching experience, such as but not limited to a minimum of a year in secondary schools or colleges, are required to serve as Graduate Teaching Assistants for a minimum of two semesters.

The capstone course will provide an in-depth current literature research report on a relevant subject will be required for each student in the final semester of study as serve as the independent learning experience for those choosing the nonthesis option. The student will select a faculty adviser to chair a faculty committee of three members for evaluation of the report.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- A written statement of research experience, area of interest, and immediate and long-range goals.

Applicants who fail to meet either the minimum program GPA or GRE requirement may occasionally be accepted if there is other convincing evidence of potential for high achievement and success. Applicants failing to satisfy minimum program criteria should submit a GRE Subject Biochemistry, Cell and Molecular Biology Test score at or above the 50th percentile. In no case will GRE scores (verbal, quantitative, or advanced) older than five years be accepted.

Applicants need not have an undergraduate degree in molecular biology or microbiology but are expected to have the equivalent of 16 semester hours of credit in the biological sciences including a course in general microbiology, biochemistry or molecular biology or cell biology, plus one year of organic chemistry, one year of physics, basic university mathematics and statistics, and laboratory skills equivalent to the minimum required of our own undergraduates. Minor deficiencies may be remedied after acceptance by enrollment at the first opportunity in an appropriate course.

Molecular Biology and Microbiology MS	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15		

Molecular Biology and Microbiology MS	Fall Priority	Fall	Spring	Summer
International Transfer Applicants	Jan 15	Mar 1		

## CONTACT INFO

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 Program Director  
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 Telephone 407-823-0955  
 Department of Molecular Biology and Microbiology  
 BMS 221

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## Music MA

### PROGRAM DESCRIPTION

The Master of Arts in Music program is intended to provide additional study and training in music to individuals who already hold a bachelor's degree in music or the equivalent. The general nature of this degree allows students to pursue a variety of interests within music, such as performance, conducting, jazz studies, music education, and composition. The philosophy of this program is to provide graduate students with the advanced education, skills, and credentials to enhance their professional abilities and opportunities.

### CURRICULUM

The Music MA program requires a minimum of 30-34 credit hours beyond the bachelor's degree. Students must take 11 credit hours of required core music courses and 17 credit hours of elective courses. Students must also take a Recital or Research Report course (2 credit hours) or the Thesis option (6 credit hours). Students planning on pursuing a doctoral degree are encouraged to select the Thesis option.



## **Total Required Hours for MA—30-34 Credit Hours Minimum beyond the Bachelor's Degree.**

### **Required Core Courses—11 Credit Hours**

- MUH 6916 Bibliography and Research Methods (3 credit hours)
- MUH 6935 Music History Seminar (3 credit hours)
- MUT 6621 Techniques and Concepts of Musical Analysis (3 credit hours)
- MUN 5XXX Ensemble Performance (two semesters, 2 credit hours) or MVX 5XXX Performance (one semester; audition, 2 credit hours)

Students planning to pursue a doctoral degree are strongly encouraged to select the thesis option. The capstone project may be a recital in performance, composition, or conducting; or a written project of smaller scope than a thesis; e.g., a portfolio or research paper for music teachers.

### **Music Electives—9 Credit Hours**

Course selections in this area will be in a cognate or area of emphasis with approval by program adviser (Performance, Conducting, Composition, Music History, Music Theory, Music Education, Jazz Studies, etc.).

- MUH 6935 Music History Seminar (3 credit hours)
- MUE 5348C K-12 Music Methods (4 credit hours)
- MUE 6175 Teaching Music Performance (3 credit hours)
- MUE 6349 Advanced General Music (3 credit hours)
- MUG 6106 Advanced Conducting I (2 credit hours)
- MUG 6107 Advanced Conducting II (2 credit hours)
- MUG 6306 Conducting VI (audition) (2 credit hours)
- MVX 6XXX Performance VI (audition) (2 credit hours)
- MUC 6251 Composition VI (portfolio) (2 credit hours)
- MVX 5XXX Performance (audition) (2 credit hours)
- MUC 5112 Composition (portfolio) (2 credit hours)

- MUG 5112 Advanced Conducting (audition) (2 credit hours)
- MUS 5677 Wellness for the Performing Musician (3 credit hours)
- MUT 5936 Music Theory Seminar (3 credit hours)
- MUH 5326 Medieval/Renaissance Music (3 credit hours)
- MUH 5345 Music of the Baroque (3 credit hours)
- MUH 5356 Eighteenth-Century Music (3 credit hours)
- MUH 5365 Nineteenth-Century Music (3 credit hours)
- MUH 5375 Music Since 1900 (3 credit hours)
- MUT 5816 Jazz Styles and Analysis (3 credit hours)
- MUS 5365 Music and Technology (3 credit hours)
- MUT 5381 Arranging and Composing Music (3 credit hours)
- MUM 5806 Performing Arts Management (3 credit hours)
- MUN 5478L Early Music Ensemble (1 credit hour)
- MUN 5368L Graduate Madrigal Singers (1 credit hour)
- MUN 5385L Graduate University Chorus (1 credit hour)
- MUN 5325 Graduate Women's Chorus (1 credit hour)
- MUO 5505L Graduate Opera Workshop (1 credit hour)
- MUN 5465L Graduate Chamber Music (1 credit hour)
- MUN 5145 Wind Ensemble (1 credit hour)
- MUN 5215 Symphony Orchestra (1 credit hour)
- MUN 5125 Concert Band (1 credit hour)
- MUN 5445 Percussion Ensemble (1 credit hour)

### **Elective Studies in Supportive Areas—8 Credit Hours**

- 5000- or 6000-level music courses or non-music courses with approval of adviser; may include any new or repeatable courses from the sections above.
- MUS 6105 Musicianship I (3 credit hours)
- MUS 6106 Musicianship II (3 credit hours)
- MUS 6107 Musicianship III (3 credit hours)
- MVO 5250 Advanced Secondary Instruction (1 credit hour)

- MUS 5907 Independent Study (1–3 credit hours)

**Choose between:**

**Nonthesis Option—2 Credit Hours**

- MUS 6976L Graduate Recital (2 credit hours) or MUS 6975L Graduate Project (2 credit hours)

**Thesis Option—6 Credit Hours**

- MUS 6971 Thesis (6 credit hours)

**Additional Program Requirements**

- Performance VI, Conducting VI, and ensembles all require an audition.
- Composition VI requires submission of a portfolio.
- No more than 6 credit hours of MUN courses may be counted toward the degree.
- A minimum of 15 credit hours applied to the degree must be at the 6000 level.

**Equipment Fee**

Students in the Master of Arts in Music Program pay a \$90 equipment fee each semester that they are enrolled.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in music or the equivalent from a NASM accredited school.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.
- The MA Supplemental Application, which can be found on the department website or mailed at the applicant's request.
- An Admission Examination with a faculty committee. This examination will consist of an interview and audition or portfolio review

as appropriate according to the applicant's goals. The applicant will consult with the Graduate Coordinator in advance to prepare for presentation in appropriate areas of interest to the candidate, such as performance, conducting, composition, music history, etc. It is highly recommended to attend this examination in person, although the use of audio and/or video recordings is possible, with the permission of the Graduate Coordinator. The faculty committee will evaluate the candidate and make a recommendation regarding admission to the Music Department Chair, who will make the final decision.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals and the applicant's potential for completing the degree.

Applicants may be given tentative admission, conditional to the imminent completion of the bachelor's degree and submission of a final transcript.

After acceptance and before beginning course work, students will take placement exams in Aural Comprehension, Music Theory and Music History. If remedial course work is required in the case of deficiencies, this will not count toward the total hours for the degree.

Students may transfer up to nine hours of graduate credit from another accredited institution, subject to approval of adviser.

Music MA	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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 Program Director  
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 Department of Music  
 Colbourn Hall 205

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# Nonprofit Management MNM

- Out of State MNM Cohort

## PROGRAM DESCRIPTION

The nonprofit sector is the fastest growing area of the economy, and the completely online Master of Nonprofit Management MNM program prepares students for careers in this dynamic field. The degree program provides opportunities for students to prepare for employment or to advance their careers as administrators in nonprofit organizations. The program is intended to produce graduates equipped with the management skills and analytical skills needed for successful careers in the nonprofit sector.

## CURRICULUM

The Nonprofit Management MNM program requires a minimum of 33 credit hours beyond the bachelor's degree and offers thesis and nonthesis options. Both options require 27 credit hours of core courses, and then 6 credit hours of either thesis work or electives.

### Total Hours Required for MNM—33 Credit Hours Minimum beyond the Bachelor's Degree.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects, such as strategic plans, program evaluation plans, volunteer management case studies, grant proposals, scholarly papers, and internships also contribute to the self-development of our students. For the thesis option, the student will conduct a research project in a particular specialization within the profession in order to acquire knowledge and skills pertaining to research-

based best practices in that specialization area.

### Core Courses—27 Credit Hours

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques\* (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)

\*This course is the independent learning experience for the program, covering the research process and applying analytical techniques to a real organization.

### Thesis Option—6 Credit Hours

Students may choose to do a thesis with the consent of the academic adviser. PAD 6971 Thesis Research, is designed to guide students in conducting research in the area of nonprofit management. For this option, students select a thesis committee and write a research proposal consisting of a literature review and a detailed methodological plan. Once the proposal is approved, students collect, analyze, and interpret data and write a thesis. Students must present and defend their research to their committee and peers to complete the requirements for this option.

### Elective Option—6 Credit Hours

Students may take two elective courses (three hours each) with the prior approval of the program director. The elective courses are to be in the student's area of interest, such as public administration, criminal justice, health care, social work or the arts. The MNM program does not accept 4000-level courses.

### Additional Program Requirements

Students must achieve a grade of "B" (3.0) or better

in every course listed under core requirements. Students must maintain a graduate status of GPA of 3.0 or higher.

Independent learning is demonstrated throughout the curriculum through the process of inquiry, dialogue and service learning. Tangible projects such as strategic plans, grant proposals, and volunteer management case studies along with research projects, scholarly papers, internships, and presentations at professional conferences also contribute to the self development of our students. The final culminating experience for those enrolled in the Master of Nonprofit Management results in student taking and satisfactorily completing the Program Evaluation course (PAD 6327).

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

Students must submit all required material by the established deadline(s).

Students are expected to be computer literate upon entry to the program or are expected to obtain these skills immediately upon admission to the program. This program is completely online, so computer skills and computer internet access are necessary to take the courses.

A limited number of students who do not meet these requirements may be admitted on a provisional basis. These students must demonstrate proven nonprofit sector leadership experience, present strong recommendations from either academic or professional advisers, and provide a clear statement of educational goals. More specific information on provisional admissions may be obtained from the department. Provisional admissions are limited and competitive. Students who are interested in these

spots should contact the department as early as possible for consideration.

Nonprofit Management MNM	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

Mary Ann Feldheim PhD  
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Program Director  
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Department of Public Administration  
Health and Public Affairs II 238

### *Nonprofit Management MNM*

## Out of State MNM Cohort

### TRACK DESCRIPTION

The nonprofit sector is the fastest growing area of the economy, and the completely online Master of Nonprofit Management Out of State Cohort MNM program prepares students for careers in this dynamic field. The degree program provides opportunities for students to prepare for employment or to advance their careers as administrators in nonprofit organizations.

### CURRICULUM

*For Non-Florida Residents, Out-of-State Students*

**Total Hours Required for MNM—33  
Credit Hours Minimum beyond the Bachelor's Degree.**

The Master in Nonprofit Management Cohort Track is designed specifically for students who are not Florida residents. The admission standards and degree requirements are the same as the traditional program. Students interested in the out-of-state Master of Nonprofit Management cohort should contact the Department of Public Administration at (nonprofit@mail.ucf.edu).

### **Core Courses—27 Credit Hours**

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

### **Thesis Option—6 Credit Hours**

Students may choose to do a thesis with the consent of the academic adviser. PAD 6971 Thesis Research, is designed to guide students in conducting research in the area of nonprofit management. For this option, students select a thesis committee and write a research proposal consisting of a literature review and a detailed methodological plan. Once the proposal is approved, students collect, analyze, and interpret data and write a thesis. Students must present and defend their research to their committee and peers to complete the requirements for this option.

### **Elective Option—6 Credit Hours**

Students may take two elective courses (three hours each) with the prior approval of the program director. The elective courses are to be in the student's area of interest, such as public administration, criminal justice, health care, social work or the arts. The MNM program does not accept 4000-level courses.

### **Additional Program Requirements**

Students must achieve a grade of "B" (3.0) or better in every course listed under core requirements. Students must maintain a graduate status GPA of 3.0 or higher.

### **Total Hours Required for MNM—33 Credit Hours Minimum beyond the Bachelor's Degree.**

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Tangible projects, such as strategic plans, program evaluation plans, volunteer management case studies, grant proposals, scholarly papers, and internships also contribute to the self-development of our students. For the thesis option, the student will conduct a research project in a particular specialization within the profession in order to acquire knowledge and skills pertaining to research-based best practices in that specialization area.

### **Core Courses—27 Credit Hours**

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques\* (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)

\*This course is the independent learning experience for the program, covering the research process and applying analytical techniques to a real organization.

### **Thesis Option—6 Credit Hours**

Students may choose to do a thesis with the consent of the academic adviser. PAD 6971 Thesis Research, is designed to guide students in conducting research in the area of nonprofit

management. For this option, students select a thesis committee and write a research proposal consisting of a literature review and a detailed methodological plan. Once the proposal is approved, students collect, analyze, and interpret data and write a thesis. Students must present and defend their research to their committee and peers to complete the requirements for this option.

### Elective Option—6 Credit Hours

Students may take two elective courses (three hours each) with the prior approval of the program director. The elective courses are to be in the student's area of interest, such as public administration, criminal justice, health care, social work or the arts. The MNM program does not accept 4000-level courses.

### Additional Program Requirements

Students must achieve a grade of "B" (3.0) or better in every course listed under core requirements. Students must maintain a graduate status of GPA of 3.0 or higher.

Independent learning is demonstrated throughout the curriculum through the process of inquiry, dialogue and service learning. Tangible projects such as strategic plans, grant proposals, and volunteer management case studies along with research projects, scholarly papers, internships, and presentations at professional conferences also contribute to the self development of our students. The final culminating experience for those enrolled in the Master of Nonprofit Management results in student taking and satisfactorily completing the Program Evaluation course (PAD 6327).

## ADMISSIONS

In addition to the general admission requirements, applicants must provide three letters of recommendation, a résumé, and a statement of goals.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

Students must submit all required material by the established deadline(s).

Students are expected to be computer literate upon entry to the program or are expected to obtain these skills immediately upon admission to the program. This program is completely online, so computer skills and computer internet access are necessary to take the courses.

A limited number of students who do not meet these requirements may be admitted on a provisional basis. These students must demonstrate proven nonprofit sector leadership experience, present strong recommendations from either academic or professional advisers, and provide a clear statement of educational goals. More specific information on provisional admissions may be obtained from the department. Provisional admissions are limited and competitive. Students who are interested in these spots should contact the department as early as possible for consideration.

Out of State MNM Cohort	Fall Priority	Fall	Spring	Summer
Domestic Applicants Out-of-State Master of Nonprofit Management Cohort Track	Jan 15	Jul 15	Dec 1	Apr 15
International Applicants	Jan 15	Jan 15	Jul 1	Nov 1
International Transfer Applicants	Jan 15	Mar 1	Sep 1	Dec 15

## CONTACT INFO

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Department of Public Administration  
Health and Public Affairs II 238

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## Nursing MSN

- Adult Nurse Practitioner MSN
- Clinical Nurse Leader MSN
- Clinical Nurse Specialist MSN

- Family Nurse Practitioner MSN
- Leadership and Management MSN
- Nurse Educator MSN
- Pediatric Nurse Practitioner MSN

## PROGRAM DESCRIPTION

The Master of Science in Nursing (MSN) programs are designed to build upon the student's baccalaureate nursing education and professional experience. The Master of Science in Nursing programs are accredited by the Commission on Collegiate Nursing Education (CCNE).

The programs prepare students to:

- Analyze social, economic, ethical, cultural, legal, and political issues influencing nursing practice and health care in a global context.
- Collaborate with leaders in nursing and other disciplines to improve the quality of professional nursing practice and the health care system.
- Develop and implement leadership, management, and teaching strategies for the improvement of health and health care.
- Develop practice models of evidence-based nursing practice incorporating nursing research.
- Influence health and public policy to improve health of communities.
- Participate in lifelong learning activities.
- Participate in research and disseminate research findings through presentation and publication.
- Synthesize advanced knowledge from the sciences, humanities, and nursing theories to support advanced nursing practice.
- Plan, evaluate and implement the delivery of health care using critical thinking skills.
- Practice in an advanced nursing role.

In addition to the MSN for students holding a baccalaureate nursing degree, the College of Nursing also offers admission to its master degree programs in nursing to Registered Nurses who have bachelor degrees in fields other than nursing. These students will need to take approximately 12–15 credits of undergraduate upper division course work that is prerequisite for graduate study in nursing.

The College also offers an RN to MSN plan of study that provides an accelerated program for RNs (registered nurses) who do not hold a baccalaureate degree but have met general educational requirements. Students admitted under this plan of study will complete requirements for both the BSN and MSN programs. See Accelerated RN to MSN

program below for more information.

The goal of the Master of Science in Nursing program is to prepare advanced practice nurses, nurse educators, and nursing leaders and managers to assume leadership positions in a variety of health care settings. Graduates of these programs are eligible to sit for national certification examinations in their respective specialties.

## CURRICULUM

Students must complete a minimum of 36-49 credit hours of graduate-level course work, depending on track.

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours

### **Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.**

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

## Retaking Clinical Didactic Courses

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

## Unsatisfactory Grade in Clinical Courses

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

## Probation

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

## Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

## Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours



## Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

## Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of "C" or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or

decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Nursing MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Health and Public Affairs 1 220 B

*Nursing MSN*

# Adult Nurse Practitioner MSN

## TRACK DESCRIPTION

The Master of Science in Nursing (MSN) programs build upon the student's baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

## CURRICULUM

### Total Required Hours for MSN—47 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

### Adult Nurse Practitioner—47 Credit Hours

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)
- NGR 5744 Health Care Systems, Policy and Health Professionals (1 credit hour)
- NGR 5746 Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing (1 credit hour)

- NGR 5745 Professional Obligations and Activities of Advanced Practice Nursing (1 credit hour)
- NGR 6240 Adult I for APNs (3 credit hours)
- NGR 6240L Adult I Clinical for APNs (3 credit hours)
- NGR 6242 Adult II for APNs (2 credit hours)
- NGR 6242L Adult II Clinical for APNs (2 credit hours)
- NGR 6334 Women's Health for APNs (2 credit hours)
- NGR 6482L Women's Health for APNs Clinical (1 credit hour)
- Graduate Elective (3 credit hours)
- NGR 6813 Evidenced Based Practice (Research Scholarly Work) (3 credit hours)
- NGR 6941 Advanced Practice Practicum (7 credit hours)

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

## Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### **Retaking Clinical Didactic Courses**

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### **Unsatisfactory Grade in Clinical Courses**

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### **Probation**

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

### **College of Nursing Master's Program Handbook**

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for

academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### **Equipment Fee**

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### **ACCELERATED RN TO MSN PROGRAM**

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

### **Courses Taken Toward BSN**

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

## Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

## Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

To study full-time, applicants to the nurse practitioner track should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles. The nurse practitioner programs prepare primary care nurse practitioners.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor's degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.
- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor's degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant's abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF's master's programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Adult Nurse Practitioner MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 College of Nursing  
 Health and Public Affairs 1 220 B

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### *Nursing MSN*

## Clinical Nurse Leader MSN

### TRACK DESCRIPTION

The Master of Science in Nursing (MSN) programs build upon the student's baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

### CURRICULUM

#### **Total Hours Required for MSN—39 Credit Hours Minimum beyond the Bachelor's Degree.**

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN

track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

### **Required Courses for Clinical Nurse Leader—39 Credit Hours**

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 6813 Evidence Based Practice (Scholarly Project) (3 credit hours)
- NGR 5003 Advanced Health Assessment (2 credit hours)
- NGR 5004L Advanced Health Assessment Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for ANP (3 credit hours)
- NGR 6192 Pharmacology for ANP (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 6105 Management of Symptoms and Outcome (3 credit hours)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 6722 Financial Management and Resource Development (3 credit hours)
- NGR 6775L CNL Resources and Outcomes (1 credit hour)
- NGR 6874 Nursing Environment Management (3 credit hours)
- NGR 6777L CNL Quality and Safety (1 credit hour)
- NGR 6776L CNL Advocacy and Education (1 credit hour)
- NGR 6773L CNL Internship/Residency (3 credit hours)

### **College of Nursing Master's Program Handbook**

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### **Equipment Fee**

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### **Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.**

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### **Retaking Clinical Didactic Courses**

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### **Unsatisfactory Grade in Clinical Courses**

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### **Probation**

If a master's student is placed on probation:

- The student must meet with his or her adviser.

- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

## Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator

tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

## Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

## Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)

- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

## Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to

published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

To study full-time, applicants to the clinical nurse leader track should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.
- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF’s master’s programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited,



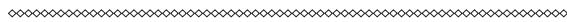
not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Clinical Nurse Leader MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

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*Nursing MSN*

**Clinical Nurse Specialist MSN**

**TRACK DESCRIPTION**

The Master of Science in Nursing (MSN) programs build upon the student’s baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

**CURRICULUM**

**Total Required Hours for MSN—46 Credit Hours Minimum beyond the Bachelor’s Degree.**

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

**Courses for Clinical Nurse Specialist—46 Credit Hours**

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)
- NGR 6752 Clinical Nurse Specialist I (3 credit hours)
- NGR 6752L Clinical Nurse Specialist I Practicum (3 credit hours)
- NGR 6753 Clinical Nurse Specialist II (2 credit hours)
- NGR 6753L Clinical Nurse Specialist II Practicum (3 credit hours)
- NGR 6722 Financial Management and Resource Development (3 credit hours)
- Graduate Elective (3 credit hours)
- NGR 6813 Evidence-Based Practice (Research Scholarly Work) (3 credit hours)
- NGR 6941 Advanced Practice Practicum (5 credit hours)

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### Retaking Clinical Didactic Courses

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent

study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### Unsatisfactory Grade in Clinical Courses

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### Probation

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met

undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

### **Courses Taken Toward BSN**

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

### **Courses Shared BSN/MSN**

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

### **Courses Taken Toward MSN**

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours

- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF’s master’s programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

To study full-time, clinical nurse specialist applicants should apply for spring admission. Part-time plans of study are available for both fall and spring admission cycles. The clinical nurse specialist program is an acute care clinical specialist program.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Clinical Nurse Specialist MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

**CONTACT INFO**

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 College of Nursing  
 Health and Public Affairs 1

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*Nursing MSN*

## Family Nurse Practitioner MSN

**TRACK DESCRIPTION**

The Master of Science in Nursing (MSN) programs build upon the student's baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

**CURRICULUM**

### Total Required Hours for MSN—49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

### Courses for Family Nurse Practitioner—49 Credit Hours

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)

- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)
- NGR 5744 Health Care Systems, Policy and Health Professionals (1 credit hour)
- NGR 5746 Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing (1 credit hour)
- NGR 5745 Professional Obligations and Activities of Advanced Practice Nursing (1 credit hour)
- NGR 6240 Adult I for APNs (3 credit hours)
- NGR 6240L Adult I Clinical for APNs (3 credit hours)
- NGR 6242 Adult II for APNs (2 credit hours)
- NGR 6331 Pediatrics I for APNs (2 credit hours)
- NGR 6331L Pediatrics I Clinical for APNs (2 credit hours)
- NGR 6334 Women's Health for APNs (2 credit hours)
- NGR 6482L Women's Health for APNs Clinical (1 credit hour)
- Graduate Elective (3 credit hours)
- NGR 6813 Evidenced Based Practice (Research Scholarly Work) (3 credit hours)
- NGR 6941 Advanced Practice Practicum (7 credit hours)

### College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

**Equipment Fee**

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### Total Required Hours for MSN—36- 49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement

for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### **Retaking Clinical Didactic Courses**

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### **Unsatisfactory Grade in Clinical Courses**

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### **Probation**

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.

- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## **College of Nursing Master's Program Handbook**

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### **Equipment Fee**

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## **ACCELERATED RN TO MSN PROGRAM**

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

### Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

### Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

### Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
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- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

To study full-time, applicants to the nurse practitioner track should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles. The nurse practitioner programs prepare primary care nurse practitioners.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.
- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF’s master’s programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Family Nurse Practitioner MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 ucfnurse@mail.ucf.edu  
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 Health and Public Affairs 1 220 B

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*Nursing MSN*

## Leadership and Management MSN

### TRACK DESCRIPTION

The Master of Science in Nursing (MSN) programs build upon the student’s baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).



## CURRICULUM

### Total Required Hours for MSN—36 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

### Courses for Nursing Leadership and Management—36 Credit Hours

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 5744 Health Care Systems, Policy and Health Professionals (1 credit hour)
- NGR 5746 Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing (1 credit hour)
- NGR 5745 Professional Obligations and Activities of Advanced Practice Nursing (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours)
- NGR 6874 Nursing Environment Management (3 credit hours)
- NGR 6722 Financial Management and Resource Development (3 credit hours)
- NGR 6723 Nursing Leadership and Management I (3 credit hours)
- Graduate Elective (3 credit hours)
- NGR 6813 Evidenced Based Practice (Research Scholarly Work) (3 credit hours)
- NGR 6723L Nursing Leadership Role Specialization Practicum I (3 credit hours)
- NGR 6946 Nursing and Leadership Management Internship (3 credit hours)

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### Retaking Clinical Didactic Courses

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent

study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

## Unsatisfactory Grade in Clinical Courses

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

## Probation

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

## Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met

undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

## Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

## Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

### Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours

- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

### ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

Students are admitted to the programs in fall and spring semesters. To study full-time, applicants to the leadership/management track should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.

- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF’s master’s programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Leadership and Management MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

## CONTACT INFO

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 Health and Public Affairs 1

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### Nursing MSN

## Nurse Educator MSN

### TRACK DESCRIPTION

The Master of Science in Nursing (MSN) programs build upon the student’s baccalaureate nursing education and professional experience. The Master of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

### CURRICULUM

#### Total Hours Required for MSN—36 Credit Hours Minimum beyond the Bachelor’s Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

#### Required Courses for Nurse Educator—36 Credit Hours

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 5141 Pathophysiological Bases for ANP (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 6192 Pharmacology for ANP (3 credit hours)

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 6715 Application of Instructional Technology for Nursing Education (3 credit hours)
- NGR 6938 ST: Teaching Strategies for Nursing (3 credit hours)
- NGR 6710 Curriculum Development in Nursing Education (3 credit hours)
- NGR 6813 Evidence-Based Nursing Practice (Scholarly Project) (3 credit hours)
- NGR 6946 Internship/Residency in Nursing Education (3 credit hours)

### **Electives—3 Credit Hours**

Select one course from the list below:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours)
- NGR 6714 Clinical Teaching Strategies for Nursing Education (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6259 Learning Theories Applied to Instruction (3 credit hours)
- EDG 6236 Principles of Instruction and Learning (3 credit hours)
- NGR 6105 Management of Symptoms and Outcome (3 credit hours)
- NGR 6938 ST: Client Health Empowerment (3 credit hours)

### **College of Nursing Master's Program Handbook**

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### **Equipment Fee**

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### **Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.**

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I
- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### **Retaking Clinical Didactic Courses**

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### **Unsatisfactory Grade in Clinical Courses**

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### **Probation**

If a master's student is placed on probation:

- The student must meet with his or her adviser.

- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

## Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator

tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

## Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

## Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)

- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

## Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to

published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

Students are admitted to the programs in fall and spring semesters. Nurse Educator track students are also admitted in the summer. To study full-time, applicants to the nurse educator track should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.
- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI fingerprinting and certified background checks, and the match of UCF’s master’s programs with

career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

Nurse Educator MSN	Fall Priority	Fall	Spring	Summer
Domestic Applicants	Jan 15	Jul 15	Nov 14	
International Applicants	Jan 15	Jan 15	Jul 1	
International Transfer Applicants	Jan 15	Mar 1	Sep 1	

### CONTACT INFO

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*Nursing MSN*

## Pediatric Nurse Practitioner MSN

### TRACK DESCRIPTION

The Master of Science in Nursing (MSN) programs build upon the student's baccalaureate nursing education and professional experience. The Master

of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE).

### CURRICULUM

#### Total Required Hours for MSN—47 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

#### Courses for Pediatric Nurse Practitioner—47 Credit Hours

- NGR 5800 Theory for Advanced Practice Nursing (3 credit hours)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 6801 Research Methodology for Advanced Practice Nursing (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)
- NGR 5744 Health Care Systems, Policy and Health Professionals (1 credit hour)
- NGR 5746 Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing (1 credit hour)
- NGR 5745 Professional Obligations and Activities of Advanced Practice Nursing (1 credit hour)
- NGR 6331 Pediatrics I for APNs (2 credit hours)
- NGR 6331L Pediatrics I Clinical for APNs (2 credit hours)
- NGR 6332 Pediatrics II for APNs (3 credit hours)
- NGR 6332L Pediatrics II Clinical for APNs (3 credit hours)



- NGR 6335 Focused Pediatrics for APNs (2 credit hours)
- NGR 6335L Focused Pediatrics Clinical for APNs (1 credit hours)
- Graduate Elective (3 credit hours)
- NGR 6813 Evidenced Based Practice (Research Scholarly Work) (3 credit hours)
- NGR 6941 Advanced Practice Practicum (7 credit hours)

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### Equipment Fee

Students in the Master of Science in Nursing Program pay a \$90 equipment fee each semester that they are enrolled.

### Total Required Hours for MSN—36-49 Credit Hours Minimum beyond the Bachelor's Degree.

An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

The following are considered to be clinical practice theory courses:

- NGR 6240 Adult I for APNs
- NGR 6242 Adult II for APNs
- NGR 6331 Pediatrics I for APNs
- NGR 6332 Pediatrics II for APNs
- NGR 6334 Women's Health for APNs
- NGR 6335 Focused Pediatrics for APNs
- NGR 6723 Nursing Leadership and Management I

- NGR 6724 Nursing Leadership and Management II
- NGR 6752 Clinical Nurse Specialist I
- NGR 6753 Clinical Nurse Specialist II

### Retaking Clinical Didactic Courses

If a master's student is required to retake a didactic course that has a related clinical course, even though the student passes the related clinical course, the student will be required to take an independent study for the same amount of credits of the related clinical course in a related clinical practice area concurrent with retaking the didactic course.

### Unsatisfactory Grade in Clinical Courses

An unsatisfactory grade in any graduate clinical course, laboratory, independent study, practicum or internship/residency must be reviewed by the Master's APG Committee and is reason for dismissal.

### Probation

If a master's student is placed on probation:

- The student must meet with his or her adviser.
- The student may not enroll in clinical practice courses unless approved by the Master's APG Committee.
- The student's progress will be reevaluated by the Master's APG Committee each semester after grades are in and before Add/Drop.
- The student will receive notification in writing and copies of the notification will be placed in the student's file and sent to the student's adviser, the clinical placement coordinator, and the track coordinator.

## College of Nursing Master's Program Handbook

All master's students are required to read the College of Nursing Master's Program Handbook regarding policies for each program and for academic progression. Information about each program particularly clinical placements and forms for appeals to the Master's APG Committee are located in the handbook.

### Equipment Fee

Students in the Master of Science in Nursing

Program pay a \$90 equipment fee each semester that they are enrolled.

## ACCELERATED RN TO MSN PROGRAM

*See also the Undergraduate Catalog.*

The RN to MSN plan is a program for RNs who do not hold a baccalaureate degree in Nursing (BSN). This program is designed for students who have met undergraduate general education requirements, have demonstrated above-average performance in prior undergraduate course work (minimum of 3.0 grade point average), and have the potential for success in graduate school (GRE combined verbal and quantitative scores of 900). Students will meet both BSN and MSN objectives.

Available for all tracks in the graduate program: Nursing Leadership and Management, Family Nurse Practitioner, Adult Nurse Practitioner, Pediatric Nurse Practitioner, Clinical Nurse Leader, Nurse Educator, and Clinical Nurse Specialist. Up to 9 credit hours of graduate course work taken while in the BSN program can be applied to the Nurse Practitioner, Clinical Nurse Leader, Nursing Leadership and Management, and Nurse Educator tracks in the MSN program and up to 12 credit hours of graduate course work taken while in the BSN program can be applied to the Clinical Nurse Specialist Track.

### Courses Taken Toward BSN

- NUR 3805 Dimensions of Professional Nursing Practice (3 credit hours)
- NUR 3165 Nursing Research (3 credit hours)
- NUR 3634 Community Health Nursing (3 credit hours)
- NUR 4XXX Public Health Nursing (2 credit hours)
- NUR 4XXX Community/Public Health Nursing Practicum for RNs (4 credit hours)
- NUR 4837 Health Care Issues, Policy, and Economics (3 credit hours)

Students in Nurse Educator, Clinical Nurse Leader and Nurse Practitioner Tracks take:

- NUR 4XXX Leadership, Management, and Role Development (3 credit hours)

Students in Nursing Leadership and Management Track take:

- NUR 3065 and 3065 L Health Assessment (3 credit hours)

Validated credit for previous nursing courses—26 Credit Hours

### Courses Shared BSN/MSN

An individualized plan of study is developed for each student admitted to the RN to MSN option. Students pursuing the MSN in the Nursing Leadership and Management track must take the following courses:

- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5871 Health Care Informatics (3 credit hours) (for undergraduate elective)
- NGR 5800 Theory for APN (3 credit hours) or NGR/HSA graduate elective in area of concentration (e.g., nursing, health services administration for nursing elective)

Students pursuing the MSN in the Family/Adult/Pediatric Nurse Practitioner, Nurse Educator, or Clinical Nurse Leader tracks must take the following courses:

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (for undergraduate nursing elective and prerequisite for NGR 5003 and 5004L) (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

Students pursuing the MSN in the Clinical Nurse Specialist track must take the following courses:

- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 5800 Theory for APN (3 credit hours)

### Courses Taken Toward MSN

Students will follow the degree requirements of the selected MSN track. The baccalaureate degree will be awarded when program requirements for the BSN are met and students have completed a minimum of 120 hours of credit. Grades of “C” or lower will not be accepted for the MSN degree requirements. Students must apply online to the UCF College of Graduate Studies for admission to

the MSN program. The MSN will be awarded on completion of the total program of study. Students who do not meet ongoing program requirements or decide not to continue in the program may withdraw from the RN to MSN plan and complete course work for the BSN degree. The MSN tracks require students to complete a different number of hours depending upon the track:

- Nursing Leadership and Management—36 Credit Hours
- Adult or Pediatric Nurse Practitioner—47 Credit Hours
- Family Nurse Practitioner—49 Credit Hours
- Clinical Nurse Specialist—46 Credit Hours
- Clinical Nurse Leader—39 Credit Hours
- Nurse Educator—36 Credit Hours
- An independent scholarly work is a requirement for the Master of Science in Nursing degree. The scholarly work consists of an evidence-based nursing project. The scholarly project that is required in NGR 6813 (completed in the final semester of study) is an evidence-based scholarly clinical paper. The evidence-based project should reflect the latest evidence for the students MSN track. This is a formal paper that must adhere to published guidelines in the syllabus and must be presented in a public forum.

## ADMISSIONS

In addition to the general admission requirements, applicants to this program must provide a bachelor’s degree in nursing from a program accredited by the National Accreditation Commission or the Commission on Collegiate Nursing Education, a current Florida Registered Nurse license, a personal statement, and two letters of recommendation.

The following admission information is provided for applicants who have completed a bachelor’s degree. For admission requirements for the RN to MSN option, without an undergraduate degree, please refer to the “RN to MSN Program.”

Students are admitted to the programs in fall and spring semesters. To study full-time, applicants to the nurse practitioner tracks should apply for fall admission. Part-time plans of study are available for both fall and spring admission cycles. The nurse practitioner programs prepare primary care nurse practitioners.

In addition to the general UCF graduate admission requirements, applicants to this program must

provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor’s degree in nursing from a program accredited by the National League for Nursing Accreditation Commission (NLNAC) or the Commission on Collegiate Nursing Education (CCNE) or a bachelor’s degree.
- Current Florida Registered Nurse license.
- Undergraduate course in statistics.
- A personal statement describing interest in advanced nursing education and career goals related to the program track.
- Two letters of recommendation evaluating potential for graduate study by nursing instructors, nurse employers or nurses with advanced degrees.

Applicants with a non-nursing bachelor’s degree are required to take upper-division nursing courses that are prerequisites for graduate study in nursing.

Admission to the program is competitive, based on evaluation of the applicant’s abilities, past performance, recommendations, VECHS/FDLE/FBI finger printing and certified background checks, and the match of UCF’s master’s programs with career goals. The College of Nursing accepts the most qualified students. Since enrollment is limited, not all students who apply may be accepted, even if minimum requirements are met.

Students may take classes as a nursing nondegree-seeking, postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than those posted by the university. Students must designate on their application that they are applying to the College of Nursing in order to facilitate processing of files. Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students may only take nonclinical courses.

| Pediatric Nurse Practitioner MSN | Fall Priority | Fall   | Spring | Summer |
|----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants              | Jan 15        | Jul 15 | Nov 14 |        |
| International Applicants         | Jan 15        | Jan 15 | Jul 1  |        |

| Pediatric Nurse Practitioner MSN  | Fall Priority | Fall  | Spring | Summer |
|-----------------------------------|---------------|-------|--------|--------|
| International Transfer Applicants | Jan 15        | Mar 1 | Sep 1  |        |

## CONTACT INFO

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# Optics MS

## PROGRAM DESCRIPTION

The College of Optics and Photonics offers an interdisciplinary graduate program in optical science and engineering leading to a Master of Science in Optics. The college has grown rapidly and now has 42 faculty members and faculty with joint appointments, 54 research scientists and 145 graduate students with research activities covering all aspects of optics, photonics, and lasers. Research expenditures are over \$23 million annually, with over 20 percent of the funding coming from industrial partners, illustrating the effectiveness of the commitment to partnerships that is a foundational value of the COP.

Research activities cover all aspects of optics, photonics, and lasers, and the Center for Research and Education in Optics and Lasers (CREOL) and the Florida Photonics Center of Excellence (FPCE) are integral parts of the College. Current research areas include: linear and nonlinear guided-wave optics and devices, high speed photonic telecommunications, solid state laser development, nonlinear optics, laser-induced damage, quantum-well optoelectronics, photonic information processing, infrared systems, optical diagnostics, optical system design, image analysis, virtual reality, medical imaging, diffractive optics, optical crystal growth and characterization, high intensity lasers, X-ray optics, EUV sources, optical glasses,

laser materials processing, free-electron lasers, and light matter interaction.

The MS program is intended for students with a bachelor's degree in optics, electrical engineering, physics, or closely related fields. The program's mission is to:

- Provide the highest-quality education in optical science and engineering
- Conduct scholarly, fundamental, and applied research
- Aid in the development of Florida's and the nation's technology-based industries

## CURRICULUM

The Optics MS program requires a minimum of 30 credit hours beyond the bachelor's degree. The program offers a thesis and nonthesis option. There are no specifically required courses, and students are allowed considerable freedom in planning their study program. It is strongly recommended that students include at least five courses from the PhD core courses in their program of study. All students must take a minimum of two graduate laboratory courses in Optics or a course closely related.

### Total Required Hours—30 Credit Hours Minimum beyond the Bachelor's Degree.

There are no specifically required courses for the Optics MS degree, and students are allowed considerable freedom in planning their study programs. However, some basic Optics courses are strongly recommended in their program of study (see below). The MS program offers both a thesis and a nonthesis option.

Additional notes on the curriculum:

- A minimum of two graduate laboratory courses, either in optics or closely related to optics must be part of the program. One required laboratory may be waived if the student can demonstrate an equivalent hands-on laboratory experience.
- Up to nine credit hours of appropriate graduate courses from accredited universities may be transferred with approval from the College. Only courses with grades of "B" or better can be transferred.

### Thesis Option

The thesis option requires at least 6 credit hours of

thesis (OSE 6973), a minimum of 12 credit hours in approved Optics courses, and a minimum of 6 credit hours of approved Optics or Optics-related graduate laboratory courses. The remaining credit hours should consist of appropriately selected Optics, Engineering, and Science courses. Independent study and directed research credit hours are not allowed toward the degree requirements. The student must prepare an approved program of study and form a thesis committee upon completion of nine credit hours. The MS thesis committee consists of three members, with at least two regular graduate faculty members from the College of Optics and Photonics. Students are required to write a thesis and pass an oral exam based primarily on the topics of the thesis and course work.

Program of Study must be comprised of:

- at least 24 hours of graduate science and engineering course work, satisfying all of the following requirements:
- at least 12 hours must be Optics courses
- at least 6 hours are science/engineering graduate laboratory courses,
- at least 3 of the laboratory hours must be in Optics
- up to 6 hours of Science and Engineering Elective graduate courses
- 6 hours of thesis (OSE 6971)

### Nonthesis Option

The nonthesis option requires a minimum of 18 course credit hours in approved Optics courses and a minimum of 6 credit hours of approved Optics or Optics-related graduate laboratory courses. The remaining credit hours consist of appropriately selected Optics, Engineering, and Science courses. Up to 6 credit hours of directed research or research report (OSE 6918 or OSE 6909) may be included with prior approval of the school. Students must prepare an approved program of study upon completion of nine credit hours. Students are required to pass a final oral comprehensive examination based primarily on the subject matter of the courses taken. The purpose of the exam is for the student to demonstrate his or her basic knowledge of the fundamentals of optics and photonics.

Program of Study must be comprised of:

- at least 30 hours of graduate science and engineering course work, satisfying all of the following requirements:
- at least 18 hours must be Optics courses

- at least 6 hours are science/engineering graduate laboratory courses,
- at least 3 of the laboratory hours must be in Optics
- up to 6 hours of Science and Engineering Elective graduate courses

No more than 3 hours of directed research (OSE 6918), or Research report (OSE 6909) may be included in the program of study.

### Approved Laboratory Courses

The nonthesis master's requires a minimum of two laboratory courses in the degree. These laboratory courses involve a substantial amount of independent learning on the part of the student. For example, laboratory reports must include sections on the theoretical and historical background behind the phenomena explored in laboratory experiments, and students are expected to obtain this background information on their own by researching the scientific literature. One required Optics laboratory may be waived if the student can demonstrate an equivalent hands-on laboratory experience.

### Recommended Optics Courses

Although there are no required courses in the Optics MS program, the following are strongly recommended for all students.

- OSE 5041 Introduction to Wave Optics (3 credit hours)

OR

- OSE 6111 Optical Wave Propagation (3 credit hours) and
- OSE 5115 Interference and Diffraction (3 credit hours)

### Approved Laboratory Courses

- OSE 5234L Applied Optics Laboratory (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)
- OSE 6526L Laser Engineering Laboratory (3 credit hours)
- OSE 6615L Optoelectronic Device Fabrication Laboratory (3 credit hours)
- Other graduate Science and Engineering Labs may be taken with College approval.

### Electives

Any other graduate courses with an OSE prefix or

the following will be accepted toward the Optics course requirements.

- EEL 6564 Statistical Optics with Applications (3 credit hours)
- EMA 5610 Laser Materials Processing (3 credit hours)
- PHY 5455 Modern X-Ray Science (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**Before completing general UCF graduate admissions requirements, all applicants for programs in the College of Optics and Photonics are recommended to complete the pre-application process. The pre-application is located at [www.creol.ucf.edu/academics/prospective/PreApplication/](http://www.creol.ucf.edu/academics/prospective/PreApplication/).**

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Optics, Electrical Engineering, Physics, or closely related fields.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Résumé.

Students with degrees in related fields may be required to take undergraduate articulation courses determined by the program director on a case-by-case basis.

| Optics MS                         | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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## Physics MS

### PROGRAM DESCRIPTION

The University of Central Florida offers a Master of Science in Physics. Research opportunities are available in condensed matter physics, nanostructure devices, surface science, optical physics, complex systems, biophysics, atomic and molecular physics, and planetary/space science.

### CURRICULUM

The Physics MS program requires a minimum of 33 credit hours beyond the bachelor's degree, and offers students a thesis and nonthesis option. All students take 15 credit hours of core courses, and then the remaining 18 credit hours of restricted electives are planned in consultation with an academic adviser according to the option chosen.

### Total Required Hours for MS—33 Credit Hours Minimum beyond the Bachelor's Degree.

The Master of Science in Physics program is flexibly designed in order to prepare students for the widest possible range of industrial careers or for further study at the doctoral level. Courses must be selected so that at least one-half of the required courses are taken at the 6000 level.

Students pursuing a nonthesis master's degree must take at least one directed research course as part of their elective work. In this course, students will work on a research project under the supervision of a faculty member and present a final report.

### Required Courses—15 Credit Hours

- PHY 5606 Quantum Mechanics I (3 credit hours)
- PHY 5346 Electrodynamics I (3 credit hours)

- PHZ 5156 Computational Physics (3 credit hours)
- PHY 5846C Methods of Experimental Physics (3 credit hours)
- PHY 6939 Physics Graduate Seminar (1 credit hour, taken 3 times)

### Elective Courses—12-15 Credit Hours

Thesis students take 9 credit hours of electives while nonthesis students take 12 credit hours of electives. Elective selection is intended to be very flexible in order to meet student needs and interests. Electives may be chosen following one of the suggested specializations below, or a different program of study may be followed with academic adviser approval.

#### Materials Physics Specialization

- PHY 6624 Quantum Mechanics II (3 credit hours)
- PHY 6347 Electrodynamics II (3 credit hours)
- PHY 5524 Statistical Physics (3 credit hours)
- PHZ 6426 Condensed Matter Physics I (3 credit hours)
- PHZ 6428 Condensed Matter Physics II (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)
- PHZ 5437 Nanoscale Surface in Physics (3 credit hours)
- PHY 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)
- PHY 5425C Electron Solid Interactions (3 credit hours)
- PHY 5140C Ion-Solid Interactions (3 credit hours)
- PHY 5455 Modern X-ray Science (3 credit hours)
- PHY 6420 First Principles Computational Methods in Condensed Matter Physics and Materials Science (3 credit hours)
- PHY 5933 Selected Topics in Biophysics of Macromolecules (3 credit hours)
- PHZ 5432 Introduction to Soft Condensed Matter Physics (3 credit hours)
- PHY 6938 Theory and Computation of Molecular Wave Functions (3 credit hours)
- PHY 6938 Selected Topics in Scattering Theory (3 credit hours)
- EEL 5355C Fabrications of Solid-State Devices (4 credit hours)
- Other graduate courses from Optics, Materials Science, Physics, Optical Science

and Engineering, Electrical Engineering or Industrial Chemistry.

#### Optical Physics Specialization

- PHY 6624 Quantum Mechanics II (3 credit hours)
- PHY 6347 Electrodynamics II (3 credit hours)
- PHY 6938 Theory and Computation of Molecular Wave Functions (3 credit hours)
- OSE 5111 Optical Wave Propagation (3 credit hours)
- OSE 5115 Interference and Diffraction (3 credit hours)
- OSE 6526L Laser Engineering Laboratory (3 credit hours)
- OSE 6455L Photonics Laboratory (3 credit hours)
- PHY 5524 Statistical Physics (3 credit hours)
- OSE 6347 Quantum Optics (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- Other graduate courses from Optics, Materials Science, Physics, Optical Science and Engineering, Electrical Engineering or Industrial Chemistry.

#### Space Physics Specialization

- PHY 6624 Quantum Mechanics II (3 credit hours)
- PHY 6347 Electrodynamics II (3 credit hours)
- PHY 5524 Statistical Physics (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)
- AST 5165 Planetary Atmospheres (3 credit hours)
- EAS 5315 Rocket Propulsion (3 credit hours)
- EAS 6405 Advanced Flight Dynamics (3 credit hours)
- EAS 6507 Topics of Astrodynamics (3 credit hours)
- OSE 5041 Introduction to Wave Optics (3 credit hours)
- EEL 5820 Image Processing (3 credit hours)
- EEL 6823 Image Processing II (3 credit hours)
- Other graduate courses from Optics, Materials Science, Physics, Optical Science and Engineering, Electrical Engineering or Industrial Chemistry.

#### Theory/Computational Physics Specialization

- PHY 6246 Classical Mechanics (3 credit hours)
- PHY 6624 Quantum Mechanics II (3 credit hours)
- PHY 6347 Electrodynamics II (3 credit hours)

- PHY 6420 First Principles Computational Methods in Condensed Matter Physics and Materials Science (3 credit hours)
- PHY 6938 Theory and Computation of Molecular Wave Functions (3 credit hours)
- PHY 6938 Selected Topics in Scattering Theory (3 credit hours)
- PHY 5524 Statistical Physics (3 credit hours)
- PHY 5650 Introduction to Quantum Computation (3 credit hours)
- PHY 6667 Advanced Quantum Mechanics (3 credit hours)
- PHZ 6426 Condensed Matter Physics I (3 credit hours)
- PHZ 6428 Condensed Matter Physics II (3 credit hours)
- PHY 6667 Quantum Field Theory I (3 credit hours)
- PHY 7669 Quantum Field Theory II (3 credit hours)
- PHZ 5505 Plasma Physics (3 credit hours)
- OSE 6347 Quantum Optics (3 credit hours)
- OSE 5312 Fundamentals of Optical Science (3 credit hours)
- Other courses from Physics, Math, Optics, Materials Science, Engineering, Computer Science.

### Thesis Option—6 Credit Hours

Students who choose the thesis option are required to conduct a program of original scientific research or some investigation involving a creative element and to submit a written thesis detailing these investigations. An oral defense and examination of the thesis is required. These six credit hours count toward the 18 hours of required electives for the degree.

- PHY 6971 Thesis (6 credit hours)

### Nonthesis Option—3 Credit Hours

Students who choose the nonthesis option are required to take a minimum of three credit hours of directed research as well as a written comprehensive exit examination. In the directed research course, students work on a research project under the supervision of a faculty member and are required to present a final report. The credit hours obtained in directed research count toward the 18 credit hours of required electives.

- PHY 6918 Directed Research (3 credit hours)

Students pursuing a nonthesis master's degree must take at least one directed research course as part

of their elective work. In this course, students will work on a research project under the supervision of a faculty member and present a final report.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- The GRE Physics Subject Test is recommended but not required.
- Students entering the Physics graduate program with regular status are normally expected to have completed course work generally required for a bachelor's degree in physics, including mechanics, electricity and magnetism, thermal and statistical physics, and quantum mechanics.
- A résumé.
- A goal statement.
- Three letters of recommendation.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Physics MS                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jun 15 | Nov 1  |        |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  |        |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  |        |



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 Department of Political Science  
 PH 302L

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**Political Science MA**

- Environmental Politics MA
- International Studies MA
- Political Analysis and Policy MA

**PROGRAM DESCRIPTION**

The Master of Arts in Political Science program is designed to accommodate a range of professional and intellectual needs. The program prepares students to enter positions in government and the private sector in which the ability to comprehend, influence, and respond to government policy is critical and prepares interested students for pursuit of a PhD degree in Political Science or International Relations at other institutions. The program also provides a well-rounded substantive curriculum for secondary school teachers seeking higher degrees and for teachers in community colleges. The program offers tracks in Political Analysis and Policy, Environmental Politics, and International Studies.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Political Science MA              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

Political Science MA

**Environmental Politics MA**

**TRACK DESCRIPTION**

The Master of Arts in Environmental Politics program prepares students to enter positions in government and the private sector in which the ability to comprehend, influence, and respond to government policy is critical and prepares interested students for pursuit of a PhD degree in Political Science or International Relations at other institutions.

**CURRICULUM**

**Total Required Hours for MA—33 Credit Hours Minimum beyond the Bachelor’s Degree.**

A program of study in the Environmental Politics MA consists of the following course work.

**Core Requirements—15 Credit Hours**

- PUP 6208 Environmental Politics (3 credit hours)
- POS 6746 Quantitative Methods in Political Research (3 credit hours)
- POS 6045 Seminar in American Politics (3 credit hours)
- POT 6007 Seminar in Political Theory (3 credit hours)
- INR 6007 Seminar in International Politics (3 credit hours) or CPO 6091 Seminar in Comparative Politics (3 credit hours)

### Specialized Topic Courses—9 Credit Hours

- INR 6405 International Environmental Law (3 credit hours)
- PUP 6207 Politics of Sustainability (3 credit hours)
- POS 6743 Geographic Tools for Political Science Research (3 credit hours)
- PUP 6201 Urban Environmental Policy (3 credit hours)
- PUP 6247 Contemporary Issues in Environmental Politics (3 credit hours)
- PUP 6938 Special Topics/Public Policy (3 credit hours)

### Cognate Elective—3 Credit Hours

With the approval of the Graduate Committee, other 5000-level or 6000-level courses may qualify as cognate electives. Students must meet all course prerequisites before enrolling in electives offered outside the Department of Political Science.

- BOT 6623C Plant Geography and Ecology (4 credit hours)
- ECP 6031 Benefit/Cost Analysis in Economic Policy (3 credit hours)
- ECP 6305 Resources and Environmental Management Policy (3 credit hours)
- ECP 6309 Advanced Resource and Environmental Economics (3 credit hours)
- ECP 6605 Economics of Urban and Regional Problems (3 credit hours)
- ECS 6006 Seminar in Comparative Economic Systems (3 credit hours)
- ECS 6015 Economic Development (3 credit hours)
- PAD 5336 Introduction to Urban Planning (3 credit hours)
- PAD 5337 Urban Design (3 credit hours)
- PAD 5338 Land Use and Planning Law (3 credit hours)
- PAD 5356 Managing Community and Economic Development (3 credit hours)
- PAD 6353 Environmental Program Management Research (3 credit hours)
- PCB 5045C Conservation Biology (4 credit hours)
- PCB 5326C Ecosystems of Florida (5 credit hours)

### Thesis—6 Credit Hours

#### Comprehensive Examination

All candidates for a master's degree must take a comprehensive written examination in three areas. The examination will be administered after satisfactory completion of the required course work. The examination will be based on the political science course work in two areas contained in the student's program of study. All students will also be tested in the area of quantitative methods. The examination will be offered two times each fall and spring semester and once during the summer. Dates will be set by the department. Students must inform the graduate program director of their intention to take the examination **at least six weeks prior** to its scheduled date. In no case will a student be permitted to take the comprehensive exams prior to completing all required core courses in the program of study. A committee, consisting of Political Science faculty from whom the student has taken courses, will develop questions for the comprehensive examination. Students not passing any part of the examination may take this part a second time within one calendar year on the dates that comprehensive exams are regularly scheduled. However, no student will be allowed to take any part of the examination more than twice.

#### Thesis Committee

After completion of the required course work in the chosen track, the student will form a committee of three advisers and submit a written thesis prospectus. The thesis prospectus, upon acceptance by the committee, will become a part of the student's permanent file. Guidelines for the prospectus are available from the graduate program director. The completed thesis must be submitted to the thesis committee **at least eight weeks prior** to the date on which the degree is to be awarded. The student will then orally defend the thesis. Upon defense of the thesis, students are required to complete an exit survey.

### ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, and an example of written work.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation, attesting to the applicant's ability to think analytically and to communicate clearly.
- An example of written work, such as an undergraduate term paper.

Student wishing to enroll in graduate courses in political science must meet the department's requirements for graduate status (either regular or conditional graduate status) or must hold regular graduate status in another program at UCF. Students who have not been accepted into a degree-seeking program at UCF may not enroll in political science graduate courses.

Meeting minimum UCF or departmental admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, and the applicant's potential for completing the degree.

| Environmental Politics MA         | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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 PH 302L

## Political Science MA

# International Studies MA

## TRACK DESCRIPTION

The Master of Arts in International Studies program prepares students to enter positions in government and the private sector in which the ability to comprehend, influence, and respond to government policy is critical and prepares interested students for pursuit of a PhD degree in Political Science or International Relations at other institutions.

## CURRICULUM

### Total Required Hours for MA—30 Credit Hours Minimum beyond the Bachelor's Degree.

A program of study in the International Studies MA consists of the following course work.

#### Core Requirements—12 Credit Hours

- POS 6746 Quantitative Methods in Political Research (3 credit hours)
- INR 6607 International Relations Theory (3 credit hours)
- CPO 6091 Seminar in Comparative Politics (3 credit hours)
- INR 6007 Seminar in International Politics (3 credit hours)

#### Electives—12 Credit Hours

Choose two of the following courses.

- CPO 6075 Comparative Political Economy (3 credit hours)
- INR 6039 International Political Economy (3 credit hours)
- INR 6086 International Public Policy (3 credit hours)
- INR 6275 International Politics of the Middle East (3 credit hours)
- INR 6507 International Organization (3 credit hours)
- INR 6405 International Environmental Law (3 credit hours)
- PUP 6015 Comparative Public Policy (3 credit hours)

- INR 6228 International Politics of the Caspian Sea Region (3 credit hours)
- GEO 6472 World Political Geography (3 credit hours)
- CPO 6036 Political Development (3 credit hours)
- INR 6716 Politics of International Trade Policy (3 credit hours)
- CPO 6785 Political and Economic Inequality in Comparative Perspective (3 credit hours)
- POS 6747 Advanced Topics in Quantitative Political Analysis (3 credit hours)
- INR 6108 Seminar in American Foreign Policy (3 credit hours)
- INR 6136 Seminar in American Security Policy (3 credit hours)
- INR 6938 Special Topics/International Relations (3 credit hours)
- CPO 6938 Special Topics/Comparative Politics (3 credit hours)
- EUH 5579 Colloquium in Soviet Russia (3 credit hours)
- EUH 5595 Colloquium in Czarist Russia (3 credit hours)
- EUH 6939 Seminar in European History (3 credit hours)
- FIN 6605 International Financial Management (3 credit hours)
- GEB 6365 International Business Analysis (3 credit hours)
- HSA 6112 International Health Systems (3 credit hours)
- LAH 5713 Colloquium in U.S.-Latin American Relations (3 credit hours)
- LAH 6938 Seminar in Latin American History (3 credit hours)
- LIT 6105 World Literature (3 credit hours)
- MMC 6307 International Communication (3 credit hours)
- PAD 6834 Comparative Global Public Administration (3 credit hours)
- SPN 5505 Spanish Peninsular Culture and Civilization (3 credit hours)
- SPN 5506 Spanish American Culture and Civilization (3 credit hours)

Choose two of the following multidisciplinary electives.

With the approval of the Graduate Committee, other 5000-level or 6000-level courses may qualify as multidisciplinary electives. Students must meet all course prerequisites before enrolling in electives offered outside the Department of Political Science.

- AMH 5515 Colloquium in U.S. Diplomatic History (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)
- ASH 5227 The Arab-Israeli Conflict (3 credit hours)
- ASH 5408 Colloquium in Modern China (3 credit hours)
- CCJ 5040 International Perspectives on Law and Justice (6 credit hours)
- CPO 5334 Contemporary Politics of the Mayan Region (3 credit hours)
- ECO 6705 Seminar in International Economics (3 credit hours)
- ECS 6006 Seminar in Comparative Economic Systems (3 credit hours)
- ECS 6015 Economic Development (3 credit hours)
- EUH 5285 Colloquium in Europe Since World War II (3 credit hours)
- EUH 5371 Colloquium in Spanish History (3 credit hours)
- EUH 5546 Colloquium: British History (3 credit hours)

### Thesis—6 Credit Hours

- POS 6971 Thesis (6 credit hours)

### Foreign Language Requirement

All students selecting the international studies track must satisfy the foreign language requirement, of two years of college language or passing the equivalent proficiency exam, prior to their thesis registration.

### Comprehensive Examination

All candidates for a master's degree must take a comprehensive written examination in three areas. The examination will be administered after satisfactory completion of the required course work. The examination will be based on the political science course work in two areas contained in the student's program of study. All students will also be tested in the area of quantitative methods. The examination will be offered two times each fall and spring semester and once during the summer. Dates will be set by the department. Students must inform the graduate program director of their intention to take the examination **at least six weeks prior** to its scheduled date. In no case will a student be permitted to take the comprehensive

exams prior to completing all required core courses in the program of study. A committee, consisting of Political Science faculty from whom the student has taken courses, will develop questions for the comprehensive examination. Students not passing any part of the examination may take this part a second time within one calendar year on the dates that comprehensive exams are regularly scheduled. However, no student will be allowed to take any part of the examination more than twice.

**Thesis Committee**

After completion of the required course work in the chosen track, the student will form a committee of three advisers and submit a written thesis prospectus. The thesis prospectus, upon acceptance by the committee, will become a part of the student’s permanent file. Guidelines for the prospectus are available from the graduate program director. The completed thesis must be submitted to the thesis committee **at least eight weeks prior** to the date on which the degree is to be awarded. The student will then orally defend the thesis. Upon defense of the thesis, students are required to complete an exit survey.

**ADMISSIONS**

In addition to the general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, and an example of written work.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation, attesting to the applicant’s ability to think analytically and to communicate clearly.
- An example of written work, such as an undergraduate term paper.

Student wishing to enroll in graduate courses in political science must meet the department’s requirements for graduate status (either regular or conditional graduate status) or must hold regular graduate status in another program at UCF. Students who have not been accepted into a degree-seeking program at UCF may not enroll in political science graduate courses.

Meeting minimum UCF or departmental admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, and the applicant’s potential for completing the degree.

| <b>International Studies MA</b>   | <b>Fall Priority</b> | <b>Fall</b> | <b>Spring</b> | <b>Summer</b> |
|-----------------------------------|----------------------|-------------|---------------|---------------|
| Domestic Applicants               | Jan 15               | Jul 15      | Dec 1         | Apr 15        |
| International Applicants          | Jan 15               | Jan 15      | Jul 1         | Nov 1         |
| International Transfer Applicants | Jan 15               | Mar 1       | Sep 1         | Dec 15        |

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 PH 302L

Political Science MA

**Political Analysis and Policy MA**

**TRACK DESCRIPTION**

The Master of Arts in Political Analysis and Policy program prepares students to enter positions in government and the private sector in which the ability to comprehend, influence, and respond to government policy is critical and prepares interested students for pursuit of a PhD degree in Political Science or International Relations at other institutions.

**CURRICULUM**

**Total Required Hours for MA—30  
 Credit Hours Minimum beyond the Bachelor’s Degree.**

A program of study in the Political Analysis and

Policy MA consists of the following course work. Elective courses must be selected with the approval of the Graduate Committee, students may take one 6000-level course (3 credit hours) outside the Department of Political Science in partial fulfillment of this requirement. Students must meet all course prerequisites before enrolling in electives offered outside the Department of Political Science.

### Core Requirements—12 Credit Hours

- POS 6746 Quantitative Methods in Political Research (3 credit hours)
- POS 6045 Seminar in American Politics (3 credit hours)
- POT 6007 Seminar in Political Theory (3 credit hours)
- INR 6007 Seminar in International Politics (3 credit hours) or CPO 6091 Seminar in Comparative Politics (3 credit hours)

### Electives—12 Credit Hours

- CPO 6091 Seminar in Comparative Politics (if not selected as Core requirement) (3 credit hours)
- INR 6007 Seminar in International Politics (if not selected as Core requirement) (3 credit hours)
- CPO 6075 Comparative Political Economy (3 credit hours)
- INR 6039 International Political Economy (3 credit hours)
- INR 6086 International Public Policy (3 credit hours)
- POS 6127 State Politics (3 credit hours)
- POS 6207 Political Behavior (3 credit hours)
- POS 6639 Seminar in Public Law and Judicial Politics (3 credit hours)
- PUP 6007 Public Policy Analysis (3 credit hours)
- PUP 6015 Comparative Public Policy (3 credit hours)
- PUP 6208 Environmental Politics (3 credit hours)
- POS 6324 Women and Public Policy (3 credit hours)
- PUP 6607 Politics of Health (3 credit hours)
- POS 6747 Advanced Topics in Quantitative Political Analysis (3 credit hours)
- POS 6174 Seminar in Southern Politics (3 credit hours)
- POS 6403 Teaching American Political Institutions (3 credit hours)
- PUP 6938 Special Topics/Public Policy (3 credit hours)

- POS 6938 Special Topics/Political Analysis (3 credit hours)

### Thesis—6 Credit Hours

- POS 6971 Thesis (6 credit hours)

### Comprehensive Examination

All candidates for a master's degree must take a comprehensive written examination in three areas. The examination will be administered after satisfactory completion of the required course work. The examination will be based on the political science course work in two areas contained in the student's program of study. All students will also be tested in the area of quantitative methods. The examination will be offered two times each fall and spring semester and once during the summer. Dates will be set by the department. Students must inform the graduate program director of their intention to take the examination **at least six weeks prior** to its scheduled date. In no case will a student be permitted to take the comprehensive exams prior to completing all required core courses in the program of study. A committee, consisting of Political Science faculty from whom the student has taken courses, will develop questions for the comprehensive examination. Students not passing any part of the examination may take this part a second time within one calendar year on the dates that comprehensive exams are regularly scheduled. However, no student will be allowed to take any part of the examination more than twice.

### Thesis Committee

After completion of the required course work in the chosen track, the student will form a committee of three advisers and submit a written thesis prospectus. The thesis prospectus, upon acceptance by the committee, will become a part of the student's permanent file. Guidelines for the prospectus are available from the graduate program director. The completed thesis must be submitted to the thesis committee **at least eight weeks prior** to the date on which the degree is to be awarded. The student will then orally defend the thesis. Upon defense of the thesis, students are required to complete an exit survey.

### ADMISSIONS

In addition to the general admission requirements, applicants must provide an official, competitive

GRE score taken within the last five years, three letters of recommendation, and an example of written work.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken in the last five years.
- Three letters of recommendation, attesting to the applicant's ability to think analytically and to communicate clearly.
- An example of written work, such as an undergraduate term paper.

Student wishing to enroll in graduate courses in political science must meet the department's requirements for graduate status (either regular or conditional graduate status) or must hold regular graduate status in another program at UCF. Students who have not been accepted into a degree-seeking program at UCF may not enroll in political science graduate courses.

Meeting minimum UCF or departmental admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, and the applicant's potential for completing the degree.

| Political Analysis and Policy MA  | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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# Public Administration MPA

## PROGRAM DESCRIPTION

The Master of Public Administration MPA program prepares students for employment or advances their careers as public administrators. The program is designed to produce graduates equipped with management and analytical skills needed for successful careers in governmental or nonprofit organizations, and closely related business fields.

## CURRICULUM

The Master of Public Administration MPA program consists of 42 credit hours. Each student completes a core of nine courses (27 credit hours), an advanced curriculum of four courses (12 credit hours) that are selected in consultation with the adviser, and a capstone experience equivalent to one course (3 credit hours). Courses and credit hours used for undergraduate degrees cannot also be counted toward the MPA degree, **except for Senior Scholar students.**

## Total Required Hours—42 Credit Hours Minimum beyond the Bachelor's Degree.

Independent learning is demonstrated throughout the curriculum, through the process of inquiry and dialogue. Tangible projects, such as research scholarly papers, internships, and our capstone experience also contribute to the self-development of our students. The research study and final report in the Capstone Experience will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

## Core Requirements—27 Credit Hours Minimum

- PAD 6053 Public Administrators in the Governance Process (3 credit hours)
- PAD 6035 Public Administration in the Policy Process (3 credit hours)
- PAD 6700 Analytic Techniques for Public Administration I (3 credit hours)

- PAD 6701 Analytic Techniques for Public Administration II (3 credit hours)
- PAD 6037 Public Organization Management (3 credit hours)
- PAD 6207 Public Financial Management (3 credit hours)
- PAD 6227 Public Budgeting (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

### Advanced Curriculum—12 Credit Hours

With prior approval from the MPA Program Coordinator, up to 6 credit hours of elective course work may be taken from outside the department. Students must show that elective courses taken outside of the department directly support a career in public administration. Elective courses offered within the department will provide an emphasis on state and local government; however, other emphases may be developed in consultation with the adviser.

Students without practical administrative experience in the public sector are strongly advised to complete an internship (3 credit hours) as part of the advanced curriculum. A research report option (3 credit hours) is available for students wishing to complete a more substantial research project than might be accommodated in the other courses. The MPA program of study does not accept 4000-level courses.

### Capstone Experience—3 Credit Hours

Students will engage in a capstone experience intended to bring together the various areas of knowledge and skills covered in the MPA program. Students will complete this requirement through enrollment in PAD 6062 Advanced Concepts and Applications in Public Administration.

### Additional Program Requirements

Students must achieve a grade of “B” (3.0) or higher in every course listed under core requirements and in the Capstone Experience (PAD 6062). Student must maintain a graduate status GPA of 3.0 or higher.

PAD 6062, the capstone course, provides the independent learning experience.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to meeting general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Three letters of recommendation.
- Résumé.
- Statement of goals.

Students are expected to be computer literate upon entry to the program or are expected to obtain these skills immediately upon admission to the program.

A limited number of students who do not meet these requirements may be admitted on a provisional basis. These students must demonstrate proven public sector leadership experience, present strong recommendations from either academic or professional advisers, and provide a clear statement of education goals. More specific information on provisional admissions may be obtained from the department. Provisional admissions are limited and competitive. Students who are interested in these spots should contact the department as early as possible for consideration.

| Public Administration MPA         | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |



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## Reading Education

### MEd

**PROGRAM DESCRIPTION**

**The Master of Education in Reading Education is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a Master of Education degree in Reading Education. The program prepares teachers for certification as reading specialists (e.g., reading coach, reading expert, reading resource teacher, reading laboratory teacher, reading/language arts supervisor, primary education specialist) in grades K-12 in public schools and private reading laboratories or clinics. The diagnosis of reading disabilities, techniques of corrective reading, psychological measurement, reading in the content fields, management of reading programs, reading trends and research, and dimensions of the language arts other than reading are included among the curriculum. There is considerable emphasis on practica with disabled readers from the early childhood to adult levels. Professionals currently certified as Florida teachers are eligible to pursue a degree in the program.

**CURRICULUM**

The Master of Education in Reading Education program requires a minimum of 36 credit hours beyond the bachelor's degree, including 15 credit hours of core courses, and 21 credit hours of specialization. All students must pass a final

comprehensive exam, complete a portfolio according to program guidelines, and pass the Reading K-12 Subject Area Exam of the Florida Teacher Certification Examination.

### **Total Required Hours—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The MEd program also requires a practicum experience. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

**Core Courses—15 Credit Hours**

- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

**Select Option**

Students who do not currently hold a Florida ESOL Endorsement must select the third option. Teaching English to Speakers of Other Languages.

**Thesis—6 Credit Hours**

- EDF 6401 Statistics for Educational Data (3 credit hours)
- RED 6971 Thesis (2,1 credit hours)

**Research Report—6 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- RED 6909 Research Report (2,1 credit hours)

**Teaching English to Speakers of Other Languages—6 Credit Hours**

- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

Students who currently hold a Florida ESOL Endorsement may substitute 6 hours of electives as approved by an adviser.

**Specialization Courses—21 Credit Hours**

- RED 6116 Trends in Reading Education (3 credit hours)

- RED 6336 Reading in the Content Areas (3 credit hours)
- RED 6337 Reading in the Secondary School (PR: RED 6336, Basic Teacher Certification, or C.I.) (3 credit hours)
- RED 6746 Management of Reading Programs (3 credit hours)
- RED 6845 Advanced Evaluation and Instruction in Reading (3 credit hours)
- RED 6846 Reading Practicum (PR: RED 6845 or C.I.) (6 credit hours)

## Prerequisites

**The following courses meet state certification requirements or as support for the degree program.**

- RED 5147 Developmental Reading (3 credit hours) OR
- RED 3012 Basic Foundations of Reading (3 credit hours)
- RED 5517 Classroom Diagnosis and Development of Reading Proficiencies (3 credit hours) OR
- RED 4519 Diagnostic and Corrective Reading Strategies (3 credit hours)
- LAE 3414 Literature for Children (3 credit hours) OR
- LAE 5415 Children's Literature in Elementary Education (3 credit hours) OR
- LAE 4464 Survey of Adolescent Literature (3 credit hours)
- LAE 4314 Language Arts in the Elementary School (3 credit hours) OR
- LAE 4342 Teaching Language and Composition (3 credit hours)

## Additional Graduation Requirements

- Complete the comprehensive examination.
- Complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices.
- Pass Reading K-12 Subject Area Exam of the Florida Teacher Certification Examination.

The MEd program also requires a practicum experience. Practica are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Possess or be fully eligible for a professional teaching certificate in one or more other teacher certification specializations in Florida.

| Reading Education MEd             | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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# Science Education MA

- Biology MA
- Chemistry MA
- Middle School Science MA
- Physics MA

## PROGRAM DESCRIPTION

**With the exception of the Community College Teaching Track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The Science Education MA program was created to allow individuals not certified to teach secondary science (such as non education majors or previously certified teachers in another field) to become effective teachers of secondary science. The program offers tracks in biology, chemistry, physics, middle school science, and community college teaching.

The program is dedicated to providing all graduates with exceptional pedagogical and subject matter knowledge and skills by focusing on research-based, state-of-the-art best practices in secondary science education.

## CURRICULUM

Students in the Science Education MA program must choose one of five available tracks. The Biology (grades 6-12), Chemistry (grades 6-12), Middle School Science (grades 5-9), and the Physics (grades 6-12) tracks are composed of 36 credit hours beyond the bachelor's degree, including 18 credit hours of core courses, 12 credit hours of specialization, and 6 credit hours of an internship. All students in one of the four tracks must also complete a portfolio and pass all required sections of the Florida Teacher Certification Examination prior to graduation.

## Total Hours Required for MA— 36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Science Education MA              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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ED 123-L

**Science Education MA****Biology MA****TRACK DESCRIPTION**

The Science Education MA program, Biology Track was created to allow individuals not certified to teach secondary science (such as non education majors or previously certified teachers in another field) to become effective teachers of secondary science.

**CURRICULUM****Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.****Core Courses—15 Credit Hours**

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

**Specialization Courses—15 Credit Hours**

- SCE 5337 Issues and Methods in Secondary School Science (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives approved by adviser (9 credit hours)

Students are required to have 30 credit hours of co-requisite science course work to meet certification requirements to teach science in grades 6-12. These may be previously earned undergraduate or graduate science credits, or include graduate credits in science approved for electives in the program. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

**Internship—6 Credit Hours**

- SCE 6946 Graduate Internship (6 credit hours)

**Additional Program Requirements**

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

Pass all required sections of the Florida Teacher Certification Examination prior to graduation.

**Total Hours Required for MA— 36 Credit Hours Minimum beyond the Bachelor's Degree.**

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

**ADMISSIONS**

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to a MEd program without going through the university's admission process.

| Biology MA                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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## Science Education MA

# Chemistry MA

## TRACK DESCRIPTION

The Science Education MA program, Chemistry Track was created to allow individuals not certified to teach secondary science (such as non education majors or previously certified teachers in another field) to become effective teachers of secondary science.

## CURRICULUM

### Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Specialization Courses—15 Credit Hours

- SCE 5337 Issues and Methods in Secondary School Science (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives approved by adviser (9 credit hours)

Students are required to have 30 credit hours of co-requisite science course work to meet certification requirements to teach science in grades 6-12. These may be previously earned undergraduate or graduate science credits, or include graduate credits in science approved for electives in the program. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

### Internship—6 Credit Hours

- SCE 6946 Graduate Internship (6 credit hours)

### Additional Program Requirements

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

Pass all required sections of the Florida Teacher Certification Examination prior to graduation.

### Total Hours Required for MA— 36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final

reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

## ADMISSIONS

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to a MEd program without going through the university's admission process.

| Chemistry MA                      | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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## Science Education MA

# Middle School Science MA

## TRACK DESCRIPTION

The Science Education MA program, Middle School Science Track was created to allow individuals not certified to teach secondary science (such as non education majors or previously certified teachers in another field) to become effective teachers of secondary science.

## CURRICULUM

### Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

#### Specialization Courses—15 Credit Hours

- SCE 5325 Teaching Middle School Science (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- IDS 6915 Classroom Management Strategies (3 credit hours)
- Electives (SCE 6146, SCE 5825 or a course approved by adviser (6 credit hours)

Students are required to have 18 credit hours of science course work to meet certification requirements to teach science in grades 5-9. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

**Internship—6 Credit Hours**

- SCE 6946 Graduate Internship (6 credit hours)

**Additional Program Requirements**

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

Pass all required sections of the Florida Teacher Certification Examination prior to graduation.

**Total Hours Required for MA— 36 Credit Hours Minimum beyond the Bachelor’s Degree.**

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students’ overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933. An internship is also required.

**ADMISSIONS**

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to a MEd program without going through the university’s admission process.

| Middle School Science MA          | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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Science Education MA

**Physics MA**

**TRACK DESCRIPTION**

The Science Education MA program, Physics Track was created to allow individuals not certified to teach secondary science (such as non education majors or previously certified teachers in another field) to become effective teachers of secondary science.

**CURRICULUM**

**Total Hours Required for MA—36 Credit Hours Minimum beyond the Bachelor’s Degree.**

**Core Courses—15 Credit Hours**

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### Specialization Courses—15 Credit Hours

- SCE 5337 Issues and Methods in Secondary School Science (3 credit hours)
- IDS 6933 Seminar in Teaching Mathematics and Science (3 credit hours)
- Electives approved by adviser (9 credit hours)

Students are required to have 30 credit hours of science course work to meet certification requirements to teach science in grades 6-12. Only six hours of independent study courses may be used to satisfy degree requirements. It is important to see an adviser if courses are difficult to schedule in content areas.

### Internship—6 Credit Hours

- SCE 6946 Graduate Internship (6 credit hours)

### Additional Program Requirements

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933.

Pass all required sections of the Florida Teacher Certification Examination prior to graduation.

### Total Hours Required for MA— 36 Credit Hours Minimum beyond the Bachelor's Degree.

The MA program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre-professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components

of learning since they are the primary means of accessing the professional development of students as reflective practitioners.

All students must complete a portfolio according to program guidelines. This portfolio requires demonstration of professional growth, reflection, and proficiency in the 12 Florida Educator Accomplished Practices. Portfolio defense will be a part of IDS 6933. An internship is also required.

### ADMISSIONS

In addition to general admission requirements, applicants must provide one official transcript (in a sealed envelope) from each college/university attended.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to a MEd program without going through the university's admission process.

| Physics MA                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

### CONTACT INFO

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 ED 123-L



# Science Education MEd

## PROGRAM DESCRIPTION

**This is a state-approved teacher education program that is currently undergoing revision in response to a change in Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The Science Education MEd program is designed to meet the advanced knowledge and skill needs of certified secondary science teachers, enabling them to expand their subject matter knowledge and professional teaching skills.

The program is dedicated to providing all graduates with exceptional pedagogical and subject matter knowledge and skills by focusing on research-based, state-of-the-art best practices in secondary science education.

## CURRICULUM

The Science Education MEd program requires a minimum of 33-36 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, 9 credit hours of specialization, and 12 credit hours of curriculum courses.

### Total Hours Required for MEd—33 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires a research report at the completion of studies or a research study housed in one or more courses. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### Core Courses—9 Credit Hours

- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

### Select one course from the following list:

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

### Research Option—3-6 Credit Hours

- ESE 6909 Research Report or 2 approved electives (2,1 or 6 credit hours)

### Specialization—9 Credit Hours

- Electives approved by adviser

### Curriculum—12 Credit Hours

- 9 credit hours approved by adviser
- SCE 6338 Inquiry in the Sciences\* (3 credit hours)

\*This course requires a research study, the independent learning experience for the program.

SCE 6238 requires a research study as part of the curriculum, providing the independent learning experience for the program.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in Science Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students may not switch from an MA program to a MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into a MEd program.

| Science Education MEd             | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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# Social Science Education MA

## PROGRAM DESCRIPTION

**With the exception of the Community College Teaching Track, the Master of Arts is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The College of Education offers a Social Science Education MA degree for non-education majors or previously certified teachers in another field. The MA program also includes a Community College Teaching Track, which is designed for individuals planning to teach at that level and not requiring state teacher certification.

## CURRICULUM

The Social Science Education MA requires a minimum of 39 credit hours beyond the bachelor's degree, including 18 credit hours of core courses, 15 credit hours of specialization, and 6 credit hours of an internship. Upon completion of the program, students must complete a portfolio according to program guidelines, pass a comprehensive examination, and pass all applicable sections of the Florida Teacher Certification Examination. The Community College Teaching MA program requires a minimum of 42 credit hours beyond the bachelor's degree, including 15 credit hours of core courses and 27 credit hours of specialization.

### Total Hours Required for MA—39 Credit Hours Minimum beyond the Bachelor's Degree.

The MA in Social Science Education program is designed for non-education majors or previously certified teachers in another field.

The program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. An internship is also required.

### Required Core Courses—15 Credit Hours

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EFG 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- LAE 5337 Literacy Strategies for Middle and Secondary Teaching (3 credit hours)
- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)

### **Electives in Specialization—18 Credit Hours**

- SSE 5790 Inquiry and Instructional Analysis in Social Science Education (3 credit hours)
- 9 credit hours of SSE electives at the 5000 level or above
- 6 credit hours of social science content electives (AFH, AMH, ASH, CPO, EUH, HIS, INR, LAH, or POS) at the 5000 level or above
- Substitutions may be approved by your adviser

### **Internship—6 Credit Hours**

- SSE 6946 Graduate Internship (6 credit hours)

### **Additional Program Requirements**

- Complete a portfolio according to program guidelines.
- Pass all applicable sections of the Florida Teacher Certification Examination.

The program requires a portfolio of both reflective practice/analysis of professional development and demonstration of attainment of the pre professional level of performance for all twelve of the Florida Educator Accomplished Practices. Multiple artifacts and reflective analysis are required for each of the accomplished practices. In addition, all portfolios require a final reflective analysis of students' overall learning and professional development as the capstone portfolio entry. All portfolio entries are critical components of learning since they are the primary means of accessing the professional development of students as reflective practitioners. An internship is also required.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process.

| <b>Social Science Education MA</b> | <b>Fall Priority</b> | <b>Fall</b> | <b>Spring</b> | <b>Summer</b> |
|------------------------------------|----------------------|-------------|---------------|---------------|
| Domestic Applicants                | Jan 15               | Jul 15      | Dec 1         | Apr 15        |
| International Applicants           | Jan 15               | Jan 15      | Jul 1         | Nov 1         |
| International Transfer Applicants  | Jan 15               | Mar 1       | Sep 1         | Dec 15        |

### **CONTACT INFO**

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 Department of Teaching and Learning Principles  
 ED 123-H

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## **Social Science Education MEd**

### **PROGRAM DESCRIPTION**

The College of Education offers a Social Science Education MEd program designed to meet advanced knowledge and skill needs of the Social Science classroom teacher.

### **CURRICULUM**

The Social Science Education MEd program requires a minimum of 33 credit hours beyond the bachelor's degree, including 12-15 credit hours of core courses, 9 credit hours of specialization, and 12 credit hours of curriculum.

## Total Hours Required for MEd—33 Credit Hours Minimum beyond the Bachelor's Degree.

The MEd program requires a research report at the completion of studies or a research study housed in one or more courses. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research based best practices in the classroom).

### Core Courses—12 or 15 Credit Hours

- EDF 6401 Statistics for Educational Data (3 credit hours) or EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- ESE 6909 Research Report (2,1 or 3 credit hours) or Graduate electives approved by adviser (6 credit hours)

### Select one of the following courses:

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours)

### Specialization Courses—9 Credit Hours

- SSE 5391 Global Education: Theory and Practice (3 credit hours)
- SSE 5776 Democracy and Education (3 credit hours)
- Elective approved by adviser (3 credit hours)

### Curriculum Courses—12 Credit Hours

- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- ESE 6217 Curriculum Design (3 credit hours)
- Electives approved by adviser (6 credit hours)

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all

prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Current Florida Professional Teaching Certificate in Social Science Education or have completed all the requirements for that Professional Teaching Certificate.

Applicants who have graduated from an accredited university or college teacher certification program in another state or country, in the appropriate subject and/or grade range, may also be admitted to the MEd program at the discretion of the program director.

Students may not switch from an MA program to an MEd program, or vice versa, without going through the university's admission process. Courses used to gain initial state certification may not be transferred into an MEd program.

| Social Science Education MEd      | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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ED 123-H

# Social Work MSW

## PROGRAM DESCRIPTION

The Master of Social Work MSW program prepares students for advanced social work practice. The program educates students for community-based clinical social work practice with individuals, families, and groups. The curriculum draws from a generalist perspective and emphasizes critical thinking skills, empirically based accountable practice, and ethical services for clients experiencing a wide range of problems. Students learn preventive and therapeutic interventions aimed at enhancing human functioning and quality of life. Graduates of the program have the ability to work with diverse clients in a variety of agency settings.

The MSW program is accredited by the Council on Social Work Education.

## CURRICULUM

The MSW program is composed of 30 credit hours of required core courses and 30 credit hours of advanced clinical specialist courses. Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Projects such as research studies, clinical assessments and treatment plans, papers and internships also contribute to the self-development of our students. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. Students in the 60-hour program must include at least 30 hours of course work at the 6000 level in their program of study.

### Total Required Hours—60 Credit Hours Minimum beyond the Bachelor's Degree.

#### Prerequisites—18 Credit Hours

Introductory three-credit college-level courses in the following areas or equivalents are required for admission into the program from the following areas: Biology with human content, English or Communication, Psychology, Statistics, Sociology, and Diversity.

### Foundation Curriculum: Generalist Social Work Practice—30 Credit Hours

- SOW 5305 Social Work Practice I: Generalist Practice (3 credit hours)
- SOW 5306 Social Work Practice II: Intervention Approaches (3 credit hours)
- SOW 5105 Human Behavior and Social Environment I: Individual (3 credit hours)
- SOW 5106 Human Behavior and Social Environment II: Social Systems (3 credit hours)
- SOW 5132 Diverse Client Populations (3 credit hours)
- SOW 5235 Social Welfare Policies and Services (3 credit hours)
- SOW 5404 Social Work Research (3 credit hours)
- Generalist Field Education and Seminars (6 credit hours)
- Practice elective (3 credit hours)

### Advanced Curriculum: Clinical Specialist—30 Credit Hours

- SOW 6348 Clinical Practice with Individuals (3 credit hours)
- SOW 6324 Clinical Practice with Groups (3 credit hours)
- SOW 6612 Clinical Practice with Families (3 credit hours)
- SOW 6123 Psychosocial Pathology (3 credit hours)
- SOW 6246 Policy Analysis and Social Change (2 credit hours)
- SOW 6914 Integrative Research Project in Clinical Practice (2 credit hours)
- Clinical Field Education and Seminars (8 credit hours)
- Clinical elective (3 credit hours)
- Clinical elective (3 credit hours)

### An approved general elective can be selected in consultation with adviser and MSW graduate program director from list below:

- SOW 6938 ST: Violence Against Women: A Global Perspective (3 credit hours)
- SOW 5355 Studies in Social Work Practice (3 credit hours)
- SOW 5387 Nonprofit Resource Development (3 credit hours)
- SOW 5432 Evaluating Social Work (3 credit hours)
- SOW 6604 Medications in Social Work Practice (3 credit hours)
- SOW 5624 Social Work Practice in Mexican Culture (3 credit hours)

- SOW 5625 Social Work with Women (3 credit hours)
- SOW 5635 Social Work Practice in Schools (3 credit hours)
- SOW 5642 Aging in Social Situations (3 credit hours)
- SOW 6938 ST: Interventions with Elderly and Their Families (3 credit hours)
- SOW 5652 Children Services in Social Work (3 credit hours)
- SOW 6655 Child Abuse: Treatment and Prevention (3 credit hours)
- SOW 5662 Strategies in Employee Assistance Programs (3 credit hours)
- SOW 6670 Gay and Lesbian Experience in American Society (3 credit hours)
- SOW 5735 Documentation Skills for Helping Professionals (3 credit hours)
- SOW 6938 ST: Interventions with Substance Abusers (3 credit hours)
- SOW 6938 ST: Prevention and Treatment of Adolescent Substance Abuse (3 credit hours)
- SOW 6846 Spirituality in Professional Counseling (3 credit hours)
- SOW 6373 Clinical Supervision (3 credit hours)
- SOW 6383 Social Work Administration (3 credit hours)
- SOW 6384 Administrative Supervision in Social Work (3 credit hours)
- SOW 6656 Clinical Practice with Children and Adolescents (3 credit hours)
- SOW 6689 Sex Therapy (3 credit hours)
- SOW 6938 ST: Forensic Social Work (3 credit hours)
- SOW 6155 Human Sexuality in Social Work Practice (3 credit hours)
- PAD 5859 Grant and Contract Management (3 credit hours)
- MHS 6400 Theories of Counseling and Personality (3 credit hours)

## Field Education

Field instruction is an integral part of graduate social work education. It provides the student with an opportunity to test classroom knowledge as well as to develop and refine foundation and advanced practice skills. Decisions regarding field assignment are determined by the Field Director. Only agency sites approved by the School of Social Work may be used for field instruction. Generalist MSW students complete a minimum of 500 hours in the field; clinical MSW students complete a minimum of 550

clock hours in the field. Field education includes a field seminar.

## Full-time Study

The full-time program may be completed in two years of full-time study in residence. The first year of study includes 24 credit hours in class work and 6 credit hours in field education. The second year of study includes 22 credit hours in class work and 8 credit hours in the field.

## Part-time Study

For students who do not have a BSW degree, part-time education is available at the Orlando campus and at the UCF Regional Daytona Beach campus. This program may be completed in four calendar years. For students who have received a BSW degree from a CSWE-accredited college or university within six years prior to enrollment, there is also a part-time program in the advanced clinical curriculum at the Orlando campus and Regional Daytona Beach campus.

## Transfer Credit

Students who have completed course work in an accredited MSW program may transfer up to 30 credit hours toward the 60 credit hours of the degree. Students must have received a grade of “B-” or higher in these courses. Courses must be evaluated on a course-by-course basis by the graduate program director.

## Equipment Fee

Students in the MSW program pay a \$35 equipment fee each semester enrolled.

## Independent Learning

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Projects such as research studies, clinical assessments and treatment plans, papers and internships also contribute to the self-development of our students.

Independent learning is demonstrated throughout the curriculum through the process of inquiry and dialogue. Projects such as research studies, clinical assessments and treatment plans, papers and internships also contribute to the self-development of our students.

The field experiences and practice electives provide substantial opportunities for students to learn independently and practically about social work practice.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

The Master of Social Work Program offers several options to students including full-time study, advanced standing admission, as well as early morning classes and evening classes to support part-time study. Students are admitted and can begin course work in fall semesters only.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- One completed college-level course in each of the following six areas: biology with human content, English or communication, diversity, statistics, psychology, and sociology.
- Résumé.
- Three letters of recommendation.
- A personal statement. Applicants must write a personal/autobiographical statement that should be 2 - 5 pages and covers the following questions:
  - What are the reasons and experiences that led you to choose social work as a profession? Did you consider other professions, if so why did you prefer social work?
  - What are your social work career interests? Which client population is of special interest to you?
  - What are your personal strengths that you can bring to this profession? How have these strengths been demonstrated in the past?
  - What do you feel is your personal mission in social work and where do you see yourself 10 years from now in the field of social work?
  - What major issues do you think that professional social work should be concerned with? What is the role of social work in relation to this issue?
- Writing sample. Applicants must submit a paper written for any class in their undergraduate studies that dealt with social based issues. The paper should be 5-10 pages and will be used to evaluate the applicant's ability to write. If the applicant does not have any paper which addresses social issues, he/she is welcome to submit any paper of his/her choice.

To be accepted into and retained in the program, students are expected to demonstrate initiative, dependability, social concern, self awareness, appreciation for diversity in others, problem solving ability, ease in relating with others, skill in writing and speaking, and professional ethics.

### Advanced Standing

If the criteria for admission are met, applicants with baccalaureate degrees in social work from a CSWE-accredited school/program are invited to submit an application for Advanced Standing admission to the Master of Social Work program. Admission with advanced standing is limited to those who demonstrate the academic potential and professional maturity to meet the demands of the program and who will have adequate preparation for MSW practice with one year of graduate study. Previous baccalaureate course work that received at least a "B-" will be reviewed to ensure content equivalency. In advanced standing admission, a maximum of 30 foundation level credits may be waived based on the content equivalency to meet foundation year MSW requirements, which consist of courses in human behavior and the social environment, policy, research, social work practice, and social work field placement.

To be considered for advanced standing admission, the bachelor's degree must have been completed within six years of the time of initial enrollment in the master's program.

| Social Work MSW                   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

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 School of Social Work  
 HPA 1 204

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# Spanish MA

## PROGRAM DESCRIPTION

The master's program in Spanish is intended for those who wish to continue their study in Spanish at the graduate level. The program focuses on the language literature, and civilization of Spain, Latin America, and Hispanics in the United States. Students in the program learn research methods, enhance language skills, and acquire a scholarly view of culture, literature, and linguistics of the Spanish-speaking world.

## CURRICULUM

The master's degree program in Spanish has both thesis and nonthesis options. A total of 36 credit hours of course work for the nonthesis option or at least 30 credit hours of course work and up to 6 credit hours of thesis (3 credit hours minimum) are required of students seeking the master's degree in Spanish.

### Total Required Hours for MA—36 Credit Hours Minimum beyond the Bachelor's Degree.

A minimum grade of "B" must be earned in each required course. Students will be allowed a maximum total of 6 semester hours of "C" grades in elective courses. Students are allowed to transfer up to 6 credit hours of corresponding graduate courses with the grade of "A" or "B" from an accredited university. University policies and procedures will be followed for all degree requirements. Courses are to be chosen from the following categories in accordance with the number of hours designated in each.

- Research Methods—3 credit hours
- Spanish Language Study—3 credit hours

- Hispanic Culture and Civilization—6 credit hours
- Hispanic Literature—12 credit hours
- Electives—6 or 12 hours

The remaining elective hours of course work are 6 credit hours for the nonthesis option. Students must choose electives from the additional, available courses listed below in conjunction with their faculty adviser. The aim of the selections should be to complement the acquisition of knowledge in the particular area of Hispanic studies chosen. Courses must be selected so that at least one-half of required courses are taken at the 6000 level.

All students are required to take SPW 6919 Advanced Spanish Graduate Research, which results in a research paper that organizes and summarizes knowledge in a chosen area of study. All classes require a research paper that allows students to engage in independent learning.

**All courses are taught face to face and are entirely in Spanish.**

## Required Courses

### Research Methods—3 Credit Hours

- SPW 6919 Advanced Spanish Graduate Research (3 credit hours)

### Spanish Language Study—3 Credit Hours

- SPN 5705 Introduction to Spanish Linguistics (3 credit hours)
- SPN 5825 Spanish Dialectology (3 credit hours)
- SPN 5845 History of the Spanish Language (3 credit hours)
- SPN 6805 Spanish Morphosyntax (3 credit hours)

### Hispanic Culture and Civilization—6 Credit Hours

- SPN 5502 Hispanic Culture of the United States (3 credit hours)
- SPN 5505 Spanish Peninsular Culture and Civilization (3 credit hours)
- SPN 5506 Spanish American Culture and Civilization (3 credit hours)

### Hispanic Literature—12 Credit Hours

- SPW 5741 Contemporary Spanish American Souther Cone Literature (3 credit hours)



- SPW 6825 Seminar Series\* (May be repeated for credit with different topics) (3 credit hours)
- SPW 6405 Medieval Spanish Literature (3 credit hours)
- SPW 6217 Spanish American Prose I (3 credit hours)
- SPW 6218 Spanish American Prose II (3 credit hours)
- SPW 6269 Nineteenth Century Spanish Novel (3 credit hours)
- SPW 6306 Spanish American Drama (3 credit hours)
- SPW 6315 Golden Age Drama (3 credit hours)
- SPW 6356 Spanish American Poetry (3 credit hours)
- SPW 6485 Contemporary Peninsular Literature (3 credit hours)
- SPW 6725 The Generation of 1898 (3 credit hours)
- SPW 6358 Modernismo (3 credit hours)
- SPW 6216 Spanish Golden Age Prose and Poetry (3 credit hours)
- SPW 6775 Spanish Caribbean Prose (3 credit hours)

\* Examples of Seminar Series Topics: Don Quixote, Spanish American Literature Written by Women, Gabriel García Márquez

### **Electives—6 or 12 Credit Hours**

Approved courses at the graduate level.

### **Thesis—6 Credit Hours**

- SPW 6971 Thesis Research and Thesis (6 credit hours)

### **Comprehensive Examination and Reading List**

Students must pass a comprehensive examination in order to qualify for the master's degree in Spanish. This examination is based on knowledge of the civilization and literature of Spain and Hispanic America and on basic concepts of linguistic theory and analysis.

Since this examination will be given toward the end of the course work (only during fall and spring semesters), it is expected that the student will have developed an ability to analyze literature, culture, and linguistics at an advanced level. It is also expected that the responses, both written and oral, will show an excellent command of the Spanish language.

If a student does not successfully pass both the oral and written comprehensive examinations, he or she may be able to retake the exams in the following semester (fall or spring). Thereafter, if the student does not pass the examinations the second time, he/she will be removed from the program.

The Graduate Committee has developed a reading list made up of major Peninsular, Latin American, and Linguistics works with which the student must be familiar. The comprehensive examination will be based on the reading list and the courses that the student has taken. An oral examination will follow the written examination. This examination will allow the student to expand more readily on particular points of culture, literature, and linguistics, and to show ability in the use of the spoken language.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A bachelor's degree in Spanish or a related field.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Writing sample written in Spanish.
- Interview with Dr. C. Alberto Villanueva.
- Approval by the Graduate Committee of the Department of Modern Languages and Literature.

Application information is also available at [www.cah.ucf.edu/spanishma](http://www.cah.ucf.edu/spanishma).

Students are expected to have read widely in Hispanic literature and to be competent in understanding, reading, and writing Spanish. They should also be familiar with the vocabularies of literary criticism and grammar.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s career/academic goals, and the applicants potential for completing the degree.

| Spanish MA                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 1  | Nov 1  | Mar 1  |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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**Sport and Fitness MA**

- Health/Wellness and Applied Exercise Physiology MA
- Sport Leadership and Coaching MA

**PROGRAM DESCRIPTION**

The Master of Arts in Sport and Fitness offers students the opportunity to develop knowledge and skills to work in areas such as coaching, athletic leadership, health clubs, and youth community centers. It is very common for sport and fitness graduates to coach in youth, school, and recreational programs as well as work in the fitness industry teaching in YMCAs, or fitness and wellness centers. The program offers two tracks: Health/Wellness and Applied Exercise Physiology, and Sport Leadership and Coaching.

**CURRICULUM**

Each track in the Sport and Fitness MA requires a minimum of 33 credit hours beyond the bachelor’s degree, including 9 credit hours of core courses,

and 24 credit hours of a specialization area. All students are required to complete a research report after the completion of their studies and take a comprehensive examination.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Sport and Fitness MA              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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 Teaching and Learning Principles  
 ED 320P

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*Sport and Fitness MA*

**Health/Wellness and Applied Exercise Physiology MA**

**TRACK DESCRIPTION**

The Master of Arts in Health/Wellness and Applied Exercise Physiology provides students with knowledge in health/wellness and applied physiology.

## CURRICULUM

### Total Required Hours for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—9 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- PET 6910 Problem Analysis\* (3 credit hours)
- PET 5355 Exercise and Health (3 credit hours)

\* This course requires a research study, the independent learning experience for the program.

#### Specialization Courses—24 Credit Hours

Students may select courses from any of these areas with adviser's consent. Selected courses from other programs or colleges may also be substituted with adviser's consent.

- HSC 5317 Health Methods: Teaching Strategies and Interventions (3 credit hours)
- PET 5635 Advanced Human Injuries (3 credit hours)
- PET 6088 Wellness Development in Children (3 credit hours)
- PET 6089 Personal and Organizational Wellness (3 credit hours)
- PET 6217 Peak Performance in Sports (3 credit hours)
- PET 6330 Kinesiology (3 credit hours)
- PET 6357C Environmental Perturbation and Human Performance (3 credit hours)
- PET 6366 Exercise, Nutrition and Weight Control (3 credit hours)
- PET 6381 Physiology of Neuromuscular Mechanisms (3 credit hours)
- PET 6388 Cardiovascular Physiology (3 credit hours)
- PET 6505 Wellness Technology in Physical Education (3 credit hours)
- PET 6690 Exercise Testing and Prescription for Special Populations (3 credit hours)

#### Additional Specialization Course Options

- PET 6909 Research Report (3-6 credit hours)
- PET 6946 Practicum, Clinical Practice (3 credit hours)

### Additional Program Requirements

- Comprehensive Examination

Each track in the Sport and Fitness MA requires a minimum of 33 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, and 24 credit hours of a specialization area. All students are required to complete a research report after the completion of their studies and take a comprehensive examination.

PET 6910 requires a research study, the independent learning experience for the program.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, two letters of recommendation, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.
- Résumé.

| Health/<br>Wellness<br>and Applied<br>Exercise<br>Physiology<br>MA | Fall<br>Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------|------------------|--------|--------|--------|
| Domestic Applicants                                                | Jan 15           | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                                           | Jan 15           | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants                                  | Jan 15           | Mar 1  | Sep 1  | Dec 15 |

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Teaching and Learning Principles  
ED 320P

*Sport and Fitness MA*

# Sport Leadership and Coaching MA

## TRACK DESCRIPTION

The specialization in Sport Leadership and Coaching enables students to become more effective leaders and coaches by helping develop skills related to planning, organizing, managing, and evaluating, within the context of a group, department, or organization whose primary product or service is related to sport and/or physical activity.

## CURRICULUM

### Total Required Hours for MA—33 Credit Hours Minimum beyond the Bachelor's Degree.

#### Core Courses—9 Credit Hours

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- PET 6910 Problem Analysis\* (3 credit hours)
- SPM 5155 Introduction to Sports Administration (3 credit hours)

\* This course requires a research study, the independent learning experience for the program.

#### Specialization Courses—24 Credit Hours

Students may select courses from any of these areas with adviser's consent. Selected courses from other programs or colleges may also be substituted with adviser's consent.

- PET 5766 Advanced Coaching Theory (3 credit hours)
- PET 5XXX Critical Issues: Ethics in Coaching and Sport (3 credit hours)
- PET 5XXX Motivational Aspects of Coaching (3 credit hours)
- PET 6391 Training and Conditioning Techniques for Coaches (3 credit hours)
- PET 6XXX Race and Gender in Coaching and Sport Leadership (3 credit hours)
- SPM 5506 Financial Issues in Sports and Fitness (3 credit hours)
- SPM 5308 Marketing and Promoting Sports and Fitness Programs (3 credit hours)

- SPM 6106 Planning and Operating Facilities for Sports and Fitness Programs (3 credit hours)
- SPM 6158 Leadership and Management in Sports Programs (3 credit hours)
- SPM 6726 Legal Issues in Sports and Fitness Programs (3 credit hours)

#### Additional Specialization Course Options

- PET 6909 Research Report (3-6 credit hours)
- PET 6946 Practicum, Clinical Practice (3 credit hours)

#### Additional Program Requirements

- Comprehensive Examination

Each track in the Sport and Fitness MA requires a minimum of 33 credit hours beyond the bachelor's degree, including 9 credit hours of core courses, and 24 credit hours of a specialization area. All students are required to complete a research report after the completion of their studies and take a comprehensive examination.

PET 6910 requires a research study, the independent learning experience for the program.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, two letters of recommendation, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.
- Résumé.

| Sport Leadership and Coaching MA  | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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## Sport Business Management MSBM

**PROGRAM DESCRIPTION**

Students in the DeVos Sport Business Management Program gain hands-on experience in the business of sports management, work in teams with fellow students on sports business projects from conception through implementation, and develop a network in the sports industry. This program is the only sport business management program emphasizing diversity, moral, ethical, and social issues in sports, as well as focusing on sports leadership.

Graduates of the program will understand the relationship between sport and social issues, the business of sport both nationally and internationally, and how the legal system impacts sports business. They will understand and embrace the strengths and complexities of a diverse workforce as an actual component of overall business strategy and will be prepared to lead organizations to be corporate good citizens in the community. Graduates will also be able to develop and implement integrated business and marketing plans, optimize the use of the technology, develop and implement fundraising strategies, and design and carry out research necessary to make successful management and business decisions.

Job opportunities for graduates in sport management include areas such as intercollegiate and professional sport, event and facilities management, sport law, corporate and international sport, and marketing.

The DeVos Sport Business Management Program develops professionals who have critical sports business management knowledge and skills, a

commitment for using sport to improve life in society, well-developed leadership abilities, and uncompromising ethical standards.

Students in the Sport Business Management program have the opportunity to apply to the MBA program and receive an additional degree and diploma for an MBA, Sport Business Management Track.

**CURRICULUM**

The DeVos Sport Business Management MSBM program requires a minimum of 45 credit hours beyond the bachelor's degree, including 21 credit hours of professional courses, 16.5 credit hours of core courses, 4.5 credit hours of electives and 5 credit hours of an internship and 1 credit hour of service learning. This is a nonthesis program in which the internship serves as a capstone experience. Students will complete 45 credit hours if they were undergraduate majors in business or 57 credit hours if they did not have the undergraduate courses.

### **Total Required Hours for MSBM— 45 Credit Hours Minimum beyond the Bachelor's Degree**

The two-year full-time curriculum includes the College of Business Administration's foundation core; selected required courses from the college's professional core for solid business skills and knowledge; and required sport business management courses that will create a unique knowledge base for our students.

**Prerequisite Courses****Foundation Core—12 Credit Hours**

The foundation core is defined by the course requirements listed below, and its completion is a prerequisite to entering the professional core. All or part of the foundation core requirements may be satisfied through advanced standing given in view of a student's prior equivalent course work at the undergraduate or graduate level provided such course work has been satisfactorily completed at a regionally accredited college or university, preferably one accredited by the Association to Advance Collegiate Schools of Business (AACSB).

- ACG 6065 Accounting Foundations (3 credit hours)

- ECO 6418 Economic Concepts with Math Applications (3 credit hours)
- ECO 6405 Business Statistical Concepts and Methods (3 credit hours)
- FIN 6404 Foundations of Finance (3 credit hours)

### **Professional Core—24 Credit Hours**

The professional core consists of 24 credit hours of advanced course work that substantially extends and applies knowledge developed in the foundation core. If accepted into the MBA portion\*.

- MAN 6245 Organizational Behavior and Development (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- ACG 6425 Managerial Accounting Analysis (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- ECO 6416 Applied Business Research Tools (3 credit hours)
- MAN 6721 Applied Strategy and Business Policy\* (3 credit hours)
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- MAR 6816 Strategic Marketing\* (3 credit hours)

### **Sport Business Management Core—16.5 Credit Hours**

The sport business management core consists of 16.5 credit hours of course work in the related areas of sport.

- SPB 6506 Moral and Ethical Issues in Sport (1.5 credit hours)
- SPB 6606 Diversity and Social Issues in Sport Business Management (1.5 credit hours)
- SPB 6725 Leadership in Sport (1.5 credit hours)
- SPB 6716 Strategic Sport Marketing (3 credit hours)
- SPB 6406 Sport Law (3 credit hours)
- SPB 6806 Business of Sport Media (3 credit hours)
- GEB 6367 The Global Environment of Sport (3 credit hours)

### **Elective Sport Business Management Courses—4.5 Credit Hours**

Students can choose from the following elective

courses.

- Either SPB 6715 Professional Selling in Sport (3 credit hours); or SPM 6108 Facilities and Event Management (3 credit hours)
- Either SPB 6206 Professional Sport Industry (1.5 credit hours); or SPB 6106 Intercollegiate Sport Industry (1.5 credit hours)

### **Internship—5 Credit Hours**

An internship equivalent to five credit hours with a designated sport organization is required. It would normally be a full-time, 15-week internship taken after the completion of all academic courses. The internship is an independent learning activity that takes place in authentic settings (all settings are professional sports settings, such as the NBA, NFL, etc.) in which students must apply, reflect upon, and refine knowledge and skills acquired in the program.

### **Service Learning—1 Credit Hour**

- SPB 6607 Service Learning in Sport (1 credit hour)

### **MBA**

Upon successful completion of two additional, adviser-approved, graduate courses (6 credit hours), students will earn an MBA degree and receive an MBA diploma, in addition to a Master of Sport Business Management diploma.

All students are required to participate in an internship in professional sport settings in which students must apply, reflect upon, and refine knowledge and skills acquired throughout the curriculum.

### **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

- Official, competitive GMAT score taken within the last five years.
- Three letters of recommendation.
- Essay (for details, see [www.bus.ucf.edu/sport](http://www.bus.ucf.edu/sport)).
- Résumé.
- All finalists will be required to have an in-person interview.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

| Sport Business Management MSBM    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 1  |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Feb 1  |        |        |

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 Business Administration II 205D

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# Statistical Computing MS

- Actuarial Science MS
- Data Mining MS

## PROGRAM DESCRIPTION

The program in Statistical Computing provides a sound foundation in statistical theory, statistical methods, numerical methods in statistical computing, and the application of computer methodology to statistical analyses. The MS is particularly suited for individuals who have completed an undergraduate program in

mathematics, statistics, or computer science, but is also available to those from other disciplines who wish to develop an expertise in data analysis and statistical computing.

## CURRICULUM

The Statistical Computing MS program requires a minimum of 36 credit hours beyond the bachelor's degree. The degree in Statistical Computing includes 21 credit hours of required courses, 15 credit hours of restricted electives, and passing a comprehensive examination.

### Total Required Hours for MS—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Required Courses—21 Credit Hours

- STA 5205 Experimental Design (3 credit hours)
- STA 6106 Statistical Computing I\* (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 credit hours)

Select one of the following courses.

- STA 6246 Linear Models (3 credit hours)
- STA 6707 Multivariate Statistical Methods (3 credit hours)

Note: \*STA 6106 provides the independent learning experience for the program. It requires a research project that results in a written report or oral presentation.

#### Restricted Electives—15 Credit Hours

Other statistics courses will be selected by the student in consultation with the adviser. Certain graduate courses in computer science, mathematics, and engineering may be selected if approved by the Department of Statistics.

#### Examination

All students must take a comprehensive written examination covering the courses STA 5205, STA 6236, STA 6326, and STA 6327. For full-time students, this examination normally will be taken

just prior to the start of the second year of graduate work. Students are allowed two attempts to pass the exam. Failure to pass after the second attempt will result in removal from the program.

STA 6106 provides the independent learning experience for the program. It requires a research project that results in a written report or oral presentation.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Statistical Computing MS          | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

## CONTACT INFO

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Department of Statistics  
Computer Classroom II 205

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### *Statistical Computing MS*

# Actuarial Science MS

## TRACK DESCRIPTION

The Master of Science in Actuarial Science focuses on actuarial science and its application to insurance and risk management.

## CURRICULUM

### Total Required Hours for MS—36 Credit Hours Minimum beyond the Master's Degree.

The Actuarial Sciences MS program is composed of 24 credit hours of required courses and 12 credit hours of restricted electives. Students must also pass a comprehensive written examination.

### Required Courses—24 Credit Hours

- STA 6185 Advanced Theory of Interest\* (3 credit hours)
- STA 5139 Credibility Theory and Loss Distribution (3 credit hours)
- STA 6677 Actuarial Models (3 credit hours)
- STA 6133 Life Contingencies and Insurance Models I (3 credit hours)
- STA 6135 Life Contingencies and Insurance Models II (3 credit hours)
- STA 6673 Risk Management and Actuarial Applications (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)

Note: \*STA 6185 provides the independent learning experience for the program by requiring a research project that will be presented orally or in written form.

### Restricted Elective Courses—12 Credit Hours\*

Take at least six credit hours from the following list of courses.

- STA 5646 Casualty Insurance (3 credit hours)
- STA 4672 Actuarial Statistical Methods (3 credit hours)
- STA 5948 Actuarial Science Practicum (3 credit hours)
- STA 6132 Pension Actuarial Science (3 credit hours)
- STA 6931 Topics in Actuarial Science (3 credit hours)
- STA 6679 Actuarial Research Methods (3 credit hours)

Take at the most six credit hours from the following list of courses.

- STA 5825 Stochastic Processes and Applied Probability Theory (3 credit hours)



- STA 6106 Statistical Computing I (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6707 Multivariate Statistical Methods (3 credit hours)
- STA 6857 Applied Time Series Analysis (3 credit hours)

\* With an adviser approval, students may select a course offered by the Economics, Finance, or Mathematics departments.

### Examination

All students must take a comprehensive written examination covering the six courses STA 6185, STA 6133, STA 6135, STA 6326, STA 6327, and STA 6677. For full-time students, this examination normally will be taken just prior to the start of the second year of graduate work. Students are allowed two attempts to pass the exam. Failure to pass after the second attempt will result in removal from the program.

### Total Required Hours for MS—36 Credit Hours Minimum beyond the Bachelor's Degree.

#### Required Courses—21 Credit Hours

- STA 5205 Experimental Design (3 credit hours)
- STA 6106 Statistical Computing I\* (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 credit hours)

Select one of the following courses.

- STA 6246 Linear Models (3 credit hours)
- STA 6707 Multivariate Statistical Methods (3 credit hours)

Note: \*STA 6106 provides the independent learning experience for the program. It requires a research project that results in a written report or oral presentation.

#### Restricted Electives—15 Credit Hours

Other statistics courses will be selected by the student in consultation with the adviser. Certain graduate courses in computer science, mathematics,

and engineering may be selected if approved by the Department of Statistics.

### Examination

All students must take a comprehensive written examination covering the courses STA 5205, STA 6236, STA 6326, and STA 6327. For full-time students, this examination normally will be taken just prior to the start of the second year of graduate work. Students are allowed two attempts to pass the exam. Failure to pass after the second attempt will result in removal from the program.

STA 6185 provides the independent learning experience for the program by requiring a research projects that will be presented orally or in written form.

### ADMISSIONS

In addition to meeting general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.
- Résumé.

Applicants not qualified for regular graduate status may be initially admitted to the university in non-degree-seeking status and later admitted to regular status once all deficiencies have been eliminated, although only nine hours of graduate course work taken as a non-degree-seeking student can count toward a graduate degree.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Actuarial Science MS              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

## CONTACT INFO

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 Department of Statistics  
 Computer Classroom II 205

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### *Statistical Computing MS*

## Data Mining MS

### TRACK DESCRIPTION

The Master of Science in Data Mining focuses on data mining and its application to business, social, and health problems.

### CURRICULUM

#### **Total Required Hours for MS in—36 Credit Hours Minimum beyond the Bachelor's Degree.**

The Data Mining MS is composed of 24 credit hours of required courses and 12 credit hours of restricted electives. Students must also pass a comprehensive written examination.

#### **Required Courses—24 Credit Hours**

- STA 5103 Advanced Computer Processing of Statistical Data (3 credit hours)
- STA 6714 Data Preparation (3 credit hours)
- STA 6238 Logistic Regression (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)
- STA 6327 Theoretical Statistics II (3 credit hours)

- STA 6236 Regression Analysis (3 credit hours)
- STA 5703 Data Mining Methodology I\* (3 credit hours)
- STA 6704 Data Mining Methodology II\* (3 credit hours)

Note: \*STA 5703 and 6704 both require research projects which fulfill the independent learning requirement for the program.

#### **Restricted Electives—12 Credit Hours**

- COP 4710 Database Systems (3 credit hours)
- STA 5505 Categorical Data Methods (3 credit hours)
- STA 5825 Stochastic Processes and Applied Probability Theory (3 credit hours)
- STA 6106 Statistical Computing I (3 credit hours)
- STA 6226 Sampling Theory and Applications (3 credit hours)
- STA 6237 Nonlinear Regression (3 credit hours)
- STA 6507 Nonparametric Statistics (3 credit hours)
- STA 6707 Multivariate Statistical Methods (3 credit hours)
- STA 6857 Applied Times Series Analysis (3 credit hours)
- STA 6705 Data Mining Methodology III (3 credit hours)

### Examination

All students must take a comprehensive written examination covering the five courses STA 6326, STA 6327, STA 5103, STA 6714 and STA 6238. For full-time students, this examination will normally be taken just prior to the start of the second year of their graduate work. Students are allowed two attempts to pass the exam. Failure to pass after the second attempt will result in removal from the program.

#### **Total Required Hours for MS—36 Credit Hours Minimum beyond the Bachelor's Degree.**

#### **Required Courses—21 Credit Hours**

- STA 5205 Experimental Design (3 credit hours)
- STA 6106 Statistical Computing I\* (3 credit hours)
- STA 6236 Regression Analysis (3 credit hours)
- STA 6326 Theoretical Statistics I (3 credit hours)

- STA 6327 Theoretical Statistics II (3 credit hours)
- STA 6329 Statistical Applications of Matrix Algebra (3 credit hours)

Select one of the following courses.

- STA 6246 Linear Models (3 credit hours)
- STA 6707 Multivariate Statistical Methods (3 credit hours)

Note: \*STA 6106 provides the independent learning experience for the program. It requires a research project that results in a written report or oral presentation.

### Restricted Electives—15 Credit Hours

Other statistics courses will be selected by the student in consultation with the adviser. Certain graduate courses in computer science, mathematics, and engineering may be selected if approved by the Department of Statistics.

### Examination

All students must take a comprehensive written examination covering the courses STA 5205, STA 6236, STA 6326, and STA 6327. For full-time students, this examination normally will be taken just prior to the start of the second year of graduate work. Students are allowed two attempts to pass the exam. Failure to pass after the second attempt will result in removal from the program.

STA 5703 and 6704 both require research projects which fulfill the independent learning requirement for the program. STA 5703 and STA 6704 both require students to build models for target variables of projects with very large sets of data, write a report, and then give an oral presentation on their independent learning experiences.

## ADMISSIONS

In addition to meeting general admission requirements, applicants must provide an official, competitive GRE or GMAT score taken within the last five years and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE or GMAT score taken within the last five years.

- Résumé.

Applicants not qualified for regular graduate status may be initially admitted to the university in non-degree-seeking status and later admitted to regular status once all deficiencies have been eliminated, although only nine hours of graduate course work taken as a non-degree-seeking student can count toward a graduate degree.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Data Mining MS                    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

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## Taxation MST

### PROGRAM DESCRIPTION

The Master of Science in Taxation program is designed to prepare individuals for careers as tax professionals and tax consultants in public practice, government, and industry. The program, along with appropriate foundation work, satisfies the Florida requirements to qualify to take the Certified Public Accountant (CPA) examination. Faculty members in the Kenneth G. Dixon School of Accounting emphasize independent learning in various ways in

all courses in the MST program. Cases and research projects that involve independent work outside the classroom are incorporated into all course work. The cases and projects are both individual and team prepared. Students are asked to do research that requires they utilize library, internet and resources other than the material provided by the professor. The results of independent research activity are presented in a written report, a case analysis, or an oral presentation. Students work to develop and enhance skills and competencies that will support them professionally throughout their careers. The approaches used in our courses encourage life-long learning. In addition, each student must pass a final oral examination that is administered by a committee of graduate faculty.

## CURRICULUM

The Master of Science in Taxation degree is awarded upon completion of a minimum 30 credit hours, which includes 18 credit hours minimum must be at the 6000 level. The program offers Tax Professional and Tax Consultant specializations from which available electives may be taken. If business prerequisites are satisfied, students will be required to take an additional 15-18 business credit hours to meet the requirements to take the CPA examination.

### Total Required Hours for MST—30 Credit Hours Minimum beyond the Bachelor's Degree.

Case analyses and research projects are incorporated into course work that requires students to successfully obtain and demonstrate their ability to learn independently. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the accounting profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area.

### Prerequisite Foundation Core—34 Credit Hours

The courses included in the prerequisite foundation core are listed under the Master of Science in Accounting degree requirements. The requirements must be fulfilled by students completing either the Professional or Consulting Specialization. A recent UCF accounting undergraduate degree satisfies the

foundation core requirement. Other recent related business course work may partially or fully satisfy this requirement. Any deficiencies must be satisfied before advanced course work can be taken.

### Required Course—3 Credit Hours

- TAX 6065 Tax Research (3 credit hours)
- TAX 5015 Advanced Tax Topics (3 credit hours)
- TAX 6135 Taxation of Corporations and Shareholders (3 credit hours)
- TAX 6205 Partnership Taxation (3 credit hours)
- TAX 6405 Taxation of Estates and Gifts (3 credit hours)
- TAX 6845 Tax Planning and Consulting (3 credit hours)
- TAX 6505 International Taxation (3 credit hours)
- TAX 6946 Tax Internship (3 credit hours)
- TAX 6909 Research Report (3 credit hours)

### Elective Courses—15 Credit Hours

Electives may be selected from the tax electives listed above, from the courses included in the consulting specialization listed below, and from courses available in the Master of Science in Accounting degree program. Other courses require approval. ACG 6636 Advanced Auditing Topics and BUL 5332 Advanced Business Law Topics are recommended for candidates planning to sit for the CPA examination.

- TAX 6845 Tax Planning and Consulting (3 credit hours)
- FIN 6406 Strategic Financial Management (3 credit hours)
- TAX 5015 Advanced Tax Topics (3 credit hours)
- TAX 6135 Taxation of Corporations and Shareholders (3 credit hours)
- TAX 6205 Partnership Taxation (3 credit hours)
- TAX 6405 Taxation of Estates and Gifts (3 credit hours)
- TAX 6946 Tax Internship (3 credit hours)
- TAX 6909 Research Report (3 credit hours)
- TAX 6505 International Taxation (3 credit hours)
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- FIN 6425 Asset Management and Financial Decisions (3 credit hours)
- FIN 6475 Valuation of Small Businesses (3 credit hours)

- FIN 6515 Analysis of Investment Opportunities (3 credit hours)
- ISM 6537 Quantitative Models for Business Decisions (3 credit hours)
- MAR 6845 Services Marketing (3 credit hours)

Other courses require approval. ACG 6636, Advanced Auditing Topics, and BUL 5332, Advanced Business Law Topics, are recommended for candidates planning to sit for the CPA examination.

### Examination or Research Report

Satisfactory completion of either the end-of-program oral comprehensive examination or a Research Report (TAX 6909) is required.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program need the following:

- One official transcript (in a sealed envelope) from each college/university attended.
- 3.0 GPA in upper division accounting and tax courses.
- Official, competitive GRE or GMAT score taken within the last five years.
- Résumé.
- A score of at least 233 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants with degrees from a non-U.S. accredited institution.

| Taxation MST                                                       | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                | Jan 15        | Jun 15 | Dec 1  | Mar 15 |
| The Fall 2008 application deadline has been extended to July 15th. |               |        |        |        |
| International Applicants                                           | Jan 15        | Jan 15 | Jul 1  | Nov 1  |

| Taxation MST                      | Fall Priority | Fall  | Spring | Summer |
|-----------------------------------|---------------|-------|--------|--------|
| International Transfer Applicants | Jan 15        | Mar 1 | Sep 1  | Dec 15 |

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## Teacher Leadership MEd

### PROGRAM DESCRIPTION

The Master of Education program in Teacher Leadership is designed for certified and experienced educators who are interested in developing expertise in leading other educators in curriculum and instructional improvement across subject areas and grade levels, in order to advance their own practice and to serve as faculty-based leaders contributing to sustainable improvement in their schools and educational contexts.

The Teacher Leadership MEd program requires a course-based action research study. The research study and the comprehensive exams will focus on reviewing and analyzing contemporary research in the core areas of teacher leadership, curriculum, instruction, and social and cultural competency in order to help students acquire knowledge, skills, and dispositions pertaining to research-based practices in these areas.

Students select a specialization in Urban Education or a specialization in Curriculum Leadership, Gifted Education, Global and Comparative Education, Teaching Excellence, or Foreign Language Education. Candidates selecting Urban Education must apply to that specialization during the admissions process. Candidates selecting other specializations may choose their specialization after admission. This degree does not prepare students

for administrative or supervisory certification.

## CURRICULUM

The Teacher Leadership MEd program requires a minimum of 33 credit hours beyond the bachelor's degree, including 18 credit hours of core courses, and 15 credit hours within a chosen specialization.

### Total Hours Required for MEd—33 Credit Hours Minimum Beyond the Bachelor's Degree.

The MEd degree program requires a course-based action research study (i.e., application and analysis of the effectiveness of research-based best practices in the classroom). The research study and the comprehensive exams will focus on reviewing and analyzing contemporary research in the core areas of teacher leadership, curriculum, instruction, and social and cultural competency in order to help students acquire knowledge, skills, and dispositions pertaining to research-based practices in these areas. Students also select a specialization in Curriculum Leadership, Foreign Language Education, Gifted Education, Global and Comparative Education, Teaching Excellence, or Urban Education.

### Required Core Courses—18 Credit Hours

- EDG 6XXX Seminar in Teacher Leadership (3 credit hours)
- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6635 Teacher Leadership for Educational Equity and Social Justice (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)

### Specialization—15 Credit Hours

#### Curriculum Leadership

Students take the following courses and complete 6 credit hours of electives approved by their adviser.

- ESE 6217 Curriculum Design (3 credit hours)
- ESE 6416 Curriculum Evaluation (3 credit hours)

- EDG 6224 Curriculum Policy Analysis (3 credit hours)

Choose two elective courses with adviser approval:

- EDF 6517 Perspectives on Education (3 credit hours)
- EME 5050 Fundamentals of Technology for Educators or EME 6602 Integration of Technology into the Curriculum (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EDS 6123 Supervision 1 or EDS 6130 Supervision 2 or EDA 6502 Administration of Instructional Programs (3 credit hours)
- IDS 6516 Leadership Development for Math and Science Teachers (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- Other electives as approved by adviser and program coordinator (up to 6 credit hours)

#### Gifted Education

- EGI 6051 Understanding the Gifted/Talented Student (3 credit hours)
- EGI 6245 Program Planning and Methodology for Gifted/Talented Students (3 credit hours)
- EGI 6246 Education of Special Populations of Gifted Students (3 credit hours)
- SDS 6426 Guidance and Counseling of Gifted/Talented Individuals (3 credit hours)
- EGI 6305 Theory and Development of Creativity (3 credit hours)

#### Urban Education

Students take the following courses and complete 6 credit hours of electives approved by their adviser.

- EDF 6725 Critical Issues in Urban Education (3 credit hours)
- EDF 6936 Teaching and Learning in Urban Settings (3 credit hours)
- EDF 6636 Social Context of the Urban Classroom (3 credit hours)

Choose two elective courses with adviser approval:

- EEX 6342 Seminar, Critical Issues in Special Education (3 credit hours)
- EDF 6688 Public Policy and Urban Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EGI 6426 Education of Special Populations of Gifted Students (3 credit hours)

- SYD 5795 Class, Race, and Gender in American Society (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

**Note:** Students who took EDF 6635 Teacher Leadership for Educational Equity and Social Justice in the Urban Education Graduate Certificate program will need to take an additional elective.

**Global and Comparative Education**

Students take the following courses and complete 3 credit hours of electives approved by their adviser.

- EDF 6206 Challenges of Classroom Diversity (3 credit hours)
- EDF 6809 Introduction to Comparative and International Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

Choose one elective course with adviser approval:

- TSL 5345 Methods of ESOL Teaching (3 credit hours)
- TSL 6142 Critical Approaches to ESOL (3 credit hours)
- TSL 6440 Problems in Evaluation in ESOL (3 credit hours)
- Other TSL courses or another elective with advisor and program coordinator approval.

**Foreign Language Education**

Students take the following courses and complete 6 credit hours of electives approved by their adviser.

- FLE 6695 Professional Development in Foreign Language Education\* (3 credit hours)
- FLE 6705 Testing and Evaluation in Foreign Language Education (3 credit hours)
- FLE 6455 Curriculum and Materials in Foreign Language Teaching (3 credit hours)

Choose two elective courses with adviser approval:

- FLE 5335 Foreign Language Methods at the Elementary Level (3 credit hours)
- FLE 5331 Foreign Language Methods at the Secondary Level\*\* (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- Select one 5000-level SPN course\*\* (3 credit hours)

\*Near native proficiency in Spanish is required

\*\* Online courses

**Teaching Excellence**

- EDG 6392 Seminar in Quality Teaching (3 credit hours)
- EDG 6629 Quality Teaching Practices (3 credit hours)
- EDG 6326 Assessment of Quality Teaching (3 credit hours)
- LAE 5295 Writing Workshop I (3 credit hours)
- Select one elective from the other specialization areas above or another course with adviser approval (3 credit hours)

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Statement of goals.

Students may not switch from an MA program to a MEd program, or vice versa, without going through the university’s admission process. Courses used to gain initial state certification may not be transferred into a MEd program.

| Teacher Leadership MEd            | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

**CONTACT INFO**

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 Educational Studies  
 Education 220H

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# Teaching English to Speakers of Other Languages MA

**PROGRAM DESCRIPTION**

The Master of Arts in Teaching English to Speakers of Other Languages (TESOL) is an interdisciplinary graduate program offered by the College of Arts and Humanities and the College of Education. The program provides students a strong foundation in language acquisition, use, and pedagogy.

**CURRICULUM**

The Teaching English to Speakers of Other Languages MA program requires a minimum of 30 credit hours beyond the bachelor's degree. Students may elect to follow the thesis or nonthesis plan of study. The thesis plan of study consists of 30 credit hours: 24 credit hours of core courses, 3 credit hours of electives, and 3 credit hours of TSL 6971 Thesis. The nonthesis plan of study requires 36 semester hours: 24 semester hours of core courses and 12 semester hours of electives. All students must take a written final comprehensive examination covering the core TSL courses.

**Total Required Hours for MA—30-36 Credit Hours Minimum beyond the Bachelor's Degree.**

The thesis option is appropriate for those students wishing to research current issues in the discipline or eventually pursue a doctoral program in TESOL or related language field. By the end of the second semester, students wishing to pursue the thesis option should speak with the program director to seek approval and a recommendation for a thesis

committee chairperson. Most students complete the nonthesis course of study so that they can focus more on course work related to specific aspects of TESOL, pedagogy, or education.

All courses require a final research project that allows students to propose, plan, research, develop, write, and present their research study. One research course, either TSL 6640 Research in Second Language or EDF 6481 Fundamentals of Graduate Research in Education, is required and should be taken in the first semester of study. A final cumulative course, TSL 6540 Issues in Second Language Acquisition, is required.

All students must take a comprehensive written examination covering the core TSL courses. This examination is normally taken in the last semester of graduate work and will be reviewed by members of the TESOL Graduate Committee. A student may take the comprehensive examination only twice. A second examination will not be given in the same semester in which the first attempt occurred.

**Core Courses—24 Credit Hours**

**Eight required core courses provide a strong foundation in the content of the discipline.**

- TSL 5525 ESOL Cultural Diversity or EDF 6886 Multicultural Education (3 credit hours)
- TSL 6142 Critical Approaches to ESOL (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)
- TSL 6350 Grammar for ESOL Teachers (3 credit hours)
- TSL 6440 Problems in Evaluation in ESOL (3 credit hours)
- TSL 6642 Issues in Second Language Acquisition (3 credit hours)
- TSL 6640 Research in Second Language or EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- TSL 5345 Methods of ESOL Teaching or TSL 6940 ESOL Practicum (3 credit hours)

**Thesis Option—6 Credit Hours**

- TSL 6971 Thesis (3 credit hours)
- Elective (3 credit hours)

**Nonthesis Option and Electives—12 credit hours**



### Elective Courses—3 Credit Hours

Electives provide for three distinct areas of interest: linguistics, multicultural education, and research. Students may opt to take their elective credit in one of these areas depending on their interests. A strong research base is available for students pursuing the thesis option and advanced graduate degrees.

#### TESOL

- TSL 5143 ESOL Strategies (3 credit hours)
- TSL 5380 Computers and Technology for ESOL (3 credit hours)
- TSL 5376 Reading and Writing in a Second Language (3 credit hours)
- TSL 5940 Issues in TEFL (3 credit hours)
- TSL 6252 Sociolinguistics for ESOL (3 credit hours)

#### Linguistics

- LIN 5137 Linguistics (3 credit hours)
- LIN 6932 Problems in Linguistics (3 credit hours)

#### Multicultural Education and Pedagogy

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6216 Motivation in Learning and Performance (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- FLE 5875 Computer Application in Teaching Foreign Languages (3 credit hours)
- SPN 5502 Hispanic Culture of the United States (3 credit hours)
- TSL 6940 ESOL Practicum (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)
- SPA 6474 Assessment of Culturally and Linguistically Populations (3 credit hours)

#### Research

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 6486 Research Design in Education (3 credit hours)
- TSL 6640 Research in Second Language (3 credit hours)

All students in the program are required to take TSL 6640 Research in Second Language and TSL 6642 Issues in Second Language Acquisition. Both classes have as a final project a research paper that

organizes and summarizes knowledge in a chosen area of study. All classes in the program require a research paper/project allowing students to engage in independent learning.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Two letters of recommendation.
- Background questionnaire (sent to applicant by the department).

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Teaching English to Speakers of Other Languages MA | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                           | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants                  | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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 Department of Modern Languages and Literatures  
 CNH 409

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# Technology MS

## PROGRAM DESCRIPTION

The Master of Science in Technology is an interdisciplinary program emphasizing partnerships between industry and academia that can be completed entirely online. It provides an integrated curriculum in technology and leadership. High-tech companies face significant challenges as they try to maintain an advantage in a global economy that offers great business opportunities. Achieving and managing the continuous growth of their core technology competencies and product lines are among the challenges that these companies face. To meet these challenges, managers must possess two sets of competencies: technical knowledge and management skills.

The program can greatly help business and community leaders who are moving into management positions and recognize that advanced technical knowledge must be coupled with strong communication and administrative skills. The Technology MS program also provides useful tools for managers, business and educational leaders who recognize that an understanding of issues in specific technology fields is critical in maintaining a competitive advantage in a global market.

## CURRICULUM

The Technology MS degree requires 30 credit hours of acceptable graduate work, including 15 credit hours of required courses, 12 credit hours of electives, and three credit hours of a graduate capstone course.

### Total Hours Required for MS—30 Credit Hours

Students in the Technology MS develop an individual program of study with a faculty adviser

by the second semester of study. At least one-half of the required credits must be taken at the 6000 level.

Research studies are required in one or more courses. The research study and report should focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research, or a research report during their studies.

### Required Courses—15 Credit Hours

- ETG 5918 Applied Research Methods (3 credit hours)
- ETI 6134 Technology and Analysis for Enterprise (3 credit hours)
- ETI 6443 Technology for Project Management (3 credit hours)

Take one course from each of the following groups.

#### Information Systems

- CET 5012 Information and Communications Infrastructure (3 credit hours)
- EIN 5117 Management Information Systems (3 credit hours)

#### Statistics

- STA 5206 Statistical Analysis (3 credit hours)
- ESI 5219 Engineering Statistics (3 credit hours)

### Elective Courses—12 Credit Hours

Take four more courses (12 credit hours) of approved electives (see your adviser for approval). Two of these courses must be at the 6000-level.

- ETG 6XXX Advanced Topics in Technology (3 credit hours)
- CET 6XXX Practice of Digital Forensics (3 credit hours)
- CET 6XXX Incidence Response Technologies (3 credit hours)
- CET 6XXX OS and File System Forensics (3 credit hours)
- CGS 5131 Computer Forensics I (3 credit hours)
- CGS 5132 Computer Forensics II (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- ESI 6224 Quality Management (3 credit hours)

- ESI 6225 Quality Design and Control (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)
- EIN 5255 Interactive Simulation (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- ESI 5227 Total Quality Improvement (3 credit hours)
- ISM 5021 Introduction to Management Systems (3 credit hours)
- ECO 6115 Economic Analysis of the Firm (3 credit hours)
- MAN 6245 Organizational Behavior & Development (3 credit hours)
- MAN 6296 Executive Leadership (3 credit hours)
- MAN 6395 Leadership Development and Coaching (3 credit hours)
- MAR 6406 Sales Management and Control (3 credit hours)
- MAR 6677 Marketing Engineering (3 credit hours)
- MAR 6809 Digital Marketing Management (3 credit hours)
- MAR 6816 Strategic Marketing Management (3 credit hours)
- MAR 6839 Marketing of High-Technology Products (3 credit hours)
- ISM 6367 Strategic Information Systems (3 credit hours)
- STA 6106 Statistical Computing (3 credit hours)
- STA 5206 Statistical Analysis (3 credit hours)
- STA 6662 Statistical Methods for Industrial Practice (3 credit hours)
- STA 5103 Advanced Computer Processing of Statistical Data (3 credit hours)
- STA 6714 Data Preparation (3 credit hours)
- STA 5703 Data Mining Methodology I (3 credit hours)
- STA 6704 Data Mining Methodology II (3 credit hours)

### Capstone Course—3 Credit Hours

- ETG XXXX (3 credit hours)

Students will have to complete a Graduate Capstone course. To adhere to College of Graduate Studies requirements this needs to be a 6000-level class to ensure that half of the curriculum is at the 6000 level.

The capstone course provides the independent

learning experience for the program. In addition, research studies are required in one or more courses. The research study and report should focus on reviewing and analyzing contemporary research in a student's particular specialization within the profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. In addition, students may engage in directed independent studies, directed research, or a research report during their studies.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

**The College of Engineering and Computer Science requires a pre-application form ([www.cecs.ucf.edu/preapp](http://www.cecs.ucf.edu/preapp)) before completing the application for graduate admission.** The deadlines for the pre-application form can be found on the Prospective Student Page on the College of Engineering and Computer Science website.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Résumé.
- Statement of educational, research, and professional career objectives.

Faculty members may choose to conduct face-to-face or telephone interviews before accepting an applicant into their research program.

Deficiencies for admission to the graduate program, if any, are specified at the time of admission. The applicant's past work and professional experience is also evaluated and taken into consideration when determining admission classification. However, to be considered for regular admission, a 3.0 GPA is required.

| Technology MS                     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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# Theatre MA

## PROGRAM DESCRIPTION

The Master of Arts in Theatre program provides high school teachers, community college teachers, and developing theatre scholars with the opportunity to strengthen skills and knowledge beyond the undergraduate level. Its purpose is not to train persons for professional careers in the arts and entertainment industry. As a result, the program of study is flexible and more theoretical. It provides less practical theatre training than the MFA degree. MA students typically pursue a variety of goals: increasing specific theatrical skills, extending theatre skills into new areas, preparing for entrance into doctoral Theatre programs, or in the case of educators, expanding their expertise and credentials. Students may be admitted on either a full-time or part-time basis.

## CURRICULUM

The Master of Arts in Theatre program is a rigorous one and a half year course of study of 39 credit hours minimum, culminating in the writing of a scholarly thesis. Of the 39 credit hours required for the degree, 30 credit hours are required core courses with the other 9 credit hours chosen from a

specified list of elective Theatre courses offered by the Department.

## Total Required Hours for MA—39 Credit Hours Minimum beyond the Bachelor's Degree.

The Theatre MA program is a rigorous one and a half year course of study, culminating in the writing of a scholarly thesis. Candidates must demonstrate the ability to understand the conceptual basis of their art and to be able to articulate that understanding to others. In addition to their theoretical studies, MA students are also required to demonstrate proficiency in theatrical production.

Students must maintain a minimum "B" (3.00) overall Theatre GPA to continue in the major. Fifty percent of graduate course work must be at the 6000 level. Theatre courses with grades of less than "C" will not be counted toward degree requirements. Continuation in the MA program requires a positive annual evaluation. All graduate students must consult with a departmental adviser. All MA students must successfully complete a written thesis. The thesis proposal must be approved in advance.

### Core Courses—21 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6507 Dramatic Theory and Criticism (3 credit hours)
- THE 5205 American Theatre (3 credit hours)
- TPA 5405 Theatre Management for Non-Majors or elective (3 credit hours)
- THE 6086 Careers in Professional Theatre or elective (3 credit hours)
- THE 5307 Contemporary Theatre Practice or Dramatic Literature elective (3 credit hours)
- THE 5945L Theatre Practicum I (1 credit hour)
- THE 5946L Theatre Practicum II (1 credit hour)
- THE 6947L Theatre Practicum III (1 credit hour)

### Elective Courses—9 Credit Hours

Other graduate-level courses may be permitted with departmental approval.

- TPA 5258C Auto Cad-2D for Theatre (3 credit hours)
- TPA 5299C Auto Cad-3D for Theatre (3 credit hours)

- THE 5288 Period Costumes, Architecture, and Decor I (3 credit hours)
- THE 5289 Period Costumes, Architecture, and Decor II (3 credit hours)
- TPP 6686 Playwriting for Young Audiences (3 credit hours)
- TPP 5246C Circus Arts (2 credit hours)
- TPA 5885C Puppetry (2 credit hours)
- TPP 5125C Improvisation Studio (2 credit hours)
- TPP 5248C Storytelling as a Theatrical Art Form (2 credit hours)

### **Thesis—9 Credit Hours**

- THE 6971 Thesis (9 credit hours)

## **Course Schedule**

### **YEAR 1**

#### **Fall—13 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- TPA 5405 Theatre Management for Non-Majors or elective (3 credit hours)
- 5000 level Theatre elective (3 credit hours)
- THE 6507 Dramatic Theory and Criticism (3 credit hours)
- THE 5945L Theatre Practicum I (1 credit hour)

#### **Spring—13 Credit Hours**

- THE 6086 Careers in Professional Theatre (3 credit hours)
- THE 5205 American Theatre (3 credit hours)
- THE 5307 Contemporary Theatre Practice (3 credit hours)
- THE 5946L Theatre Practicum II (1 credit hour)
- THE 6971 Thesis (3 credit hours)

### **YEAR 2**

#### **Fall—13 Credit Hours**

- 6000-level Theatre electives (6 credit hours)
- THE 6947L Theatre Practicum III (1 credit hour)
- THE 6971 Thesis (6 credit hours)

## **Examination**

A comprehensive departmental theatre exam is administered to MA majors at the end of their course work. The department allows two attempts at a comprehensive exam.

## **Transfer and Residency**

Students without an earned master's degree can usually transfer up to 9 semester hours of credit into this program. A minimum of 30 credits must be taken at the University of Central Florida. Students must complete a residency requirement of at least two full-time consecutive semesters. A summer session may be counted toward the two consecutive semester requirement.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- BA or BFA in Theatre or equivalent.
- A 3.0 Theatre GPA (with at least a 2.5 overall)
- Official, competitive GRE score taken within the last five years.
- An interview is required.
- 5-10 page academic paper.
- Goals statement.
- An 8 X 10 headshot.
- Three letters of recommendation.
- Complete the general entrance prerequisites.

**General Entrance Prerequisites**—Students applying for entrance into the MA must have successfully completed the following undergraduate courses or their equivalent: Script Analysis or Play Analysis, Theatre History I and II, Dramatic Literature I and II, Directing I.

Each student entering the program must be approved by the Graduate Committee of the Department of Theatre.

| Theatre MA                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 15 | Dec 1  | Apr 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

## CONTACT INFO

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# Creative Writing

## MFA

### PROGRAM DESCRIPTION

The MFA program in Creative Writing offers workshop courses in fiction, creative nonfiction, scriptwriting and poetry, emphasizing the art and craft of literary writing and concentrating on the student's written work. The workshop-intensive program emphasizes the study of theory and published writing alongside the closely analyzed production of student texts. Our prolific, dedicated faculty members have won numerous prestigious awards for their work and have served as officers in the Associated Writing Programs (AWP) and other national organizations.

### CURRICULUM

The minimum total hours required for the Creative Writing MFA is 36 credit hours, including nine required credit hours of writing workshops. Near the end of the degree program, each candidate will write a book-length creative thesis.

### Total Required Hours for MFA—36 Credit Hours Minimum beyond the Bachelor's Degree.

A student with a baccalaureate degree in a subject other than English may be required to take graduate survey courses in British and American literature. Students must also prove proficiency in a foreign language at the first-year level prior to completing the degree program.

### Required Courses—15 Credit Hours

#### Creative Writing Courses—9 Credit Hours

- CRW 5020 Graduate Writing Workshop (3 credit hours)\* may be repeated for credit
- CRW 6025 Advanced Graduate Writing Workshop (3 credit hours)\* may be repeated for credit

#### Literature Courses—6 Credit Hours

- LIT 6039 Studies in Contemporary Poetry (3 credit hours)
- LIT 6097 Studies in Contemporary Fiction (3 credit hours)

### Elective Courses—15 Credit Hours

#### Restricted Creative Writing Electives—6 Credit Hours

- CRW 5020 Graduate Writing Workshop (3 credit hours). May be repeated for credit.
- CRW 5130 Form and Theory in Creative Writing (3 credit hours). May be repeated for credit if taken in different genres.
- CRW 6806C Teaching Creative Writing (3 credit hours)
- CRW 5938 Special Topics Seminar (3 credit hours)
- CRW 5948C Creative Writing Service Learning (3 credit hours)
- CRW 6025 Advanced Graduate Writing Workshop (3 credit hours). May be repeated for credit.
- CRW 6946 Florida Review Internship (3 credit hours)

#### Literature Electives—6 Credit Hours

- LIT 6009 Literary Genres (3 credit hours)
- LIT 6105 World Literature (3 credit hours)
- LIT 6246 Major Authors (3 credit hours)
- LIT 6365 Movements in Literature (3 credit hours)

**Additional Electives—3 Credit Hours****Thesis—6 Credit Hours**

- CRW 6971 Thesis (6 credit hours)

The candidate will complete a book-length manuscript of publishable quality, written and revised in CRW 6971, Thesis, that meets both departmental and university requirements for the thesis. There is no nonthesis option in Creative Writing.

The requirement of producing a book-length manuscript to satisfy the thesis requirement is the independent learning experience.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation.
- Statement of background and goals. If you were not a English major, we recommend you include a list (5-7 titles) of recently read contemporary books in the genre in which you are applying.
- Résumé.
- A portfolio of fiction, poetry, or creative nonfiction. The portfolio must be in English and in the applicant's primary genre (15 pages of poetry, 30 pages of fiction, or 30 pages of creative nonfiction). This manuscript is the most important element of a candidate's application. It will be evaluated by a committee of Creative Writing faculty to assess the candidate's readiness for graduate study. The committee's decision is based upon its qualitative assessment for the manuscript's competence in standard English and originality, and the author's demonstrated potential to succeed as a creative writer.

- One year of a foreign language at the university level (may be taken while in graduate residence).

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Creative Writing MFA              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jan 15 |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Jan 15 |        |        |

**CONTACT INFO**

Graduate Program Office  
Other  
mfacrw@mail.ucf.edu  
Telephone 407-823-5329  
English Department  
Colbourn Hall 301A

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## Film and Digital Media MFA

- Entrepreneurial Digital Cinema MFA
- Visual Language and Interactive Media MFA

**PROGRAM DESCRIPTION**

The Film and Digital Media Master of Fine Arts offers tracks in Entrepreneurial Digital Cinema and Visual Language and Interactive Media. The ideal MFA student is an imaginative, visual storyteller and inventive problem-solver who is interested in exploring digital cinema and the intersection of art and commerce utilizing real world applications. They are independent thinkers willing to inspire others and nurture a project from vision to distribution. These programs are designed to educate the next generation of filmmakers

and media entrepreneurs and produce artists, entrepreneurs, educators, engineers, and scientists who use digital technologies to create content in many venues (film, digital media, interactive entertainment, and a host of others), and who will develop and use digital technologies in new ways.

The Master of Fine Arts in Entrepreneurial Digital Cinema Track is designed for individuals who intend to work directly on the creation of new films and other media products and prepares graduates to teach in colleges and universities. This rigorous, three-year professional program is for visual artists and practitioners who demonstrate exceptional artistic and intellectual prowess and evidence of significant professional promise. The MFA degree produces graduates with mastery of storytelling while allowing for individualized specialization. Upon completion, each student will have produced a micro budget Digital Feature Film and prepared a marketing strategy for its distribution. The degree seeks to develop entrepreneurial, cinematographic storytellers of the highest quality by providing a select number of graduate students with the education and experience of creating strong visual narratives worthy of critical attention, professional recognition, and exhibition. This is a creative program in which students develop their own unique artistic voices and visions, the hallmarks of the personal film. We encourage a spirit of inquiry, creative exploration, and artistic leadership in the application of cinematic languages to new technologies.

This program requires that students take GEB 6115 Entrepreneurship, taught by the College of Business Administration; and they may take other electives. This gives students access to courses that will enhance the skills needed to finance and market their future projects.

The Master of Fine Arts in Visual Language and Interactive Media Track is a specialized program designed to train degree candidates to learn and implement the conceptual, design, and technical skills needed to create and communicate twenty-first century stories and messages. The principal emphasis of the program is on the creation of compelling content for new media for which production tools and processes are currently being invented. These students pursue a variety of goals addressing media convergence: increasing film, digital, and dynamic media skills, extending these skills into new areas, or in the case of educators and media professionals, expanding their expertise and

credentials for use in their professions. Students may be admitted on either a full-time or part-time basis.

The program is based on an apprenticeship model. Students explore new media under the guidance of a faculty member and collaborate with this faculty member in creative and research projects that foster a unique contribution characterized as innovative in approach. This degree program builds on undergraduate knowledge to build a mature set of conceptual, design, and technical skills needed to communicate stories and messages in a single discipline or in an interdisciplinary environment. An eighteen-hour thesis project is required. A typical thesis might involve designing content that is imparted through integrating traditional media with computer-based and computer-enhanced formats where the content is enriched by the use of novel interactive modalities and techniques. Work in the thesis will extend the capabilities of interfaces and measure the effectiveness of new ways of telling stories and conveying messages.

This Visual Language and Interactive Media MFA track is embedded in a rich environment of film and digital media work at UCF and in the surrounding community. The following are active areas of work at UCF:

- Digital media in instructional applications
- Experience design Interactive performance
- Sound and music design
- Cultural heritage preservation using new media

The School of Film and Digital Media faculty have extensive professional and academic experience in areas spanning film, video, multimedia, interactive and web design, human-centered interactive design, exhibition and theme park design, simulation and training, game development, broadcast design and motion graphics, animation, visual language, immersive design environments, database design, e-commerce, and educational technology and community development.

Students desiring admission to the Visual Language and Interactive Media Track should have an undergraduate degree in a media-related creative or technical field such as art, film, animation, theater, music, digital media, computer science, English, or education in the arts. Students will be admitted on the basis of a portfolio review or compelling plan of action for the creation of new knowledge in a profession or field of study by the addition of Digital Media. Desirable background skills for



this degree include computer and software literacy. Examples include mastery of Macintosh and PC workstations that are configured with a diverse range of hardware and software for production and editing of images and sound for stories and messages.

**CURRICULUM**

The Film and Digital Media MFA program requires a minimum of 60 credit hours including a thesis project. The Entrepreneurial Digital Cinema track requires 18 core requirement credit hours, 12 required credit hours, 6 restricted elective credit hours, 6 program elective credit hours, and 18 credit hours devoted to the thesis project. The Visual Language and Interactive Media track requires 12 core requirement credit hours, 9 required credit hours, 21 program elective credit hours, and 18 credit hours devoted to the thesis project.

Students must maintain a 3.0 GPA. Before undertaking the thesis project, a candidate must be accepted by a faculty adviser/mentor and meet with the thesis project advisory committee. A thesis project proposal must be presented and approved by the committee. The proposal should include a statement containing evidence of research, script, budget, production planning, and scheduling, as well as a marketing and distribution plan.

A thesis is required.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Film and Digital Media MFA        | Fall Priority | Fall | Spring | Summer |
|-----------------------------------|---------------|------|--------|--------|
| Domestic Applicants               |               |      |        |        |
| International Applicants          |               |      |        |        |
| International Transfer Applicants |               |      |        |        |

**CONTACT INFO**

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*Film and Digital Media MFA*

**Entrepreneurial  
 Digital Cinema MFA**

**TRACK DESCRIPTION**

The Master of Fine Arts in Film and Digital Media offers an Entrepreneurial Digital Cinema program designed to educate the next generation of filmmakers and media entrepreneurs and produce artists, entrepreneurs, educators, engineers, and scientists who use digital technologies to create content in many venues (film, digital media, interactive entertainment, and a host of others), and who will develop and use digital technologies in new ways.

**CURRICULUM**

**Total Required Hours for MFA—60  
 Credit Hours Minimum beyond the  
 Bachelor’s Degree.**

The MFA in Entrepreneurial Digital Cinema requires a minimum of 60 credit hours, including a thesis project with 18 credit hours of core requirement, 12 required credit hours, 6 restricted elective credit hours, 6 program elective credit hours, and 18 credit hours devoted to the thesis project.

**Required Courses—30 Credit Hours**

**Core Requirements—18 Credit Hours**

- FIL 5800 Research Methods in Film and Digital Media (3 credit hours)
- DIG 5810 Ways of Seeing: Cultural and Technological Perspectives (3 credit hours)
- FIL 5853 Cinematic Forms (3 credit hours)
- FIL 5165 Visual Storytelling (3 credit hours)

- FIL 5810 Transmedia Story Creation (3 credit hours)
- FIL 6614 Domestic and International Models of Distribution (3 credit hours)

### **Other Required Courses—12 Credit Hours Minimum**

Select a minimum of 12 hours from the following list or from relevant courses from other units with prior approval of the chair of the Department of Film.

- GEB 6115 Entrepreneurship (3 credit hours)
- FIL 6640 Microbudget Production Management (3 credit hours)
- FIL 6619 Guerilla Marketing (3 credit hours)
- DIG 6546 Previsualization and Concept Development (3 credit hours)

### **Electives—12 Credit Hours**

#### **Restricted Electives—6 Credit Hours Minimum**

A minimum of 6 credit hours from the following list or from relevant courses from other units with prior approval of the student's adviser.

- FIL 6454 Microbudget Production Design (3 credit hours)
- FIL 6475 Advanced Cinematography (3 credit hours)
- FIL 6596 Advanced Directing Workshop for Film and Digital Media (3 credit hours)
- FIL 6938 Special Topics: From Screenplay to Deal (3 credit hours)
- DIG 6487 Principles of Visual Language (3 credit hours)
- DIG 5565C Digital Asset Management Systems (3 credit hours)
- DIG 5366 Creating Interactive Characters (3 credit hours)

#### **Program Electives—6 Credit Hours Minimum**

A minimum of 6 credit hours of course work must be selected from either the School of Film and Digital Media or relevant courses from other units with prior approval from the chair of the Department of Film.

#### **Thesis Project—18 Credit Hours**

- FIL 6971 Thesis (18 credit hours)

Before undertaking the thesis project, candidates

must meet with the thesis advisory committee to submit and discuss the proposed project and obtain the committee's approval. The thesis requires intensive applied learning in order to complete a feature length project. Additionally, the thesis project has a strong research component both in the initial development phase and in the creation of the distribution and marketing plan for the project. The final stage of the curriculum serves as a bridge to the professional world and supports the entrepreneurial philosophy of the program. The thesis project must be reviewed by the faculty adviser/mentor throughout the production process and meet agreed upon criteria within a stated time frame. Once the thesis project is completed, candidates must have a public screening or exhibition of the work and meet with the thesis advisory committee for final approval and oral defense.

A thesis is required.

## **ADMISSIONS**

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a BA or BFA in film production or a BA or BFA (preferably in a related field) with significant, comparable film production experience, three letters of recommendation, an essay regarding goals, short biography or résumé detailing student's professional work, and a creative submission.

Applicants may be asked to attend an admissions interview. The graduate faculty determines final eligibility of applicants. In the case of restricted admission with deficiencies, the graduate committee decides the appropriate courses to be taken to compensate for the deficiencies. The letter of admission will specify the requirements that must be completed for regular admission.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- BA or BFA in film production or a BA or BFA (preferably in a related field) with significant, comparable film production experience.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation from professors or employers who can address the

applicant’s ability to undertake graduate-level course work

- A 500-word essay demonstrating the applicant’s breadth of knowledge, insight, curiosity, vision, voice, and ability to think critically. The applicant should respond to ONE of the following:
- Discuss the relationship between emerging technologies and creative expression.
- Discuss the continuing conflict between art and commerce and how its energy might be made to serve the creative process.
- Discuss the social, political, and cultural role and responsibilities of the artist/creator in a global society.
- Résumé or a 250-word biography detailing the applicant’s creative and entrepreneurial accomplishments as they relate to a professional and/or educational setting.
- A creative submission.

**Creative Submission**

**Entrepreneurial Digital Cinema Track applicants must submit:**

- A filmmaking reel no longer than 15 minutes, including complete shorts or excerpts from long format work. Each selection should be clearly marked with 1) the title, 2) the applicant’s creative role, 3) length of excerpt (if applicable), and 4) the date completed. If the selection is an excerpt from a longer work, the context of the longer work should be provided.
- An artist’s statement explaining why you think your vision for a feature film is well suited for the microbudget, digitally shot, paradigm
- A treatment of a proposed script plus a script sample of another work that you’ve written OR a draft of the script you want to direct as your thesis project for the MFA in Film and Digital Media at the University of Central Florida.
- Students must have a BA or BFA in film production OR a BA or BFA (preferably in a related field) with significant comparable film production experience.

Please send all creative submissions directly to the program: UCF Film Graduate Office, P.O. Box 163120, Orlando, FL 32816-3120.

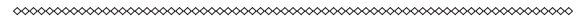
Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant’s abilities, past performance, recommendations, match of this program and faculty expertise to the applicant’s

career/academic goals, and the applicant’s potential for completing the degree.

| Entrepreneurial Digital Cinema MFA | Fall Priority | Fall   | Spring | Summer |
|------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                | Jan 15        | Mar 15 |        |        |
| International Applicants           | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants  | Jan 15        | Jan 15 |        |        |

**CONTACT INFO**

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 School of Film and Digital Media  
 Communication 121



*Film and Digital Media MFA*

**Visual Language and Interactive Media MFA**

**TRACK DESCRIPTION**

The Master of Fine Arts in Visual Language and Interactive Media program is designed to educate the next generation of filmmakers and media entrepreneurs and produce artists, entrepreneurs, educators, engineers, and scientists who use digital technologies to create content in many venues (film, digital media, interactive entertainment, and a host of others), and who will develop and use digital technologies in new ways.

**CURRICULUM**

**Total Required Hours for MFA—60 Credit Hours Minimum beyond the Bachelor’s Degree.**

Visual Language and Interactive Media MFA track

requires a minimum of 60 credit hours including a thesis project. The program requires 12 credit hours of core requirements, 9 required credit hours, 21 program elective credit hours, and 18 credit hours devoted to the thesis project.

The program builds on undergraduate knowledge to build a mature set of conceptual, design, and technical skills needed to communicate stories and messages in a single discipline or in an interdisciplinary environment. An eighteen-hour thesis project is required. A typical thesis might involve designing content that is imparted through integrating traditional media with computer-based and computer-enhanced formats where the content is enriched by the use of novel interactive modalities and techniques. Work in the thesis will extend the capabilities of interfaces and measure the effectiveness of new ways of telling stories and conveying messages.

During the first academic year, the student pursues core courses and electives recommended by the student's designated mentor/professor. The student also takes intensive short (possibly noncredit) courses in software and technical skills to complement the skills with which he/she enters the program. Throughout the second year, the student concentrates on course work in his or her chosen field, as well as thesis research. Students must be accepted by a faculty member for thesis supervision in order to carry out the required thesis. Students are encouraged to begin this process immediately upon entering the program by meeting faculty who work in areas of interest to the students.

During the third year, the student's focus is on completing his or her thesis work.

### **Required Courses—21 Credit Hours**

#### **Core Requirements—12 Credit Hours**

- DIG 5647 Science and Technology of Dynamic Media (3 credit hours)
- DIG 5810 Ways of Seeing: Cultural and Technological Perspectives (3 credit hours)
- FIL 5165 Visual Storytelling (3 credit hours)
- FIL 5810 Transmedia Story Creation (3 credit hours)

#### **Other Required Courses—9 Credit Hours**

- DIG 6165 Principles of Interaction (3 credit hours)
- DIG 6137 Information Architecture (3 credit hours)

- DIG 6487 Principles of Visual Language (3 credit hours)

### **Program Electives—21 Credit Hours**

All graduate-level Film or Digital Media courses can be used as electives, based on an adviser-approved program of study. In addition, other graduate courses may be used in place of those listed above, with permission of the adviser. These courses must be selected so as to ensure that at least one-half of the courses in the students program of study are taken at the 6000 level.

### **Thesis—18 Credit Hours**

- DIG 6971 Thesis (18 credit hours)

Each candidate for the Master of Fine Arts must submit a thesis proposal and preliminary bibliography on a topic selected in consultation with the adviser. The formal thesis is initiated by the preparation of a proposal that will meet both departmental and university requirements for the thesis. Prior to enrollment into thesis, the adviser, in consultation with the student, will designate a Thesis Committee to be further approved by the Dean of Arts and Humanities or their designee. This committee is chaired by the adviser and includes two or more additional faculty members from the School of Film and Digital Media.

The members of the student's thesis committee will judge the proposal as the preliminary step to beginning the thesis. This committee must approve the Thesis Proposal before academic credit can accrue.

A Visual Language MFA thesis project involves creating innovative applications of digital media to serve artistic, entertainment, commercial, and/or educational needs. The thesis consists of three parts: (1) the creative project (that utilizes digital media); (2) the production journal (documenting the process of developing the project and evaluating its effectiveness); and (3) dissemination (the work is presented in a juried exhibition, a refereed publication, or other venue that demonstrates development in connection with a professional partner).

The thesis is a formal written document. The introduction cites similar, related, and antecedent work; the body explains the purposes of the project, the method of its production, and any evaluation that was performed; and it concludes with plans for

future work. The thesis will also include an archival copy of the resulting creative product. Both the thesis and the creative product must be delivered in a digital form, acceptable by the UCF library according to its standards for digital dissertations and theses.

### Thesis Defense

In addition to a written thesis, the final step in completing the thesis requirement is an oral defense before the thesis committee. Candidates present their creative or research work and explain its creation in an oral defense. These presentations are made to the student's committee, in a public meeting that other faculty and students may attend.

A thesis is required.

## ADMISSIONS

In addition to general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, three letters of recommendation, an essay regarding goals, short biography or résumé detailing student's professional work, and a creative submission.

Applicants may be asked to attend an admissions interview. The graduate faculty determines final eligibility of applicants. In the case of restricted admission with deficiencies, the graduate committee decides the appropriate courses to be taken to compensate for the deficiencies. The letter of admission will specify the requirements that must be completed for regular admission.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- Three letters of recommendation from professors or employers who can address the applicant's ability to undertake graduate-level course work.
- A two page personal vision statement identifying the research area you intend to pursue and a compelling vision of how you intend to utilize your acquired knowledge and skills after completing the degree.
- A 500-word essay demonstrating the applicant's breadth of knowledge, insight,

curiosity, vision, voice, and ability to think critically. The applicant should respond to ONE of the following:

- Discuss the relationship between emerging technologies and creative expression.
- Discuss the continuing conflict between art and commerce and how its energy might be made to serve the creative process.
- Discuss the social, political, and cultural role and responsibilities of the artist/creator in a global society.
- Résumé or a 250-word biography detailing the applicant's creative and entrepreneurial accomplishments as they relate to a professional and/or educational setting.
- A creative submission (see below).

### Creative Submission

#### Visual Language and Interactive Media Track applicants must submit:

- A maximum of 10 total pieces in any applicable media that reflects your skill, creativity, and artistry. Acceptable media include, but are not limited to, video, websites, digital art, performance, and traditional art formats like sculpture and photography.
- Submissions must be made as stand-alone files in a digital format--DVD or CD.
- Submissions must be PC or MAC compatible (remember to test your file).
- Any subfolders on DVD or CD must be identified by piece number. For example, a folder called LastName\_Piece#3 may have six html files in it that are individually named by content.
- All other pieces without folders will be named as LastName\_Piece#1, LastName\_Piece#2.
- Image files and videos must be 400x600 resolution minimum.
- Do not use spaces in names, use underscores.
- No unfinished works.
- No collaborative works.
- No links to websites. Everything must be standalone on the CD or DVD.
- Scanned artwork must be 130-300dpi.
- All images must be properly oriented.
- CD or DVD must come in a protective case (no folded paper).
- Professional label CD or DVD with your name, email, and phone number.
- Your portfolio will not be returned to you.

Please send *your* CD or DVD along with a printed sheet with the following information:

- Your name and contact information.
- Numbered pieces with titles, year made, if for a class/what class, media used.
- Brief two sentence description of each.

Please address your portfolio directly to the following:

- Attention: Joe Mulley, Administrative Coordinator, MFA Portfolio Submission, UCF Digital Media Department, 12641 Research Parkway, Ste 500, Orlando, FL 32826-3121.

Please send the portfolio via certified mail to ensure receipt.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

| Visual Language and Interactive Media MFA | Fall Priority | Fall   | Spring | Summer |
|-------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                       | Jan 15        | Mar 15 |        |        |
| International Applicants                  | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants         | Jan 15        | Jan 15 |        |        |

## CONTACT INFO

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 Program Director  
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 FIEA 202D

# Art MFA, Studio Art and the Computer

## PROGRAM DESCRIPTION

The MFA in Studio Art and the Computer provides students an opportunity to inform and enhance their artistic practice using twenty-first century electronic media. The emphasis on electronic media is pliable enough to encompass the many ways in which technology intersects with contemporary art and design. Students in the program are invited to combine their backgrounds in traditional art- or computer-related disciplines within a conceptually driven, interdisciplinary environment. Courses provide exposure to time-based media, performance art, video art, sound works, kinetic sculpture, computer-based art, and art using the Internet in order to understand how these forms are driving twenty-first century artistic practice and informing our understanding of contemporary cultural identities.

Students entering this program should be interested in critical exploration of the international dialogue of contemporary art and should be intent upon developing innovative concepts within their own creative work. Full-time students who are interested in becoming practicing artists, college instructors, and industry innovators will flourish in this creative, integrative, and interdisciplinary studio environment.

## CURRICULUM

The Studio Art and the Computer MFA program is composed of a minimum of 70 credit hours, to be acquired in three years (six full-time semesters excluding summers). Degree credit is obtained in theory courses, studio art courses, electives, and in supervised research. All courses must be approved by the Graduate Program Director. The thesis consists of a body of artistic work accompanied by electronic (Internet) documentation and a culminating exhibition.

## Total Required Hours for MFA—70 Credit Hours Minimum beyond the Bachelor's Degree.

Graduate students must maintain a 3.0 or better GPA in all course work to complete the program.

Continuation in the MFA program requires a positive annual evaluation by the Program Director of the Department of Art and by the Graduate Committee of the Department of Art.

### **Required Courses—55 Credit Hours**

- ART 5910 Studio Concentration I (3 credit hours; should be taken twice for a total of 6 credit hours)
- ART 5280C Serial Content and Classic Form I (3 credit hours)
- ART 5284 Design Theory and Methods (3 credit hours)
- ART 5941 Graduate Practicum I (1 credit hour)
- ART 6911 Studio Concentration II (3 credit hours; should be taken twice for a total of 6 credit hours)
- ART 5695 Web Art I (3 credit hours)
- ART 5696 Art, Design and Human Interactions (3 credit hours)
- ART 6942 Graduate Practicum II (1 credit hour)
- ART 5694 Crosscultural Electronic Art and Design (3 credit hours)
- ART 6697 Web Art II (3 credit hours)
- ART 6281C Serial Content and Classic Form II (3 credit hours)
- ART 6930 Graduate Seminar (1 credit hour; taken twice)
- ART 6683C Time Arts (3 credit hours)
- ART 6743C Intermedia Sculpture (3 credit hours)
- ART 6687 Research Concentration I (3 credit hours)
- ART 5698 Concourse I (3 credit hours)
- ART 6689 Research Concentration II (3 credit hours)
- ART 6699 Concourse II (3 credit hours)

### **Electives—9 Credit Hours**

Electives can be taken from the Art Department or other discipline areas at the university, as appropriate, with approval of the program director. These courses must be selected so as to ensure that at least one-half of the courses in the student's program of study are taken at the 6000 level.

### **Thesis—6 Credit Hours**

- ART 6971 Thesis

The thesis consists of a body of artistic work accompanied by electronic (Internet) documentation and a culminating exhibition.

The final oral review before the supervisory thesis committee occurs at the end of the sixth semester. At the same time, the graduate student presents a thesis exhibition of selected works from the cumulative body of works produced during his/her three years of residency. In addition, the thesis requires an artist's statement and documentation. The thesis will contain research intentions, results, and the body of the creative works produced. Students are required to submit an electronic version of the thesis to the UCF College of Graduate Studies. After approval by the UCF College of Graduate Studies, the UCF Library will add it to its archives and make the electronic version of the thesis accessible on the web. The required thesis is the independent learning experience in the degree program.

### **Equipment Fee**

Students in the Studio Art and the Computer Program pay a \$90 equipment fee each semester that they are enrolled.

A thesis is required.

## **ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants to the MFA program normally must hold an earned BFA degree in Visual Art from an accredited institution with a 3.0 or higher GPA in the last 60 attempted semester hours of undergraduate study. Applicants who hold an earned BA, BS, or other baccalaureate degree in Visual Art or a related discipline with a 3.0 or higher GPA ranking from an accredited university may also apply.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.

- A portfolio of at least 20 original creative works on CD/DVD (to be submitted directly to the Department of Art),
- A letter of research intent that is at least a page describing the applicant's creative background, proposed research interests, and the relationship between this program and the applicant's future goals (to be submitted directly to the Department of Art). Research in the context of the MFA program primarily means the full-time creation of an original body of art work over the course of three years of residence.
- Résumé.
- Two letters of recommendation preferably from former visual art professors.
- A score of at least 230 (computer-based test or paper-based equivalent) on the Test of English as a Foreign Language (TOEFL) is required for applicants from countries where English is not the official language or applicants whose bachelor's degree is not from an accredited U.S. institution.

Meeting minimum UCF admission criteria does not guarantee admission to the MFA program. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree; strongly based on the review of the portfolio of original creative work and the letter of research intent.

| Art MFA, Studio Art and the Computer                               | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                | Jan 15        | Mar 15 |        |        |
| The Fall 2008 application deadline has been extended to July 15th. |               |        |        |        |
| International Applicants                                           | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants                                  | Jan 15        | Mar 1  |        |        |

## CONTACT INFO

Elizabeth Robinson MFA  
 Program Director  
 ebrobins@mail.ucf.edu  
 Telephone 407-823-308  
 Department of Art  
 Visual Arts Building 105A

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## Theatre MFA

- Acting MFA
- Design MFA
- Musical Theatre MFA
- Theatre for Young Audiences MFA

## PROGRAM DESCRIPTION

The Theatre MFA program with tracks in Acting, Design, Musical Theatre, and Theatre for Young Audiences is designed for students who demonstrate the artistic and intellectual capacity and evidence of professional promise to pursue careers in professional and academic theatre.

The program is a highly selective, rigorous, three-year professional training program emphasizing both theatre theory and practice. The MFA degree is rooted in the belief that classroom study and practical experience in the theatre are of equal and complementary value. The production program, therefore, is integrated into the curriculum because it is the principal means available for the coordination of all the elements of dramatic art. We seek to pursue all possible ways to use the production program effectively for the purpose of teaching and training.

Students, in addition to becoming highly trained theatre practitioners, must also demonstrate the ability to understand the conceptual basis of their art and to be able to articulate that understanding to others. Toward this end, the department will recruit and develop graduate students who can serve, along with faculty and staff, as role models for undergraduate students whose BFA programs of study are integrally connected and dependent.

## CURRICULUM

The program consists of 61 credit hours, comprising a core of 6 credit hours, 6 hours of thesis, and a professional internship which may vary from 6 to



12 hours. Four tracks are available in the program: acting, directing, musical theatre and theatre for young audiences.

**Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor’s Degree.**

The following courses constitute the MFA Graduate Core Curriculum.

**Required Courses—6 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

**Specialization Courses—37 to 43 Credit Hours**

Specialization courses are offered for each track.

**Internship—6 to 12 Credit Hours**

- THE 6948 Professional Internship (6-12 credit hours)

**Thesis—6 Credit Hours**

- THE 6971 Thesis (6 credit hours)
- A thesis is required.

**ADMISSIONS**

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Theatre MFA                       | Fall Priority | Fall | Spring | Summer |
|-----------------------------------|---------------|------|--------|--------|
| Domestic Applicants               |               |      |        |        |
| International Applicants          |               |      |        |        |
| International Transfer Applicants |               |      |        |        |

**CONTACT INFO**

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*Theatre MFA*

**Acting MFA**

**TRACK DESCRIPTION**

The Master in Fine Arts in Acting program is designed for students who demonstrate the artistic and intellectual capacity and evidence of professional promise to pursue careers in professional and academic theatre.

**CURRICULUM**

**Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor’s Degree.**

The MFA degree requires a minimum of 61 credits to be completed in the Acting program. Students earning the degree are expected to demonstrate proficiency in one of these areas.

The electives can be chosen (with instructor approval) from existing courses in the MFA tracks in Acting, Musical Theatre, Design, and Theatre for Young Audiences. Because allowed electives are both two- and three-credit-hour courses, the course of study shows a sliding number of credits for electives. Consequently, although the 61 credit hours are required, a student may graduate with as many as 65 credit hours.

Students must maintain a minimum “B” (3.0) overall Theatre grade point average to continue in the major. Theatre courses with grades of less than “C” will not be counted toward degree requirements. All Acting program students are required to audition for all fall and spring productions and must accept the roles assigned. A student’s continuation in the program is contingent upon a positive annual evaluation. Students must

successfully complete an internship, present a written journal documenting their experience and a thesis project. The thesis proposal must be approved in advance.

Of the 61 hours required for the Acting program, the following courses constitute the MFA Graduate Core Curriculum.

### Required Courses—6 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

### Specialization Courses—41 Credit Hours

Shown below in the yearly schedule.

### Internship—8 Credit Hours Minimum

- THE 6948 Professional Internship (6-12 credit hours)

### Thesis—6 Credit Hours

- THE 6971 Thesis (6 credit hours)

## Course Schedules

### YEAR 1

#### Fall—10 Credit Hours

- TPP 5156C Acting Studio I (3 credit hours)
- TPP 5515 Movement Studio I (2 credit hours)
- TPP 5715C Stage Voice I (2 credit hours)
- THE 5910 Research Methods in Theatre (3 credit hours)

#### Spring—10 Credit Hours

- TPP 5157C Acting Studio II (3 credit hours)
- TPP 5516C Movement Studio II (2 credit hours)
- TPP 5716C Stage Voice II (2 credit hours)
- THE 5307 Contemporary Theatre Practice (3 credit hours)

### YEAR 2

#### Fall—10 Credit Hours

- TPP 6146 Acting Studio III (3 credit hours)
- TPP 6517 Movement Studio III (2 credit hours)
- TPP 6717C Stage Voice III (2 credit hours)
- THE 6507 Dramatic Theory and Criticism (3 credit hours)

#### Spring—11 Credit Hours

- TPP 6518C Movement Studio IV (2 credit hours)
- TPP 6718C Stage Voice IV (2 credit hours)
- TPP 6267 Acting Studio V: TV/Film (3 credit hours)
- THE 5278C Musical Theatre Lab (1 credit hour)
- THE 5205 American Theatre (3 credit hours)

### YEAR 3

#### Fall—10 Credit Hours

- THE 6948 Professional Internship (4 credit hours)
- THE 6971 Thesis (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credits)

#### Spring—10 Credit Hours

- THE 6948 Professional Internship (4 credit hours)
- THE 6971 Thesis (3 credit hours)
- TPP 6186C Advanced Scene Study or Elective (3 credit hours)

### Electives

- THE 6908 Independent Study (1 credit hour)
- TPP 6686 Playwriting for Young Audiences (3 credit hours)
- TPP 5246C Circus Arts (2 credit hours)
- TPP 5885C Puppetry (2 credit hours)
- TPP 5125C Improvisation Studio (2 credit hours)
- TPP 5248C Storytelling as a Theatrical Art Form (2 credit hours)
- TPP 6406C Theatre Management (3 credit hours)

## Transfer and Residency

Students who do not hold a master's degree can usually transfer up to nine semester hours into this program. Ordinarily, students holding completed MS or MA degrees will not be admitted into the MFA program. Each case will be evaluated on an individual basis. Final acceptance and number of credits to be transferred will be determined by a graduate faculty committee. A minimum of 51 credits must be taken at the University of Central Florida. A student without an earned master's degree must complete a residency requirement of at least five semesters with at least four of them being full-time, consecutive semesters. Summer

session may be counted toward the four consecutive semesters.

### **Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.**

The following courses constitute the MFA Graduate Core Curriculum.

#### **Required Courses—6 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

#### **Specialization Courses—37 to 43 Credit Hours**

Specialization courses are offered for each track.

#### **Internship—6 to 12 Credit Hours**

- THE 6948 Professional Internship (6-12 credit hours)

#### **Thesis—6 Credit Hours**

- THE 6971 Thesis (6 credit hours)

## **ADMISSIONS**

In addition to meeting general admission requirements, applicants must submit an official, competitive GRE score taken within the last five years, previous degree in Theatre or equivalent, goal statement, résumé, an 8 X 10 headshot, three letters of recommendation, interview, and an audition.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- A 3.0 Theatre GPA.
- Official, competitive GRE score taken within the last five years.
- Essay stating applicant's academic and professional goals.
- Résumé.
- An 8 X 10 headshot.
- Three letters of recommendation.
- An audition.
- Interview.
- Complete the general entrance and area specific undergraduate prerequisites or their equivalents.

### **Auditions, Portfolio, and Interview**

#### **Requirements:**

- **MFA Acting** applicants are required to participate in an interview and perform two contrasting monologues.

For more details about these requirements, contact the Theatre Department at [www.theatre.ucf.edu](http://www.theatre.ucf.edu).

#### **General Entrance and Area Specific**

**Prerequisites**—Students applying for entrance into the MFA Programs must have successfully completed the following undergraduate courses or their equivalent:

- **Acting**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stage Voice I, Stage Voice II, Stage Movement I, Stage Movement II, Acting I, Acting II, Acting III.
- **Musical Theatre**—Fundamentals of Music, Acting I, Acting II, Musical Theatre Voice I, Musical Theatre Voice II are all recommended.
- **Design**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stagecraft I, Stagecraft II, Theatre Drafting, 2D CADD, Scene Design I, Lighting Design I, Costume Construction, Costume Design I.
- **Theatre for Young Audiences**—experience in some area of Theatre for Young Audiences;

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

No part-time students will be admitted into the MFA program.

| <b>Acting MFA</b>                 | <b>Fall Priority</b> | <b>Fall</b> | <b>Spring</b> | <b>Summer</b> |
|-----------------------------------|----------------------|-------------|---------------|---------------|
| Domestic Applicants               | Jan 15               | Mar 15      |               |               |
| International Applicants          | Jan 15               | Jan 15      |               |               |
| International Transfer Applicants | Jan 15               | Mar 1       |               |               |

**CONTACT INFO**

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 Department of Theatre  
 UTC 102

.....  
*Theatre MFA*

**Design MFA****TRACK DESCRIPTION**

The Master of Fine Arts in Design program is designed for students who demonstrate the artistic and intellectual capacity and evidence of professional promise to pursue careers in professional and academic theatre.

**CURRICULUM****Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.**

The MFA degree requires a minimum of 61 credits to be completed in the Design program. Students earning the degree are expected to demonstrate proficiency in one of these areas.

The electives can be chosen (with instructor approval) from existing courses in the MFA tracks in Acting, Musical Theatre, Design, and Theatre for Young Audiences. Because allowed electives are both two- and three-credit-hour courses, the course of study shows a sliding number of credits for electives. Consequently, although the 61 credit hours are required, a student may graduate with as many as 65 credit hours.

**Required Courses—6 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

**Specialization Courses—43 Credit Hours**

Listed below in the Course Schedule.

**Internship—6-9 Credit Hours**

- THE 6948 Professional Internship (6-9 credit hours)

**Thesis—3-6 Credit Hours Minimum**

- THE 6971 Thesis (3-6 credit hours)

Students must maintain a minimum “B” (3.0) overall Theatre grade point average to continue in the major. Theatre courses with grades of less than “C” will not be counted toward degree requirements. A student’s continuation in the program is contingent upon a positive annual evaluation. Student must successfully complete an internship, present a written journal documenting their experience and a thesis project. The thesis proposal must be approved in advance.

**Course Schedule****YEAR 1****Fall—10 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 5288 Period Costumes, Architecture, and Decor I (3 credit hours)
- TPA 5095 Rendering for Theatre I (1 credit hour)
- TPA 5946C Design Practicum I (1 credit hour)
- TPA 5085C Design Seminar for Theatre (2 credit hours)

**Spring—9 Credit Hours**

- TPA 5175 Rendering for Theatre II (1 credit hour)
- THE 5289 Period Costumes, Architecture, and Decor II (3 credit hours)
- TPA 5062C Scene Design Studio or TPA 5042C Costume Design Studio (3 credit hours)
- Elective (2 credit hours)

**YEAR 2****Fall—12 Credit Hours**

- TPA 6029 Lighting Design Studio or TPA 6106C Sound Design Studio (3 credit hours)
- Elective (3 credit hours)
- TPA 6096C Advanced Rendering and Modeling for Theatre I (3 credit hours)

- History elective (3 credit hours)

### Spring—12 Credit Hours

- TPA 6097C Advanced Rendering and Modeling for Theatre II (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)
- TPA 6087C Advanced Design Seminar for Theatre (3 credit hours)
- Elective (3 credit hours)

### YEAR 3

Internship in local area (for example, Orlando Rep, Orlando Shakespeare, Seaside Music Theatre or similar)

### Fall—9 Credit Hours

- THE 6948 Professional Internship (3 credit hours)
- THE 6971 Thesis (3 credit hours)
- THE 6908 Directed Study (3 credit hours)

### Spring—9 Credit Hours

- THE 6948 Professional Internship (3 credit hours)
- THE 6971 Thesis (3 credit hours)
- THE 6908 Directed Study (3 credit hours)

OR

### YEAR 3

Internship at remote location for one semester (for example, Assistant Designer at Actor's Theatre of Louisville or similar)

### Fall—9 Credit Hours

- THE 6948 Professional Internship (6 credit hours)
- THE 6971 Thesis (3 credit hours)

### Spring—9 Credit Hours

- THE 6948 Professional Internship (3 credit hours)
- THE 6971 Thesis (6 credit hours)

### Electives

- TPA 5258C AutoCad-2D for Theatre (3 credit hours)
- TPA 5299C AutoCad-3D for Theatre (3 credit hours)
- TPA 6908 Directed Independent Study - Scene Painting
- TPA 6908 Directed Independent Study - Patterning

- TPA 6908 Directed Independent Study - Cutting and Draping
- TPP 6216C Theatre for Young Audiences Tour (3 credit hours)
- TPA 6209C Theatre Crafts (3 credit hours)
- TPA 5949C Design Practicum II (1 credit hour)
- TPA 6947 Design Practicum III (1 credit hour)
- TPA 6948L Design Practicum IV (1 credit hour)

### History Electives

- THE 6507 Dramatic Theory and Criticism (3 credit hours)
- THE 5205 American Theatre (3 credit hours)
- THE 5307 Contemporary Theatre Practice (3 credit hours)

### Transfer and Residency

Students who do not hold a master's degree can usually transfer up to nine semester hours into this program. Ordinarily, students holding completed MS or MA degrees will not be admitted into the MFA program. Each case will be evaluated on an individual basis. Final acceptance and number of credits to be transferred will be determined by a graduate faculty committee. A minimum of 51 credits must be taken at the University of Central Florida. A student without an earned master's degree must complete a residency requirement of at least five semesters with at least four of them being full-time, consecutive semesters. Summer session may be counted toward the four consecutive semesters.

### Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.

The following courses constitute the MFA Graduate Core Curriculum.

### Required Courses—6 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

### Specialization Courses—37 to 43 Credit Hours

Specialization courses are offered for each track.

**Internship—6 to 12 Credit Hours**

- THE 6948 Professional Internship (6-12 credit hours)

**Thesis—6 Credit Hours**

- THE 6971 Thesis (6 credit hours)

**ADMISSIONS**

In addition to meeting general admission requirements, applicants must submit a competitive GRE score, taken within the last five years, previous degree in Theatre or equivalent, goal statement, résumé, three letters of recommendation, a portfolio, and an interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Undergraduate degree in Theatre or equivalent.
- A 3.0 Theatre GPA.
- Official, competitive GRE score taken within the last five years.
- Essay stating applicant's academic and professional goals.
- Résumé.
- Three letters of recommendation.
- Portfolio.
- Interview.
- Complete the general entrance and area specific undergraduate prerequisites or their equivalents.

**Auditions, Portfolio, and Interview****Requirements:**

- **MFA Design** applicants are required to participate in an interview and present a portfolio for review. The portfolio should contain samples of the student's best work in scenic, costume, and lighting design. Three-dimensional pieces can be submitted as digital images.

For more details about these requirements, contact the Theatre Department at [www.theatre.ucf.edu](http://www.theatre.ucf.edu).

**General Entrance and Area Specific**

**Prerequisites**—Students applying for entrance into the MFA Programs must have successfully completed the following undergraduate courses or their equivalent:

- **Acting**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stage Voice I, Stage Voice

II, Stage Movement I, Stage Movement II, Acting I, Acting II, Acting III.

- **Musical Theatre**—Fundamentals of Music, Acting I, Acting II, Musical Theatre Voice I, Musical Theatre Voice II are all recommended.
- **Design**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stagecraft I, Stagecraft II, Theatre Drafting, 2D CADD, Scene Design I, Lighting Design I, Costume Construction, Costume Design I.
- **Theatre for Young Audiences**—experience in some area of Theatre for Young Audiences;

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

No part-time students will be admitted into the MFA program.

| Design MFA                        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 15 |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

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UCT 130

*Theatre MFA***Musical Theatre MFA****TRACK DESCRIPTION**

The Master of Fine Arts in Musical Theatre program is designed for students who demonstrate the artistic and intellectual capacity and evidence of professional promise to pursue careers in professional and academic theatre.

**CURRICULUM****Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.**

The MFA degree requires a minimum of 61 credits to be completed in the Musical Theatre program. Students earning the degree are expected to demonstrate proficiency in one of these areas.

The electives can be chosen (with instructor approval) from existing courses in the MFA tracks in Acting, Musical Theatre, Design, and Theatre for Young Audiences. Because allowed electives are both two- and three-credit-hour courses, the course of study shows a sliding number of credits for electives. Consequently, although the 61 credit hours are required, a student may graduate with as many as 65 credit hours.

**Required Courses—6 Credit Hours**

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

**Specialization Courses—41 Credit Hours**

Listed below in Course Schedule.

**Internship—8 Credit Hours**

- THE 6948 Professional Internship (8 credit hours)

**Thesis—6 Credit Hours**

- THE 6971 Thesis (6 credit hours)

Students must maintain a minimum “B” (3.0) overall Theatre grade point average to continue in the major. Theatre courses with grades of

less than “C” will not be counted toward degree requirements. All Musical Theatre Track students are required to audition for all fall and spring productions and must accept the roles assigned. A student’s continuation in the program is contingent upon a positive annual evaluation. Student must successfully complete an internship, present a written journal documenting their experience and a thesis project. The thesis proposal must be approved in advance.

**Course Schedule****YEAR 1****Fall—12 Credit Hours**

- TPP 5554 Musical Theatre Dance I (2 credit hours)
- TPP 5754 Musical Theatre Voice I (2 credit hours)
- TPP 5156C Acting Studio I (3 credit hours)
- TPP 5715C Stage Voice I (2 credit hours)
- THE 5910 Research Methods in Theatre (3 credit hours)

**Spring—12 Credit Hours**

- TPP 5555C Musical Theatre Dance II (2 credit hours)
- TPP 6755 Musical Theatre Voice II (2 credit hours)
- TPP 5157C Acting Studio II (3 credit hours)
- TPP 5716C Stage Voice II (2 credit hours)
- THE 5248 Musical Theatre in History (3 credit hours)

**YEAR 2****Fall—11 Credit Hours**

- TPP 6556C Musical Theatre Dance III (2 credit hours)
- TPP 6756 Musical Theatre Voice III (2 credit hours)
- TPP 5273 Musical Theatre Acting I (2 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)
- Musical Theatre elective (2 credit hours)

**Spring—12 Credit Hours**

- TPP 6557C Musical Theatre Dance IV (2 credit hours)
- TPP 6757 Musical Theatre Voice IV (2 credit hours)
- TPP 6274 Musical Theatre Acting II (2 credit hours)

- THE 6344 Musical Theatre Directing (3 credit hours)
- THE 6308 Script and Score Analysis (3 credit hours)

### YEAR 3

#### Fall—9 Credit Hours

- THE 6971 Thesis (1 credit hour)
- THE 6948 Professional Internship (8 credit hours)

#### Spring—5 Credit Hours

- THE 6971 Thesis (5 credit hours)

### Transfer and Residency

Students who do not hold a master's degree can usually transfer up to nine semester hours into this program. Ordinarily, students holding completed MS or MA degrees will not be admitted into the MFA program. Each case will be evaluated on an individual basis. Final acceptance and number of credits to be transferred will be determined by a graduate faculty committee. A minimum of 51 credits must be taken at the University of Central Florida. A student without an earned master's degree must complete a residency requirement of at least five semesters with at least four of them being full-time, consecutive semesters. Summer session may be counted toward the four consecutive semesters.

### Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.

The following courses constitute the MFA Graduate Core Curriculum.

#### Required Courses—6 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

### Specialization Courses—37 to 43 Credit Hours

Specialization courses are offered for each track.

#### Internship—6 to 12 Credit Hours

- THE 6948 Professional Internship (6-12 credit hours)

### Thesis—6 Credit Hours

- THE 6971 Thesis (6 credit hours)

## ADMISSIONS

In addition to meeting general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, previous degree in Theatre or equivalent, goal statement, résumé, an 8 X 10 headshot, three letters of recommendation, audition, and interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Undergraduate degree in Theatre or equivalent.
- A 3.0 Theatre GPA.
- Official, competitive GRE score taken within the last five years.
- Essay stating applicant's academic and professional goals.
- Résumé.
- An 8 X 10 headshot.
- Three letters of recommendation.
- Audition.
- Interview.
- Complete the general entrance and area specific undergraduate prerequisites or their equivalents.

### Auditions, Portfolio, and Interview Requirements:

- **MFA Musical Theatre** applicants are required to participate in an interview, complete a dance audition, as well as to perform two contrasting songs and one monologue. The total audition (not including the interview and dance audition) may not exceed three minutes.

For more details about these requirements, contact the Theatre Department at [www.theatre.ucf.edu](http://www.theatre.ucf.edu).

### General Entrance and Area Specific

**Prerequisites**—Students applying for entrance into the MFA Programs must have successfully completed the following undergraduate courses or their equivalent:

- **Acting**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stage Voice I, Stage Voice II, Stage Movement I, Stage Movement II, Acting I, Acting II, Acting III.



- **Musical Theatre**—Fundamentals of Music, Acting I, Acting II, Musical Theatre Voice I, Musical Theatre Voice II are all recommended.
- **Design**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stagecraft I, Stagecraft II, Theatre Drafting, 2D CADD, Scene Design I, Lighting Design I, Costume Construction, Costume Design I.
- **Theatre for Young Audiences**—experience in some area of Theatre for Young Audiences;

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree.

No part-time students will be admitted into the MFA program.

| Musical Theatre MFA               | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 15 |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

## CONTACT INFO

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 UTC 143

## Theatre MFA

# Theatre for Young Audiences MFA

## TRACK DESCRIPTION

The Master of Fine Arts in Theatre for Young Audiences program is designed for students who demonstrate the artistic and intellectual capacity and evidence of professional promise to pursue careers in professional and academic theatre.

## CURRICULUM

### Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.

The MFA degree requires a minimum of 61 credits to be completed in the Theatre for Young Audiences program. Students earning the degree are expected to demonstrate proficiency in one of these areas.

The electives can be chosen (with instructor approval) from existing courses in the MFA tracks in Acting, Musical Theatre, Design, and Theatre for Young Audiences. Because allowed electives are both two- and three-credit-hour courses, the course of study shows a sliding number of credits for electives. Consequently, although the 61 credit hours are required, a student may graduate with as many as 65 credit hours.

### Required Courses—6 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

### Specialization Courses—37-43 Credit Hours

Listed in Course Schedule.

### Internship—6-12 Credit Hours

- THE 6948 Professional Internship (6-12 credit hours)

### Thesis—6 Credit Hours

- THE 6971 Thesis (6 credit hours)

Students must maintain a minimum “B” (3.0) overall Theatre grade point average to continue in the major. Theatre courses with grades of less than “C” will not be counted toward degree requirements. A student’s continuation in the program is contingent upon a positive annual evaluation. Student must successfully complete an internship, present a written journal documenting their experience and a thesis project. The thesis proposal must be approved in advance.

**Students entering in Year A (Fall 2008, 2010, 2012...) will take the following classes in the following order:**

## Course Schedule

### YEAR 1

#### Fall A—12 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6756 Methods of Teaching Drama (3 credit hours)
- THE 5385 Dramatic Literature for Children (3 credit hours)
- THE 5081 Design Concepts for Youth Theatre (3 credit hours)

#### Spring A—10 Credit Hours

- TPP 5386 Directing for Young Audiences (3 credit hours)
- THE 6726 Advanced TYA Seminar (3 credit hours)
- TPP 5289C Acting Methodologies (2 credit hours)
- Elective (2 credit hours)

### YEAR 2

#### Fall—11 Credit Hours

- THE 6086 Careers in Professional Theatre (3 credit hours)
- THE 6507 Dramatic Theory and Criticism (3 credit hours)
- Elective (2 credit hours)
- Elective (3 credit hours)

#### Spring—10 Credit Hours

- TPP 6216C Theatre for Young Audiences Tour (3 credit hours)
- TPP 6247 Theatre for Social Change (3 credit hours)
- Elective (2 credit hours)
- Elective (2 credit hours)

### YEAR 3

#### Fall—9 Credit Hours

- THE 6946 Internship (6 credit hours)\*
- THE 6971 Thesis (3 credit hours)

#### Spring—9 Credit Hours

- THE 6946 Internship (6 credit hours)
- THE 6971 Thesis (3 credit hours)

**Students Entering in Year B (Fall 2009, 2011, 2013...) will take the following classes in the following order:**

### YEAR 1

#### Fall B—11 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6756 Methods of Teaching Drama (3 credit hours)
- Elective (2 credit hours)
- Elective (3 credit hours)

#### Spring B—10 Credit Hours

- TPP 6247 Theatre for Social Change (3 credit hours)
- TPP 6216C Theatre for Young Audiences Tour (3 credit hours)
- Elective (2 credit hours)
- Elective (2 credit hours)

### YEAR 2

#### Fall—12 Credit Hours

- THE 6086 Careers in Professional Theatre (3 credit hours)
- THE 6507 Dramatic Theory and Criticism (3 credit hours)
- THE 5385 Dramatic Literature for Children (3 credit hours)
- TPA 5081 Design Concepts for Youth Theatre (3 credit hours)

#### Spring—10 Credit Hours

- TPP 5386 Directing for Young Audiences (3 credit hours)
- THE 6726 Advanced TYA Seminar (3 credit hours)
- TPP 5289C Acting Methodologies (2 credit hours)
- Elective (2 credit hours)

## YEAR 3

### Fall—9 Credit Hours

- THE 6946 Internship\* (6 credit hours)
- THE 6971 Thesis (3 credit hours)

\* Internship must be a minimum of 6 credits with the option of taking up to 12 credits.

### Spring—9 Credit Hours

- THE 6946 Internship (6 credit hours)
- THE 6971 Thesis (3 credit hours)

### Electives

- TPP 6686 Playwriting for Young Audiences (3 credit hours)
- TPP 5246C Circus Arts (2 credit hours)
- TPA 5885C Puppetry (2 credit hours)
- TPP 5125C Improvisation Studio (2 credit hours)
- TPP 5248C Storytelling as a Theatrical Art Form (2 credit hours)
- TPP 6406C Theatre Management (3 credit hours)
- TPP 5935C Contemporary Practices in Youth Theatre (2 credits)

### Examination

A comprehensive departmental theatre exam is administered to the MFA students in the Theatre for Young Audiences Track at the end of their course work. The department allows two attempts at a comprehensive exam.

### Transfer and Residency

Students who do not hold a master's degree can usually transfer up to nine semester hours into this program. Ordinarily, students holding completed MS or MA degrees will not be admitted into the MFA program. Each case will be evaluated on an individual basis. Final acceptance and number of credits to be transferred will be determined by a graduate faculty committee. A minimum of 51 credits must be taken at the University of Central Florida. A student without an earned master's degree must complete a residency requirement of at least five semesters with at least four of them being full-time, consecutive semesters. Summer session may be counted toward the four consecutive semesters.

## Total Required Hours for MFA—61 Credit Hours Minimum beyond the Bachelor's Degree.

The following courses constitute the MFA Graduate Core Curriculum.

### Required Courses—6 Credit Hours

- THE 5910 Research Methods in Theatre (3 credit hours)
- THE 6086 Careers in Professional Theatre (3 credit hours)

### Specialization Courses—37 to 43 Credit Hours

Specialization courses are offered for each track.

### Internship—6 to 12 Credit Hours

- THE 6948 Professional Internship (6-12 credit hours)

### Thesis—6 Credit Hours

- THE 6971 Thesis (6 credit hours)

## ADMISSIONS

In addition to meeting general admission requirements, applicants must submit an official, competitive GRE score taken within the last five years, previous degree in Theatre or equivalent, goal statement, résumé, an 8 X 10 headshot, three letters of recommendation, audition, and interview.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Undergraduate degree in Theatre or equivalent.
- A 3.0 Theatre GPA.
- Official, competitive GRE score taken within the last five years.
- Essay stating applicant's academic and professional goals.
- Résumé.
- An 8 X 10 headshot.
- Three letters of recommendation.
- An audition.
- Interview.
- Complete the general entrance and area specific undergraduate prerequisites or their equivalents.

**Auditions, Portfolio, and Interview****Requirements:**

- **MFA Theatre for Young Audiences** applicants are required to participate in an onsite interview and students must either audition (perform two contrasting monologues, not to exceed three minutes total) or give a creative presentation.

For more details about these requirements, contact the Theatre Department at [www.theatre.ucf.edu](http://www.theatre.ucf.edu).

**General Entrance and Area Specific**

**Prerequisites**—Students applying for entrance into the MFA Programs must have successfully completed the following undergraduate courses or their equivalent:

- **Acting**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stage Voice I, Stage Voice II, Stage Movement I, Stage Movement II, Acting I, Acting II, Acting III.
- **Musical Theatre**—Fundamentals of Music, Acting I, Acting II, Musical Theatre Voice I, Musical Theatre Voice II are all recommended.
- **Design**—Script Analysis or Play Analysis, Directing I, Theatre History I and II, Dramatic Literature I and II, Stagecraft I, Stagecraft II, Theatre Drafting, 2D CADD, Scene Design I, Lighting Design I, Costume Construction, Costume Design I.
- **Theatre for Young Audiences**—experience in some area of Theatre for Young Audiences;

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the degree. No part-time students will be admitted into the MFA program.

| Theatre for Young Audiences MFA   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 15 |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

**CONTACT INFO**

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 Department of Theatre  
 UTC 180

**Education EdS**

- School Counseling EdS

**PROGRAM DESCRIPTION**

The Specialist in Education program is designed for practicing educators who wish to gain expertise in a subfield within education, and offers a track in School Counseling. The program builds that expertise from a core of courses curriculum, instruction, learning theory, and research, and then allow students to work with an adviser to develop a program of study to gain expertise. The program is intended for educators who are interested in teaching in a college, university, or community college, or leading curriculum and instructional improvement in a school or school district, higher education, or military or business settings.

The specialist program provides a foundation of advanced graduate course work and the ability to tailor a specialized focus on an education subfield supported within the College of Education.

**CURRICULUM**

The Education Specialist in Education degree requires a minimum of 36 credit hours beyond the master's degree. Curriculum and instruction majors must successfully complete one 3-hour examination in curriculum and instruction and one 3-hour examination in their area of specialization. The Education Specialist program is designed for educators who wish to gain expertise in a subfield of education. Specializations include, but are not limited to, Curriculum and Instruction Leadership, Applied Learning and Instruction, Reading Education, Social Context of Schooling, or Community College Education.

## **Total Hours Required for EdS—36 Credit Hours Minimum beyond the Master's Degree.**

-based research study. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research-based best practices in the classroom).

### **Core Courses—9 Credit Hours**

- EDF 7232 Analysis of Learning Theories in Instruction (3 credit hours)
- EDG 7221 Advanced Curriculum Theory (3 credit hours)
- EDG 7325 Models of Teaching and Instructional Theory (3 credit hours)

#### **Notes about core courses:**

- EDF 6259 is a prerequisite to EDF 7232.
- EDF 6223 is a prerequisite for both EDF 7221 and EDG 7325.
- All core courses and the core examination must be completed in the first six semesters of enrollment in the specialist program.

### **Specialization Courses—21 Credit Hours**

Students select an area of specialization in consultation with their adviser. Specializations may include, but are not limited to, Curriculum and Instruction Leadership, Applied Learning and Instruction, Reading Education, Social Context of Schooling, or Community College Education.

#### **Curriculum and Instruction Leadership**

- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6XXX Teacher Leadership for Educational Equity and Social Justice (3 credit hours)
- EDG 6224 Curriculum Policy Analysis (3 credit hours)

- EDG 6XXX Seminar in Teacher Leadership (3 credit hours)
- ESE 6235 Curriculum Design (3 credit hours)
- ESE 6416 Curriculum Evaluation (3 credit hours)

#### **Applied Learning and Instruction**

- EDP 6213 Applied Learning and Instruction Seminar I (3 credit hours)
- EDP 6217 Applied Learning and Instruction Seminar II (3 credit hours)
- EDF 6216 Motivation in Learning and Performance (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6141 Human Intelligence (3 credit hours)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)

#### **Reading Education**

- RED 5147 Developmental Reading (3 credit hours)
- RED 5514 Classroom Diagnosis and Development of Reading Proficiencies (3 credit hours)
- RED 6116 Trends in Reading Education (3 credit hours)
- RED 6845 Advanced Evaluation and Instruction in Reading (3 credit hours)
- RED 6846 Reading Practicum (6 credit hours)
- Plus an additional 3 credit hour course approved by your adviser.

#### **Social Context of Schooling**

- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6725 Critical Issues in Urban Education (3 credit hours)
- EDF 6809 Introduction to Comparative and International Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EDF 6936 Seminar in Improving Teaching and Learning in Urban Settings (3 credit hours)
- EDF 6XXX Teacher Leadership for Educational Equity and Social Justice (3 credit hours)

### Community College Education

- EDH 6053 The Community College in America (3 credit hours)
- EDH 6081 Contemporary Problems in Community Colleges (3 credit hours)
- EDH 6204 Community College Organization, Administration, and Supervision (3 credit hours)
- EDH 6215 Community College Curriculum (3 credit hours)
- EDH 6305 Teaching and Learning in the Community College (3 credit hours)
- IDS 6504 Adult Learning (3 credit hours)
- Plus an additional 3 credit hour course approved by your adviser.

### Research, Statistics, Measurement or Evaluation—6 Credit Hours Minimum

Students will select, in consultation with their adviser, 6 credit hours of Research, Statistics, Measurement or Evaluation courses to complement their specialization. Courses that may be used to fulfill this requirement include, but are not limited to:

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6467 Mixed Methods for Evaluation in Educational Settings (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- EDF 7473 Ethnography in Educational Settings (3 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDG 6285 Evaluation of School Programs (3 credit hours)

### Examinations

Curriculum and instruction students must successfully complete one 3-hour examination in curriculum and instruction and one 3-hour examination in their area of specialization.

Satisfactory completion of a portfolio is required as the independent and culminating experience in this program. The portfolio will document the

reflections and learning experiences and projects that the student has engaged in throughout the curriculum and particularly highlight the learning that has taken place in producing the research study and final report.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years
- A goal statement detailing the specific subfield of education in which the applicant intends on specializing and explains how the degree will contribute to the applicant's career development plan. Applicants are strongly encouraged to contact faculty members in the College of Education in their area of specialization before they apply to identify a potential adviser.
- Résumé.

For the EdS program, admissions occur three times a year: fall, spring and summer. Admitted students may begin course work during the first new semester after admission.

Admission to an education specialist program is separate from admission to the doctoral program. Upon completion of the EdS degree, the student may apply for admission to a doctoral program.

| Education EdS                     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jun 20 | Sep 20 | Feb 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

**CONTACT INFO**

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 Department of Educational Studies  
 ED 322-H

.....  
**Education EdS**

# School Counseling EdS

**TRACK DESCRIPTION**

The Specialist in Education program is designed for practicing educators who wish to gain expertise in a subfield within education, and offers a track in School Counseling. The program prepares educators who are interested in teaching in a college, university, or community college, or leading curriculum and instructional improvement in a school or school district, higher education, or military or business settings.

**CURRICULUM**

## Total Hours Required for EdS—48 Credit Hours beyond the Master's Degree.

The School Counseling EdS track requires a practicum and internship, with an optional thesis. Practica and internship are independent learning activities that take place in authentic settings in which students must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives students full control of the operational setting where they are placed (e.g., such as primary classroom teacher while being observed and mentored by a supervising teacher and UCF faculty member). Students who successfully complete this track will be able to work as school counselors in K-12 settings.

**Core Courses—9 Credit Hours**

- EDF 6155 Lifespan Human Development and Learning (3 credit hours)

- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- MHS 6220 Individual Psychoeducational Testing I (3 credit hours)

**Specialization Courses—30 Credit Hours**

- MHS 6400 Theories of Counseling and Personality (3 credit hours)
- MHS 6401 Techniques of Counseling (3 credit hours)
- MHS 6420 Counseling Special Populations (3 credit hours)
- MHS 6500 Group Procedures and Theories in Counseling (3 credit hours)
- SPS 6815 Legal and Ethical Issues in Professional School Counseling (3 credit hours)
- SDS 6347 Career Development (3 credit hours)
- SDS 6411 Counseling with Children and Adolescents (3 credit hours)
- SDS 6620 Coordination of Comprehensive Professional School Counseling Programs (3 credit hours)
- Two electives approved by the adviser (6 credit hours)

**Professional Clinical Experience—9 Credit Hours**

- MHS 6803 Practicum in Counselor Education (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)
- SDS 6947 Internship in Professional School Counseling (3 credit hours)

**Additional Graduation Requirements**

- Achieve at least a GPA of 3.0 in counseling specialization courses.
- Achieve a "B-" or better in MHS 6803 and SDS 6947.
- Complete a portfolio and receive approval by Counselor Education faculty.
- Pass comprehensive oral examinations satisfactorily.

## Total Hours Required for EdS—36 Credit Hours Minimum beyond the Master's Degree.

-based research study. The research study and final report will focus on reviewing and analyzing contemporary research in a student's particular specialization within the education profession in

order to help students acquire knowledge and skills pertaining to research-based best practices in that specialization area. For students already working in a school setting, this research based learning activity also typically involves action research (i.e., application and analysis of the effectiveness of research-based best practices in the classroom).

### **Core Courses—9 Credit Hours**

- EDF 7232 Analysis of Learning Theories in Instruction (3 credit hours)
- EDG 7221 Advanced Curriculum Theory (3 credit hours)
- EDG 7325 Models of Teaching and Instructional Theory (3 credit hours)

#### **Notes about core courses:**

- EDF 6259 is a prerequisite to EDF 7232.
- EDF 6223 is a prerequisite for both EDF 7221 and EDG 7325.
- All core courses and the core examination must be completed in the first six semesters of enrollment in the specialist program.

### **Specialization Courses—21 Credit Hours**

Students select an area of specialization in consultation with their adviser. Specializations may include, but are not limited to, Curriculum and Instruction Leadership, Applied Learning and Instruction, Reading Education, Social Context of Schooling, or Community College Education.

#### **Curriculum and Instruction Leadership**

- EDF 6233 Analysis of Classroom Teaching (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6XXX Teacher Leadership for Educational Equity and Social Justice (3 credit hours)
- EDG 6224 Curriculum Policy Analysis (3 credit hours)
- EDG 6XXX Seminar in Teacher Leadership (3 credit hours)
- ESE 6235 Curriculum Design (3 credit hours)
- ESE 6416 Curriculum Evaluation (3 credit hours)

#### **Applied Learning and Instruction**

- EDP 6213 Applied Learning and Instruction Seminar I (3 credit hours)

- EDP 6217 Applied Learning and Instruction Seminar II (3 credit hours)
- EDF 6216 Motivation in Learning and Performance (3 credit hours)
- EDF 6155 Lifespan Human Development and Learning (3 credit hours)
- EDF 6259 Learning Theories Applied to Classroom Instruction and Management (3 credit hours)
- EDF 6141 Human Intelligence (3 credit hours)
- EDF 6233 Analysis of Classroom Teaching (3 credit hours)

#### **Reading Education**

- RED 5147 Developmental Reading (3 credit hours)
- RED 5514 Classroom Diagnosis and Development of Reading Proficiencies (3 credit hours)
- RED 6116 Trends in Reading Education (3 credit hours)
- RED 6845 Advanced Evaluation and Instruction in Reading (3 credit hours)
- RED 6846 Reading Practicum (6 credit hours)
- Plus an additional 3 credit hour course approved by your adviser.

#### **Social Context of Schooling**

- EDF 6517 Perspectives on Education (3 credit hours)
- EDF 6725 Critical Issues in Urban Education (3 credit hours)
- EDF 6809 Introduction to Comparative and International Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EDF 6936 Seminar in Improving Teaching and Learning in Urban Settings (3 credit hours)
- EDF 6XXX Teacher Leadership for Educational Equity and Social Justice (3 credit hours)

#### **Community College Education**

- EDH 6053 The Community College in America (3 credit hours)
- EDH 6081 Contemporary Problems in Community Colleges (3 credit hours)
- EDH 6204 Community College Organization, Administration, and Supervision (3 credit hours)
- EDH 6215 Community College Curriculum (3 credit hours)



- EDH 6305 Teaching and Learning in the Community College (3 credit hours)
- IDS 6504 Adult Learning (3 credit hours)
- Plus an additional 3 credit hour course approved by your adviser.

### Research, Statistics, Measurement or Evaluation—6 Credit Hours Minimum

Students will select, in consultation with their adviser, 6 credit hours of Research, Statistics, Measurement or Evaluation courses to complement their specialization. Courses that may be used to fulfill this requirement include, but are not limited to:

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- EDF 6467 Mixed Methods for Evaluation in Educational Settings (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)
- EDF 7403 Quantitative Foundations of Educational Research (3 credit hours)
- EDF 7463 Analysis of Survey, Record and Other Qualitative Data (3 credit hours)
- EDF 7473 Ethnography in Educational Settings (3 credit hours)
- EDF 7475 Qualitative Research in Education (3 credit hours)
- EDG 6285 Evaluation of School Programs (3 credit hours)

### Examinations

Curriculum and instruction students must successfully complete one 3-hour examination in curriculum and instruction and one 3-hour examination in their area of specialization.

Satisfactory completion of a portfolio is required as the independent and culminating experience in this program. The portfolio will document the reflections and learning experiences and projects that the student has engaged in throughout the curriculum.

### ADMISSIONS

In addition to meeting general admission requirements, applicants must provide an official, competitive GRE score taken within the last five years, a goal statement, and a résumé.

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A goal statement detailing the specific subfield of education in which the applicant intends on specializing and explains how the degree will contribute to the applicant's career development plan. Applicants are strongly encouraged to contact faculty members in the College of Education in their area of specialization before they apply to identify a potential adviser.
- Résumé.

For the EdS program, admissions occur three times a year: fall, spring and summer. Admitted students may begin course work during the first new semester after admission.

Admission to an education specialist program is separate from admission to the doctoral program. Upon completion of the EdS degree, the student may apply for admission to a doctoral program.

| School Counseling EdS             | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jun 20 | Sep 20 | Feb 15 |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

### CONTACT INFO

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# Educational Leadership EdS

## PROGRAM DESCRIPTION

The Education Leadership EdS program is designed for those currently employed in or interested in decision-making positions in educational organizations. The program is an advanced professional degree designed specifically for individuals who have completed a master's degree in a field other than Educational Leadership and who wish to meet the requirements for Florida Level 1 Educational Leadership Certification while working toward a degree. Students who complete an EdS in Educational Leadership may apply for admission to the doctoral program. The EdS program requires a research report at the completion of studies.

## CURRICULUM

The Educational Leadership EdS program requires a minimum of 36 credit hours beyond the master's degree. Students must also complete a research report at the completion of their study, as well as successfully completing a three-hour examination in general educational leadership.

### Total Hours Required for EdS—36 Credit Hours Minimum beyond the Master's Degree.

The Educational Leadership EdS program requires a minimum of 36 credit hours beyond the master's degree. The completed program must include 21 credit hours in a specialization area and a minimum 6 credit hours in research and statistics. Students must also complete a research report at the completion of their study, as well as successfully completing a three-hour examination in general educational leadership. Students must earn an overall 3.0 GPA on all graduate work attempted.

### Core Courses—9 Credit Hours

- EDA 7101 Organizational Theory in Education (3 credit hours)
- EDA 6946 Internship (3 credit hours)
- EDA 6909 Research Report (3 credit hours)

### Specialization Courses—21 Credit Hours

- EDA 6061 Organization and Administration of Schools (3 credit hours)
- EDA 6232 Legal Aspects of School Operation (3 credit hours)
- EDA 6240 Educational Financial Affairs (3 credit hours)
- EDA 6260 Educational Systems Planning and Management (3 credit hours)
- EDA 6931 Contemporary Issues in Educational Leadership (3 credit hours)
- EDS 6123 Educational Supervisory Practices I (3 credit hours)
- EDS 6130 Educational Supervisory Practices II (3 credit hours)

### Co-requisite/Elective Courses—6 Credit Hours

- EDF 6401 Statistics for Educational Data (3 credit hours)\*
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)\*
- Electives (as approved by adviser) (6 credit hours) to total 36 hours

\* Required if not completed in master's degree

### Examinations

Educational leadership majors must successfully complete:

- One three-hour examination in general educational leadership.
- Pass all applicable section of the Florida Educational Leadership Examination.
- Students must complete a research report at the conclusion of their studies.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- One official transcript (in a sealed envelope) from each college/university attended.

- Official, competitive GRE score taken within the last five years.
- Résumé.
- Three letters of recommendation.

Admission to the EdS in Educational Leadership program is separate from admission to the doctoral program. EdS graduates may apply for admission to the doctoral program.

| Educational Leadership EdS        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Jun 20 | Sep 20 | Feb 1  |
| International Applicants          | Jan 15        | Jan 15 | Jul 1  | Nov 1  |
| International Transfer Applicants | Jan 15        | Mar 1  | Sep 1  | Dec 15 |

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 Department of Educational Research, Technology,  
 and Leadership  
 ED 222N

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# School Psychology EdS

## PROGRAM DESCRIPTION

**The EdS in School Psychology is a state-approved initial teacher preparation program that is subject to any change in the Florida Administrative Code (State Board of Education Rule 6A-5.066). Students enrolled in this program should remain in close contact with their adviser to keep informed of any program changes implemented to comply with new state requirements.**

The School Psychology EdS program is designed to prepare students in becoming certified School Psychologists. This specialist degree has very

specific requirements to meet the respective licensing requirements for school psychologists.

The School Psychology Program is a unique specialization in psychology and education. This program is based on two assumptions. School psychologists can apply relevant knowledge and skills from a variety of disciplines to the learning and adjustment problems of preschool and school-age children. Also, relevant knowledge and skills can be transmitted through a variety of services including (a) consultation with teachers and parents, (b) direct and indirect services to children and young adults, and (c) direct and indirect services to school and community organizations. School psychologists may practice in public or private schools, colleges and universities, rehabilitation centers, hospitals, mental health clinics, government agencies, child guidance centers, penal institutions, and may develop private practices. Applicants with backgrounds in education, psychology or other closely related undergraduate majors may qualify for the School Psychology degree program.

The program involves formal preparation and practical experiences focusing on psychological foundations (human development, learning and motivation), psychoeducational assessment, exceptional students, remediation or intervention techniques, counseling skills, as well as full-time supervised internship of two semesters in the public school setting. Graduates are certifiable at the state level and the program is approved and accredited by NASP/NCATE.

## CURRICULUM

The School Psychology EdS degree requires a minimum of 86 credit hours beyond the bachelor's degree, as well as a practicum and research report at the completion of study.

### **Total Hours Required for EdS—86 Credit Hours Minimum beyond the Bachelor's Degree.**

SPS courses are only open to students in the School Psychology Program.

### **Core Courses—12 Credit Hours**

- EDF 6401 Statistics for Educational Data (3 credit hours)
- EDF 6481 Fundamentals of Graduate Research in Education (3 credit hours)

- EEX 5051 Exceptional Children in the Schools (3 credit hours)
- EDP 6056 Advanced Educational Psychology (3 credit hours)

### Specialization Courses—56 Credit Hours

- SPS 6601 Introduction to Psychological Services in Schools (3 credit hours)
- SPS 6606 School Consultation Techniques (3 credit hours)
- SPS 6608 Seminar in School Psychology (3 credit hours)
- SPS 6801 Developmental Basis of Diverse Behaviors (3 credit hours)
- SPS 6225 Behavioral and Observational Analysis of Classroom Interactions in Schools (3 credit hours)
- SPS 6703 Child and Adolescent Deviant Behavior and Treatment (3 credit hours)
- SPS 6931 Ethical and Legal Issues in School Psychological Services (3 credit hours)
- MHS 6400 Theories of Counseling and Personality (3 credit hours)
- MHS 6401 Techniques of Counseling (3 credit hours)
- SPS 6191 Individual Psychoeducational Diagnosis I (4 credit hours)
- SPS 6192 Individual Psychoeducational Diagnosis II (4 credit hours)
- SPS 6125 Infant Development Assessment (3 credit hours)
- SPS 6194 Assessment of Special Needs (3 credit hours)
- SPS 6206 Psychoeducational Interventions (3 credit hours)
- SPS 6175 Cultural Diversity and Nonbiased Assessment (3 credit hours)
- SPS 6909 Research Report I and II (6 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

### Practicum and Internship—18 Credit Hours

- SPS 6946 Practicum in School Psychology I (3 credit hours)
- SPS 6946 Practicum in School Psychology II (3 credit hours)
- SPS 6948 School Psychology Internship I and II (12 credit hours)

### Prerequisites or Co-requisites (DOE Certification)

- TSL 5528 Teaching Language Minority Students in K-12 Classrooms (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Education (3 credit hours) or EDF 6608 Social Factors in American Education (3 credit hours)
- A practicum and research report are required as the culminating independent learning experience.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

In addition to the general UCF graduate admission requirements, applicants to this program must provide:

- Attend an information session with program faculty prior to applying to the program (call (407) 823-2401 for meeting dates). **Do not apply until you attend an information session.**
- One official transcript (in a sealed envelope) from each college/university attended.
- Official, competitive GRE score taken within the last five years.
- A baccalaureate degree in Education or Psychology.
- Three letters of recommendation (one from a faculty member).
- Résumé.
- Statement of goals.
- Receive a favorable recommendation for admission by the School Psychology Review Committee.

This program can only accommodate a limited number of students; therefore, there is a possibility of being denied admission even when all criteria are met. Admissions to this program will only occur in the fall term. Information concerning specific admissions policies and procedures can be obtained from the program website: <http://schpsy.education.ucf.edu/index.cfm>. All other questions will be answered during the orientation meeting prospective students are required to attend.

| School Psychology EdS             | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Jan 15        | Mar 1  |        |        |
| International Applicants          | Jan 15        | Jan 15 |        |        |
| International Transfer Applicants | Jan 15        | Mar 1  |        |        |

## CONTACT INFO

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 Department of Child, Family and Community Sciences  
 Education 115-J

| Biomedical Sciences PhD           | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               | Dec 15        | Dec 15 |        |        |
| International Applicants          | Dec 15        | Dec 15 |        |        |
| International Transfer Applicants | Dec 15        | Dec 15 |        |        |

## Certificate Programs

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# Addictions Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Addictions provides a unique opportunity for professionals working in government agencies, nonprofit organizations, and private corporations, whose responsibilities include developing policies and programs, intervening and treating the alcohol and drug abusing population and other forms of addictions.

The certificate can only be taken as part of the Master of Social Work program. The School of Social Work is approved by the Florida Certification Board as a provider of addictions curriculum.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Course—3 Credit Hours

- SOW 5712 Interventions with Substance Abusers (3 credit hours)

#### Addictions Course Elective—3 Credit Hours

Take one of the courses listed below.

- SOW 5604 Medications in Social Work Practice (3 credit hours)
- SOW 5662 Strategies in Employee Assistance Programs (3 credit hours)
- SOW 5713 Prevention and Treatment of Adolescent Substance Abuse (3 credit hours)
- SOW 5907 Independent Study in Addiction (3 credit hours)

#### Clinical Social Work Courses—6 Credit Hours

Take any two courses listed below.

- SOW 6123 Psychosocial Pathology (3 credit hours)
- SOW 6324 Clinical Practice with Groups (3 credit hours)
- SOW 6612 Clinical Practice with Families (3 credit hours)

- SOW 6656 Clinical Practice with Children and Adolescents (3 credit hours)

## ADMISSIONS

Admission is only open to those in the Master of Social Work program. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please submit all requested material by the established deadline(s).

| Additions Certificate             | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 School of Social Work  
 HPA 1 204

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# Adult Nurse Practitioner Certificate

## PROGRAM DESCRIPTION

The Post Master's Adult Nurse Practitioner Graduate Certificate is designed for nurses with a master's degree in nursing to be Adult Nurse Practitioners. The program is a primary care adult nurse practitioner program, is 20 credit hours and includes up to 630 hours of clinical practice. There are 12 credit hours of prerequisite requirements and up to 3 credit hours of Advanced Practice Practicum NGR 6941, which may be waived for applicants who are licensed as Advanced Practice Nurses (APNs).

## CURRICULUM

### Prerequisites

The following graduate-level courses or equivalents are prerequisites for the program. Courses with a grade of "B" or better will be accepted.

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Lab (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)

### Total Hours Required—20 Credit Hours Minimum

### Required for all Nurse Practitioner Graduate Certificates—7 Credit Hours

- NGR 6941 Advanced Practice Practicum (7 credit hours)

**Note:** Applicants who are licensed as Advanced Practice Nurses may have up to 3 credit hours of NGR 6941 Advanced Practice Practicum waived.

### Required Courses—13 Credit Hours

- NGR 6240 Adult I for APNs (3 credit hours)
- NGR 6240L Adult I Clinical for APNs (3 credit hours)
- NGR 6242 Adult II for APNs (2 credit hours)
- NGR 6242L Adult II Clinical for APNs (2 credit hours)
- NGR 6334 Women's Health for APNs (2 credit hours)
- NGR 6482L Women's Health for APNs Clinical (1 credit hour)

## ADMISSIONS

Admission is open to those with a master's degree in nursing from a program accredited by NLNAC (National League for Nursing Accreditation Commission) or CCNE (Commission on Collegiate Nursing Education), licensure as a Registered Nurse in Florida and completion of an undergraduate health assessment course. Please submit all requested material by the established deadline(s). Applicants must apply online.

Admission to the program is competitive on a space-available basis. The following information must be submitted to the UCF College of Graduate Studies in order to be considered for the Adult Nurse Practitioner Graduate Certificate program:

- Official transcripts of BSN and master's degrees.
- Two letters of recommendation from individuals who can judge abilities for Advanced Practice Nursing, preferably nurse instructors, nurse employers, or nurses with advanced degrees.
- Personal statement describing goals as a primary care nurse practitioner.
- UCF Health Form (Upon acceptance to the program, a College of Nursing Health Form will be required).
- Resume (no longer than two pages).
- Copy of RN License.
- A VECHS/FDLE/FBI finger printing and certified background check must be submitted to the School of Nursing upon acceptance to the program.

| Adult Nurse Practitioner Certificate | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                  |               | Apr 15 | Nov 14 |        |
| International Applicants             |               |        |        |        |
| International Transfer Applicants    |               |        |        |        |

## CONTACT INFO

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 College of Nursing  
 Health and Public Affairs 1 220 B

# Aging Studies Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Aging Studies is designed to prepare individuals presently employed in the aging field to increase their knowledge of the special needs of our elderly citizens. Graduate students who are enrolled in health sciences, psychology, social work, nursing, communication sciences and disorders, or sociology, as well as in other areas, such as liberal arts, music education, physical education, or art education, will find the certificate valuable. The mission of the aging studies certificate is to prepare individuals from diverse disciplines to address the physiological, psychological, sociological, environmental, cultural, legal-ethical, and public policy dynamics inherent in the lives of older adults.

## CURRICULUM

**Total Hours Required—15 Credit Hours Minimum**

**Required Course—3 Credit Hours**

- GEY 5648 Gerontology: An Interdisciplinary Overview

**Elective Courses—12 Credit Hours**

Select four courses from the following.

- CLP 5187 Mental Health and Aging (3 credit hours)
- GEY 5600 Physiology of Aging (3 credit hours)
- GEY 5007 Women and Healthy Aging (3 credit hours)
- NGR 5931 Interdisciplinary Care at End-of-Life (3 credit hours)
- PHT 6374 Gerontology in Physical Therapy\* (3 credit hours)
- SOW 5642 Aging in Social Situations (3 credit hours)
- SOW 6938 Interventions with the Elderly and Their Families (3 credit hours)
- SPA 5477 Aging and Communication (3 credit hours)
- SYP 5738 Seminar on the Welfare State and Aging (3 credit hours)
- SYP 6565 Elder Abuse and Neglect (3 credit hours)

\* Physical Therapy majors only

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Aging Studies Certificate         | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 School of Social Work  
 HPA 1 204

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# Applied Mathematics Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Applied Mathematics is designed to provide students with a strong mathematical and analytical foundation for course work, research and practical applications in disciplines where mathematics is an essential tool.

## CURRICULUM

**Total Hours Required—9 Credit Hours Minimum**

## Required Courses—9 Credit Hours

Select three courses from the following list.

- MAA 6405 Complex Variables (3 credit hours)
- MAP 6407 Applied Mathematics I (3 credit hours)
- MAP 5426 Special Functions (3 credit hours)
- MAP 5435 Advanced Mathematics for Engineers (3 credit hours)
- MAP 6424 Transform Methods (3 credit hours)
- MAP 6507 Wave Propagation Through Random Media (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission to the program is competitive on a space-available basis. Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Applied Mathematics Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 Department of Mathematics  
 Math and Physics 212



# Applied Operations Research Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Applied Operations Research is designed to prepare individuals with an overview of Operations Research (OR) tools, develop competence in modeling programs and provide practice and hands-on experience. OR models and solution techniques provide a powerful arsenal for solving complex resource allocation and management problems. OR has been used to solve many of the scheduling, distribution, staffing and design problems in industry. As more powerful desktop computers and software become available, the potential to apply OR models and methods to such problems will grow.

## CURRICULUM

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—12 Credit Hours**

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6336 Queuing Systems (3 credit hours) or ESI 6358 Decision Analysis (3 credit hours) or ESI 6418 Linear Programming and Extensions (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Applied Operations Research Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                     |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                |               |        |        |        |

| Applied Operations Research Certificate | Fall Priority | Fall | Spring | Summer |
|-----------------------------------------|---------------|------|--------|--------|
| International Transfer Applicants       |               |      |        |        |

## CONTACT INFO

Charles H. Reilly PhD  
 Professor  
 Program Director  
 gradiems@mail.ucf.edu  
 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

# Autism Spectrum Disorders Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Autism Spectrum Disorders (ASD) provides additional training for professionals in Exceptional Education. Course work focuses on knowledge, skills and competencies for working with students with ASD. The program is composed of four graduate courses that can be incorporated into a master's program of study in Exceptional Education or taken as an add-on to an undergraduate or graduate degree. A 20-hour field experience component is associated with each of the four courses. Pending state approval, individuals holding the Florida ESE teacher certification may apply the four certificate courses toward the State Endorsement in Autism (Administrative Rule 6A-4.01796).

## CURRICULUM

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—12 Credit Hours**

- EEX 6246 Nature of Autism: Theory and Educational Practice (3 credit hours)

- SPA 6437 Communication Foundations and Assistive/Instructional Technology for Communication (3 credit hours)
- EEX 6297 Assessment, Diagnosis, and Curriculum Prescriptions for Students with Autism (3 credit hours)
- EEX 6612 Methods of Behavioral Management (3 credit hours)

A 20-hour field experience component is associated with each of the four courses.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Autism Spectrum Disorders Certificate | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                   |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants              |               |        |        |        |
| International Transfer Applicants     |               |        |        |        |

## CONTACT INFO

Wilfred Wienke EdD  
 Professor  
 Program Director  
 wwienke@mail.ucf.edu  
 Telephone 407-823-2402  
 Child, Family and Community Sciences  
 Education 315 T

# CAD/CAM Technology Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in CAD/CAM Technology prepares engineers for careers in design. The certificate focuses on engineering practice and experience as students learn to solve problems within realistic industrial constraints. The program offers a variety of learning opportunities for professional development.

## CURRICULUM

### Total Hours Required—9 Credit Hours Minimum

### Required Courses—9 Credit Hours

- EML 4024C Engineering Design Practice (3 credit hours)
- EML 5532C Computer-Aided Design for Manufacture (3 credit hours)
- EGN 5858C Prototyping and Product Realization (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| CAD/CAM Technology Certificate    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

Alain Kassab PhD  
 Professor  
 Program Director  
 gradmmae@mail.ucf.edu  
 Telephone 407-823-3402  
 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

- MAN 5021 Management Foundations (1.5 credit hours)
- MAN 6305 Human Resource Management (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission to the program is competitive on a space-available basis.

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## Career Counseling Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Career Counseling offers additional training to counselors and other professionals who provide career counseling or consultation services. The program can be tailored to an area of concentration by combining the three required courses addressing career counseling and at least one graduate-level specialization elective in a specific academic discipline.

| Career Counseling Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CURRICULUM****Total Hours Required—12 Credit Hours Minimum****Required Courses—9 Credit Hours**

- SDS 6347 Career Development (3 credit hours)
- MHS 6306 Applied Career Development (3 credit hours)
- MHS 6307 Applied Career Development II (3 credit hours)

**Elective Courses—3 Credit Hours**

Students may choose to specialize in a specific academic discipline or tailor their own areas of concentration.

- MHS 6020 Mental Health Care Systems (3 credit hours)
- EDA 6540 Organization and Administration of Higher Education (3 credit hours)
- SDS 6620 Coordination of Comprehensive Professional School Counseling Programs (3 credit hours)
- SOW 5305 Social Work Practice I: Generalist Practice (3 credit hours)

**CONTACT INFO**

Andrew Daire PhD  
 Assistant Professor  
 Program Director  
 adaire@mail.ucf.edu  
 Telephone 407-823-0385  
 Department of Child, Family and Community Sciences  
 Education 322-R

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## Child Language Disorders Certificate

**PROGRAM DESCRIPTION**

The Child Language Disorders Graduate Certificate is designed to prepare prospective and practicing speech-language pathologists with knowledge and skills in managing children with language disorders. School-based practitioners carry a caseload of more than 50 percent in child language disorders,

therefore recognizing child language as the most prevalent communication disorder served by speech language pathologists.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—6 Credit Hours

- SPA 6401 Language Disorders in Infants and Toddlers (3 credit hours)
- SPA 6843 Severe Language-based Reading and Writing Disabilities (3 credit hours)

#### Elective Courses—6 Credit Hours

Two elective courses are required in Communication Sciences and Disorders or related disciplines. Elective courses must be selected in consultation with the graduate program director and an academic adviser.

## ADMISSIONS

Admission is open to those with a master's degree from a regionally accredited institution. Students cannot transfer any courses from a previous graduate degree program or certificate toward the completion of this certificate. Admission to the program is competitive on a space-available basis. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please be sure to submit all requested material by the established deadline(s).

| Child Language Disorders Certificate | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                  |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants             |               |        |        |        |
| International Transfer Applicants    |               |        |        |        |

## CONTACT INFO

Martine Vanryckeghem PhD  
 Professor  
 Program Director  
 martinev@mail.ucf.edu  
 Telephone 407-823-4808  
 Department of Communicative Disorders  
 Health and Public Affairs II 101R

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# Children's Services Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Children's Services is designed to prepare students on how to work with children and families in the child welfare system who are facing issues of abuse or neglect. Students will learn how to assess abuse and neglect and to develop appropriate ways to work with the families and elements of the child welfare system. The certificate program includes both academic work and a specialized field internship. The program is a joint effort between the School of Social Work and Florida Department of Children and Families to improve services to children and families.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—15 Credit Hours

- SOW 5652 Children's Services in Social Work\* (3 credit hours)
- SOW 6655 Child Abuse: Treatment and Prevention\* (3 credit hours)
- SOW 6612 Clinical Practice with Families (3 credit hours)
- SOW 6535 Clinical Field Education I (3 credit hours)
- SOW 6536 Clinical Field Education II (3 credit hours)

\* Students who completed these courses for the undergraduate certificate in Children's Services must contact the program director to arrange for appropriate course substitutions.

## ADMISSIONS

Admission is only open to those in the Master of Social Work program. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please submit all requested material by the established deadline(s).

Students interested in admission to this certificate program should contact the Master of Social Work (MSW) Program Director and the Field Education Coordinator to ensure a proper field placement.\* Internship stipends are available to students participating in the Title IV-E child welfare training program. Interested students should contact the social work field coordinator.

\* Placement is with the Department of Children and Families, community-based care organizations, or related agencies (working with protective services or child welfare). Students need to discuss their interest in the certificate with the Field Office while arranging for the MSW placement.

| Children's Services Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Estelli Ramos  
 Program Director  
 esramos@mail.ucf.edu  
 Telephone 407-823-5428  
 School of Social Work  
 HPA 1 204

# Clinical Nurse Leader Certificate

## PROGRAM DESCRIPTION

The Clinical Nurse Leader Graduate Certificate prepares nurses who have a master's degree in nursing for positions as Clinical Nurse Leaders. Clinical Nurse Leaders are advanced educated nurses who function as clinical experts at the unit-based level.

## CURRICULUM

The Clinical Nurse Leader certificate curriculum consists of advanced clinical courses as well as advanced clinical nursing leadership. The program is 12 credit hours and includes 435 hours of clinical practice. There are 18 credit hours of prerequisite/corequisite requirements.

## Prerequisite/Corequisite Courses—18 Credit Hours

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment Clinical (1 credit hour)
- NGR 5141 Pathophysiological Bases for APN (3 credit hours)
- NGR 6192 Pharmacology (3 credit hours)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 6722 Financial Management and Resource Utilization (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)

## Total Hours Required—12 Credit Hours Minimum

### Required Courses—12 Credit Hours

- NGR 6874 Nursing Environment Management (3 credit hours)
- NGR 6105 Management of Symptoms and Outcome (3 credit hours)
- NGR 6777L CNL Quality and Safety (1 credit hour, 45 clinical hours)
- NGR 6775L CNL Resources and Outcomes (1 credit hour)
- NGR 6776L CNL Advocacy and Education (1 credit hour)
- NGR 6773 CNL Residency (3 credit hours)

## ADMISSIONS

Admission is open to those with a master's degree in nursing from a program accredited by NLNAC (National League for Nursing Accreditation Commission) or CCNE (Commission on Collegiate Nursing Education), licensure as a Registered Nurse in Florida and completion of an undergraduate health assessment course. Please submit all requested material by the established deadline(s). Applicants must apply online.

Admission to the program is competitive on a space-available basis. The following information must be submitted to the UCF College of Graduate Studies in order to be considered for the Clinical Nurse Leader Graduate Certificate program:

- Online application
- Official transcripts of BSN and master's degrees
- Three letters of recommendation from individuals who can judge abilities for Advanced Practice Nursing, preferably from nurse instructors, nurse employers, or nurses with advanced degrees
- Personal statement describing interest in completing certificate program
- UCF Health Form (Upon acceptance to the program, a College of Nursing Health Form will be required.)
- Resume (no longer than two pages)
- Copy of RN License
- A VECHS/FDLE/FBI finger printing and certified background check must be submitted to the College of Nursing upon acceptance to the program.

| Clinical Nurse Leader Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Apr 15 | Nov 14 |        |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Mary Lou Sole PhD  
 Professor  
 Program Director  
 ucfnurse@mail.ucf.edu  
 Telephone 407-823-2744  
 College of Nursing  
 Health and Public Affairs 1

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# Clinical Nurse Specialist Certificate

## PROGRAM DESCRIPTION

The Clinical Nurse Specialist Graduate Certificate is designed to prepare nurses who have received a master's degree in nursing for positions as Clinical Nurse Specialists. The program is 16 credit hours and includes up to 500 hours of clinical practice. There are 12 credit hours of prerequisite requirements.

## CURRICULUM

The following graduate-level courses or equivalents are required prerequisites for the program. Courses with a grade of B or better will be accepted.

### Prerequisites

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)
- NGR 5720 Organizational Dynamics (3 credit hours)
- NGR 6722 Financial Management and Resource Utilization (3 credit hours)

## Total Hours Required—16 Credit Hours Minimum

### Required Courses—16 Credit Hours Minimum

- NGR 6752 Clinical Nurse Specialist I (3 credit hours)

- NGR 6752L Clinical Nurse Specialist I Practicum (3 credit hours)
- NGR 6753 Clinical Nurse Specialist II (2 credit hours)
- NGR 6753L Clinical Nurse Specialist II Practicum (3 credit hours)
- NGR 6941 Advanced Practice Practicum (5 credit hours)

## ADMISSIONS

Admission is open to those with a master's degree in nursing from a program accredited by NLNAC (National League for Nursing Accreditation Commission) or CCNE (Commission on Collegiate Nursing Education), and licensure as a Registered Nurse in Florida. Please submit all requested material by the established deadline(s). Applicants must apply online.

Admission to the program is competitive on a space-available basis. The following information must be submitted to the UCF College of Graduate Studies in order to be considered for the Clinical Nurse Specialist Graduate Certificate program:

- Official transcripts of BSN and master's degrees.
- Two letters of recommendation from individuals who can judge abilities for Advanced Practice Nursing, such as from nurse instructors, nurse employers, or nurses with advanced degrees
- Personal statement describing interest in completing certificate program.
- UCF Health Form (Upon acceptance to the program, a College of Nursing Health Form will be required.)
- Resume (no longer than two pages).
- Copy of RN License.
- A VECHS/FDLE/FBI finger printing and certified background check must be submitted to the College of Nursing upon acceptance to the program.

| Clinical Nurse Specialist Certificate | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                   |               | Apr 15 | Nov 14 |        |
| International Applicants              |               |        |        |        |
| International Transfer Applicants     |               |        |        |        |

## CONTACT INFO

Mary Lou Sole PhD  
 Professor  
 Program Director  
 ucfnurse@mail.ucf.edu  
 Telephone 407-823-2744  
 College of Nursing  
 Health and Public Affairs 1

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# Coaching Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Coaching prepares coaches in youth, school and recreational programs for the coaching endorsement, a state of Florida requirement to coach interscholastic sports. The courses available in the program will provide students with two of the three required courses for the coaching endorsement, a requirement in the state of Florida to coach in public school. The additional requirement to gain the coaching endorsement can be obtained by taking an undergraduate course or completing a county workshop on coaching specialization. Students completing this program can be hired in school districts, youth sports programs and other recreational agencies needing trained and certified coaches.

## CURRICULUM

**Total Hours Required—15 Credit Hours Minimum**

**Required Courses—15 Credit Hours**

- PET 5355 Exercise and Health (3 credit hours)

- PET 5635 Advanced Human Injuries (3 credit hours)
- PET 5766 Advanced Coaching Theory (3 credit hours)
- PET 6391 Training and Conditioning Techniques for Coaches (3 credit hours)
- PET 6217 Peak Performance in Sports (3 credit hours)

### Prerequisite/Corequisite Courses

Choose one course from the following selection or complete credit via a county workshop.

- PEO 2624 Coaching Basketball (3 credit hours)
- PEO 3644 Coaching Football (3 credit hours)
- PEO 3324 Coaching Volleyball (3 credit hours)

### ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

A prerequisite/corequisite of an undergraduate course or workshop in a coaching specialization is required for the coaching endorsement. Admission to the program is competitive on a space-available basis.

| Coaching Certificate              | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

### CONTACT INFO

Tom Fisher PhD  
 Program Director  
 tfisher@mail.ucf.edu  
 Telephone 407-823-3046  
 Teaching and Learning Principles  
 ED 320P

## Cognitive Sciences Certificate

### PROGRAM DESCRIPTION

The Graduate Certificate in Cognitive Sciences is designed for students who want some form of graduate study related to their undergraduate disciplines (anthropology, computer science, education, linguistics, biology, psychology, philosophy, etc.), graduate students working on programs related to cognitive sciences, individuals who need to fulfill an 18 credit hour concentration in the Interdisciplinary Studies MA or teachers and employees who want to enhance their educational credentials.

The certificate is an interdisciplinary program focusing on specific topics in the study of natural and artificial cognitive systems. The interdisciplinary program draws from related courses in the departments of Communication Sciences and Disorders, Computer Science, English (linguistics), Philosophy and Psychology.

### CURRICULUM

#### Total Hours Required—18 Credit Hours Minimum

#### Required Courses—6 Credit Hours

The program recommends that students complete these courses in the first year of the certificate.

- PHI 5327 Topics in Cognitive Sciences (3 credit hours)
- PHI 5340 Research Methods in Cognitive Sciences (3 credit hours)

#### Elective Courses—12 Credit Hours

Choose four elective courses from at least three of the following areas.

#### Language and Linguistics

- LIN 5137 Linguistics (3 credit hours)
- LIN 6932 Problems in Linguistics (3 credit hours)
- SPA 5477 Aging and Communication (3 credit hours)
- SPA 6410 Aphasia and Related Disorders (3 credit hours)



- SPA 6417 Cognitive-Linguistic Communication Disorders (3 credit hours)

### Machine and Artificial Intelligence

- CAP 5610 Machine Learning (3 credit hours)
- CAP 5636 Advanced Artificial Intelligence (3 credit hours)
- CAP 5415 Computer Vision (3 credit hours)
- CAP 6637 Affective Computing with Artificial Intelligence (3 credit hours)
- CAP 6640 Computer Understanding of Natural Language (3 credit hours)
- CAP 6671 Intelligent Systems (3 credit hours)
- CAP 6676 Knowledge Representation (3 credit hours)

### Philosophy of Mind

- PHI 5325 Topics in Philosophy of Mind (3 credit hours)
- PHI 5225 Philosophy of Language (3 credit hours)
- PHI 5329 Philosophy of Neuroscience (3 credit hours)
- PHI 5328 Philosophies of Embodiment (3 credit hours)

### Psychology

- EXP 5208 Sensation and Perception (3 credit hours)
- EXP 5256 Human Factors I (3 credit hours)
- EXP 6255 Human Performance (3 credit hours)
- EXP 6506 Human Cognition and Learning (3 credit hours)
- PSB 5005 Physiological Psychology (3 credit hours)

All elective courses listed above have been approved for inclusion by the chair or director of the relevant program. However, students without the appropriate prerequisites to courses will need to request the consent of the instructor to enroll.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission to the program is competitive on a space-available basis. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for

completing the certificate.

| Cognitive Sciences Certificate    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jun 30 | Nov 15 | Mar 30 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Jennifer Mundale PhD  
Associate Professor  
Program Director  
jmundale@pegasus.cc.ucf.edu  
Telephone 407-823-5076  
Department of Philosophy  
PSY 220

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# Communications Systems Certificate

## PROGRAM DESCRIPTION

The Communications Systems Graduate Certificate is designed to prepare students with the basic principles in analysis and design of communications systems. After studying the background concepts of probability, random variables and stochastic processes, students will be able to analyze existing or new communication systems. The fundamental elements of all communication systems (transmitter, channel, and receiver) will be thoroughly investigated and a number of practical communication systems will be discussed in detail.

## CURRICULUM

### Total Hours Required—9 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- EEL 5542 Random Processes I (3 credit hours)
- EEL 6504 Communications Systems Design (3 credit hours)

- EEL 6530 Communication Theory (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Communications Systems Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants           |               |        |        |        |
| International Transfer Applicants  |               |        |        |        |

## CONTACT INFO

Michael Georgiopoulos PhD  
 Professor  
 Program Director  
 michaelg@mail.ucf.edu  
 Telephone 407-823-5338  
 Department of Electrical Engineering  
 Engineering 407B

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# Community College Education Certificate

## PROGRAM DESCRIPTION

The Community College Education Graduate Certificate prepares students to become campus leaders at all organizational levels of community colleges, including the classroom. The certificate consists of five graduate courses that cover all facets of community college education. The courses are available completely online in a web-based format.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

### Required Courses—15 Credit Hours

- EDH 6053 The Community College in America (3 credit hours)
- EDH 6081 Contemporary Problems in Community Colleges (3 credit hours)
- EDH 6204 Community College Organization, Administration, and Supervision (3 credit hours)
- EDH 6215 Community College Curriculum (3 credit hours)
- EDH 6305 Teaching and Learning in the Community College (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Community College Education Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                     |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                |               |        |        |        |
| International Transfer Applicants       |               |        |        |        |

## CONTACT INFO

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 Other  
 pmiller@mail.ucf.edu  
 Telephone 407-823-4835  
 Department of Teaching and Learning Principles  
 ED 209

# Computer Forensics Certificate

- Out of State Computer Forensics Cohort

## PROGRAM DESCRIPTION

The National Center for Forensic Science (NCFS), the School of Electrical Engineering and Computer Science, and the Department of Chemistry jointly sponsor an interdisciplinary Graduate Certificate in Computer Forensics. This web-assisted certificate program provides a unique opportunity for graduate training to professionals and paraprofessionals who deal directly or indirectly with digital evidence, including law enforcement investigators, forensic laboratory analysts, lawyers and judges, and corporate computer security specialists. In addition, the Interdisciplinary Studies Program offers a Master of Science degree in Interdisciplinary Studies with a concentration in Computer Forensics, and the recently approved Master of Science degree in Digital Forensics provides further graduate work in digital forensics.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- CHS 5503 Topics in Forensic Science (3 credit hours)
- CHS 5518 The Forensic Collection and Examination of Digital Evidence (3 credit hours) or CHS 5596 The Forensic Expert in the Courtroom (3 credit hours)
- CGS 5131 Computer Forensics I: Seizure and Examination of Computer Systems (3 credit hours)
- CGS 5132 Computer Forensics II: Network Security, Intrusion Detection, and Forensic Analysis (3 credit hours)

#### Elective Courses—3 Credit Hours

Choose one course from the following list

- CET 6887 The Practice of Digital Forensics (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)

- A digital evidence course approved by the graduate faculty

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission to the program is competitive on a space-available basis. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate. Students interested in the Non-Florida Residents Track, must contact the program director, Sheau-Dong Lang, PhD, prior to applying.

| Computer Forensics Certificate    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Sheau-Dong Lang PhD  
Associate Professor  
Program Director  
lang@cs.ucf.edu  
Telephone 407-823-2474  
Department of Chemistry  
HEC 207

*Computer Forensics Certificate*

# Out of State Computer Forensics Cohort

## TRACK DESCRIPTION

The Graduate Certificate in Computer Forensics provides a unique graduate training opportunity for those who deal directly or indirectly with digital evidence.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- CHS 5503 Topics in Forensic Science (3 credit hours)
- CHS 5518 The Forensic Collection and Examination of Digital Evidence (3 credit hours) or CHS 5596 The Forensic Expert in the Courtroom (3 credit hours)
- CGS 5131 Computer Forensics I: Seizure and Examination of Computer Systems (3 credit hours)
- CGS 5132 Computer Forensics II: Network Security, Intrusion Detection, and Forensic Analysis (3 credit hours)

#### Elective Courses—3 Credit Hours

Choose one course from the following list or any course related to Digital Evidence and approved by the program director.

- CET 6887 The Practice of Digital Forensics (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- CHS 5503 Topics in Forensic Science (3 credit hours)
- CHS 5518 The Forensic Collection and Examination of Digital Evidence (3 credit

hours) or CHS 5596 The Forensic Expert in the Courtroom (3 credit hours)

- CGS 5131 Computer Forensics I: Seizure and Examination of Computer Systems (3 credit hours)
- CGS 5132 Computer Forensics II: Network Security, Intrusion Detection, and Forensic Analysis (3 credit hours)

#### Elective Courses—3 Credit Hours

Choose one course from the following list

- CET 6887 The Practice of Digital Forensics (3 credit hours)
- CAP 6133 Advanced Topics in Computer Security and Computer Forensics (3 credit hours)
- A digital evidence course approved by the graduate faculty

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission to the program is competitive on a space-available basis. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate. Students interested in the Non-Florida Residents Track, must contact the program director, Sheau-Dong Lang, PhD, prior to applying.

| Out of State Computer Forensics Cohort                                                | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                                   |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                                                              |               | Jul 15 | Dec 1  | Apr 15 |
| International students from abroad are eligible to apply for this out of state cohort |               |        |        |        |
| International Transfer Applicants                                                     |               | Jul 15 | Dec 1  | Apr 15 |
| International transfer students are eligible to apply for this out of state cohort.   |               |        |        |        |

**CONTACT INFO**

Sheau-Dong Lang PhD  
 Associate Professor  
 Program Director  
 lang@cs.ucf.edu  
 Telephone 407-823-2474  
 Department of Chemistry  
 HEC 207

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# Conservation Biology Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Conservation Biology emphasizes basic and applied conservation biology. The certificate offers an excellent opportunity for cross-discipline training that provides conservation theory in a classroom setting and valuable field work in the laboratory portions of the Biology courses. The Department of Biology provides basic courses on campus, while scientists at Walt Disney World's Animal Kingdom offer applied courses on Disney property. Practical experience dealing with small animal populations is provided within Disney's unique zoological setting.

**CURRICULUM****Total Hours Required—12 Credit Hours Minimum****Required Courses—12 Credit Hours**

Students should take two courses from Group A, at least one course from Group B, and the course from Group C.

**Group A**

- BSC 5332 Invasion Biology (3 credit hours)
- PCB 5045C Conservation Biology (4 credit hours)
- PCB 5520 Behavioral Ecology (3 credit hours)
- PCB 5935 Current Research in Population Genetics and Evolution (3 credit hours)
- PCB 6048C Restoration Ecology (4 credit hours)
- PCB 6328C Landscape Ecology (4 credit hours)

- PCB 6480C Quantitative Conservation Biology (4 credit hours)
- PCB 6556 Conservation Genetics (3 credit hours)

**Group B**

- BOT 6623C Plant Ecology (4 credit hours)
- BSC 5821 Biogeography (4 credit hours)
- ENY 5006C Entomology (4 credit hours)
- PCB 5326C Ecosystems of Florida (5 credit hours)
- PCB 5435C Marine Ecology of Florida (4 credit hours)
- PCB 6035C Wetland Ecology (4 credit hours)
- ZOO 5456C Ichthyology (4 credit hours)
- ZOO 5463C Herpetology (4 credit hours)
- ZOO 5475L Field Ornithology (3 credit hours)
- ZOO 5486C Mammalogy (4 credit hours)

**Group C**

- PAZ 5235 Zoo and Aquarium Biology and Management (3 credit hours)

Graduate students enrolled in the Graduate Certificate in Conservation Biology are expected to engage in independent learning throughout their enrollment. Independent learning is a key component of all of the courses approved for inclusion in this certificate, where emphasis is placed on the development of analytical skills and critical thinking. In addition, depending upon their career goals, other experiences such as directed readings, additional research projects, or internships may be undertaken by the students.

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must submit an essay that describes their interests and background in conservation biology. Students need to have a 3.0 GPA in the last 60 hours of course work attempted and provide GRE scores (verbal and quantitative) taken within the last five years. Admission will be conditional upon receipt of the official score.

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities,

past performance, recommendations, match of this program and faculty expertise to the applicant's career/academic goals, and the applicant's potential for completing the certificate.

| Conservation Biology Certificate                                                                                                           | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                                                                                        |               | Jan 15 |        |        |
| Students applying for summer or spring admission will be considered on an ad hoc basis but must complete their applications by December 1. |               |        |        |        |
| International Applicants                                                                                                                   |               |        |        |        |
| International Transfer Applicants                                                                                                          |               |        |        |        |

## CONTACT INFO

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 Program Director  
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 Department of Biology  
 BIO 301

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# Humanities Certificate, Contemporary

## PROGRAM DESCRIPTION

The Graduate Certificate in Contemporary Humanities is an interdisciplinary program focusing on contemporary Western and non-Western concerns. By encouraging students to develop unique, cross-disciplinary perspectives on how contemporary trends, such as advancing technology and globalization, affect who we are and what we are becoming, the Contemporary Humanities graduate certificate has the potential to affect scholarly inquiry in both humanistic and non-humanistic fields and to serve central Florida, a site of rapid technological and demographic change.

## CURRICULUM

All elective courses have been approved for inclusion by the relevant departments. Students without relevant prerequisites will need to obtain consent of the instructor in order to enroll.

Please note that Spanish courses are taught in Spanish. Students will need to pass a Spanish proficiency exam in order to enroll.

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—6 Credit Hours

- HUM 5803 Theories and Methods of the Humanities (3 credit hours)
- HUM 5802 Applied Contemporary Humanities (3 credit hours)

#### Elective Courses—9 Credit Hours

Students may choose to specialize in some specific academic discipline or tailor their own areas of concentration. Choose elective courses from the following list.

- AMH 5296 Colloquium in 20th Century U.S. (3 credit hours)
- AMH 5391 Colloquium in U.S. Cultural History (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)
- ASH 5408 Colloquium in Modern China (3 credit hours)
- COM 6303 Communication Research I (3 credit hours)
- COM 6468 Communication and Conflict (3 credit hours)
- CPO 5334 Contemporary Politics of the Mayan Region (3 credit hours)
- CPO 6091 Seminar in Comparative Politics (3 credit hours)
- ENC 5256 Gendered Rhetoric (3 credit hours)
- ENG 5018 Literary Criticism (3 credit hours)
- ENC 5425 Hypertext Theory and Design (3 credit hours)
- ENC 5427 Hypertext (3 credit hours)
- ENC 5705 Theory and Practice in Composition (3 credit hours)
- ENC 6261 Technical Writing, Theory and Practice (3 credit hours)
- ENC 5337 Modern Rhetorical Theory (3 credit hours)

- EUH 5285 Colloquium in Europe since World War II (3 credit hours)
- LAE 5415 Children's Literature in Elementary Education (3 credit hours)
- LAE 5465 Literature for Adolescents (3 credit hours)
- PHI 5627 Theoretical and Applied Ethics (3 credit hours)
- PHI 5665 Knowledge, Responsibility, and Society (3 credit hours)
- PHM 5035 Environmental Philosophy (3 credit hours)
- PUP 6324 Women and Public Policy (3 credit hours)
- SPN 5505 Spanish Peninsular Culture and Civilization (3 credit hours)
- SPN 5506 Spanish American Culture and Civilization (3 credit hours)
- SPW 6485 Contemporary Peninsular Literature (3 credit hours)
- SPW 6306 Spanish American Drama I (3 credit hours)
- SPW 6356 Spanish American Poetry (3 credit hours)
- SPW 6217 Spanish-American Prose I (3 credit hours)
- SPW 6218 Spanish American Prose II (3 credit hours)
- SPW 6725 The Generation of 1898 (3 credit hours)
- SPN 5502 Hispanic Culture of the United States (3 credit hours)
- THE 5307 Contemporary Theatre Practice (3 credit hours)
- WST 5347 Research Seminar in Gender Studies (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Relevant experiences with the humanities through course work at the undergraduate or graduate level or through professional experience working with cultural documents, analyses or performances will be evaluated by the graduate program director together with the certificate committee comprised of faculty from the participating departments. Meeting minimum UCF admission criteria does

not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Humanities Certificate, Contemporary | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                  |               | Jun 30 | Nov 15 | Mar 30 |
| International Applicants             |               |        |        |        |
| International Transfer Applicants    |               |        |        |        |

## CONTACT INFO

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Department of Liberal Studies  
PSY 220

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# Corrections Leadership Certificate

## PROGRAM DESCRIPTION

Corrections Leadership is a rapidly growing area of criminal justice. Private, state and federal agencies are seeking qualified managers and leaders to meet the changing needs of the twenty-first century. Leaders of correctional facilities and programs should be prepared to meet the challenges of changing policies and effectively deal with the management of budgets, grants, cooperative agreements and other inter-governmental projects.

The Graduate Certificate in Corrections Leadership is designed to address these needs, while providing a theoretical and practical knowledge base for correctional practitioners in Criminal Justice, Public Administration and Social Work.

## CURRICULUM

The Corrections Leadership certificate program consists of two required courses and two elective courses for a total of 12 credit hours.

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—6 Credit Hours

- CJC 5020 Foundations of Corrections (3 credit hours)
- CCJ 6217 Law and Social Control (3 credit hours)

#### Elective Courses—6 Credit Hours

Choose two of the following courses.

- CCJ 5467 Justice and Safety System Manpower (3 credit hours)
- CCJ 6106 Policy Analysis in Criminal Justice (3 credit hours)
- CCJ 6485 Issues in Justice Policy (3 credit hours)
- PAD 5041 Ethics and Values in Public Administration (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)
- SOW 5132 Diverse Client Populations (3 credit hours)
- SOW 5712 Interventions with Substance Abusers (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Corrections Leadership Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants           |               |        |        |        |
| International Transfer Applicants  |               |        |        |        |

## CONTACT INFO

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Associate Dean  
College Coordinator  
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Health and Public Affairs Graduate Office  
HPA 365

# Crime Analysis Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Crime Analysis provides information for data-driven management, investigative support and general crime analysis. The certificate addresses the needs of traditional criminal justice graduate students and nontraditional criminal justice practitioners. Theoretical aspects of crime pattern analysis are combined with practical applications to understand the development of data-driven crime prevention strategies. Crime pattern recognition and examination are emphasized.

Students learn to synthesize theory and application in order to produce the knowledge base necessary to fully utilize available technologies to develop and perform complex crime analysis and mapping; perform advanced spatial analyses of crime; and understand the essentials of creating customized crime analysis and mapping applications that are agency-specific.

## CURRICULUM

The Crime Analysis Graduate Certificate consists of three required courses, which are taught in a computer lab with a hands-on environment.

### Total Hours Required—9 Credit Hours Minimum

A student can only start the certificate in the fall semester and the courses must be taken in the following sequential order:



**Required Courses—9 Credit Hours**

- CCJ 5073 Data Management Systems for Crime Analysis – Fall semester (3 credit hours)
- CCJ 6079 Crime Mapping and Analysis in Criminal Justice – Spring semester (3 credit hours)
- CCJ 6077 Advanced Crime Mapping and Analysis in Criminal Justice – Summer semester (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Crime Analysis Certificate        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

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## Design for Usability Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Design for Usability educates students in the methods of user-centered design and usability engineering that can be used to assess and assure usability throughout a product, service or system development cycle. Students in

the certificate program will learn how to design products that are both ergonomically sound and user-friendly, as well as how to plan and conduct usability tests, analyze related data and use the results to improve the design of a product, service or system.

**CURRICULUM****Total Hours Required—12 Credit Hours Minimum****Required Courses—12 Credit Hours**

- EIN 5248C Ergonomics (3 credit hours)
- EIN 5251 Usability Engineering (3 credit hours)
- EIN 6258 Human Computer Interaction (3 credit hours)
- ESI 6247 Experimental Design and Taguchi Methods (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Design for Usability Certificate  | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

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# e-Learning Professional Development Certificate

## PROGRAM DESCRIPTION

An increasing number of industries, corporations, universities and K-12 schools are using telecommunications technologies to facilitate e-learning. Consequently, there is a growing need for highly skilled online distance educators and instructional designers to support e-learning across the nation and around the world. The e-Learning Professional Graduate Certificate prepares students to facilitate e-learning and generate high-quality e-learning materials in business and industry, higher education and K-12 grades.

## CURRICULUM

Recommended plan of study for earning the graduate certificate, noting when each course is offered, is provided on the Instructional Technology program website at <http://education.ucf.edu/insttech/planofstudy.cfm> under **Plans of Study** for graduate certificates.

## Total Hours Required—15 Credit Hours Minimum

### Required Courses—15 Credit Hours

- EME 6207 Multimedia Instructional Systems I (3 credit hours)
- EME 6613 Instructional System Design (3 credit hours)
- EME 6209 Multimedia Instructional Systems II (3 credit hours)
- EME 6457 Distance Education: Technology, Process and Product (3 credit hours)
- EME 6946 Practicum/Internship (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| e-Learning Professional Development Certificate | Fall Priority | Fall   | Spring | Summer |
|-------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                             |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                        |               |        |        |        |
| International Transfer Applicants               |               |        |        |        |

## CONTACT INFO

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Program Director  
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Department of Educational Research, Technology and Leadership  
ED 320R

# Electronic Circuits Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Electronic Circuits emphasizes modern design practice for power electronics, CMOS-integrated circuits, computer-aided circuit simulation, semiconductor device modeling, advanced analog and digital circuits, and advanced machinery. The power electronics courses cover principles of power electronics, power semiconductor devices, inverter topologies, switch-mode and resonant dc-to-dc converters, cyclo-converters, and advanced topics, such as soft-switching techniques, small-signal modeling of PWM and resonant converters, control techniques, power factor correction circuits. Conventional

analog circuits such as ideal and non-ideal OP-amps, active RC and switched-capacitor filters, non-linear and other functional circuits, frequency stability and compensation of OP-amps will also be included. For electronic circuit design, SPICE circuit simulation is an essential computer-aided design tool, and course work focuses on semiconductor device modeling for circuit simulation, illustration of semiconductor device physics, and design principles of advanced CMOS analog and digital circuits in mixed-signal integrated circuits. Extensive circuit simulation and design examples will be provided.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—6 Credit Hours

- EEL 5245C Power Electronics (3 credit hours)
- EEL 5378 CMOS Analog and Digital Circuit Design (3 credit hours)

#### Elective Courses—6 Credit Hours

Choose two courses from the following.

- EEL 5353 Semiconductor Device Modeling and Simulation (3 credit hours)
- EEL 5370 Operational Amplifiers (3 credit hours)
- EEL 6208 Advanced Machines (3 credit hours)
- EEL 6246 Power Electronics II (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Electronic Circuits Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 Department of Electrical Engineering  
 Engineering 407B

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# Emergency Management and Homeland Security Certificate

## PROGRAM DESCRIPTION

The graduate certificate in Emergency Management and Homeland Security provides an interdisciplinary graduate education for people engaged in or seeking professional careers in emergency management and homeland security with a focus on managing security threats or crises, natural or man-made threats, disasters, or emergencies through the coordination of public, private, and nonprofit sectors. In addition to covering the National Response Plan and recent trends in policy and practice in this field, the program will focus on the Florida emergency management and public safety systems.

## CURRICULUM

The certificate in Emergency Management and Homeland Security consists of 18 credit hours at the graduate level, including four required core courses and two electives (one from a planning emphasis and one from management/policy).

### Total Hours Required—18 Credit Hours Minimum

#### Required Courses—12 Credit Hours

All students must take the following courses.

- PAD 6399 Foundations of Emergency Management and Homeland Security (3 credit hours)

- PAD 6397 Managing Emergencies and Crises (3 credit hours)
- PAD 6716 Information Systems for Public Managers and Planners (3 credit hours)
- PAD 6825 Cross-Sectoral Governance (3 credit hours)

### Restricted Electives—6 Credit Hours

- Select one course from Group 1
- Select one course from Group 2

#### Group 1—Planning Emphasis

- PAD 5336 Introduction to Urban Planning (3 credit hours)
- PAD 5338 Land Use and Planning Law (3 credit hours)
- PAD 5356 Managing Community and Economic Development (3 credit hours)
- PAD 6353 Environmental Program Management Research (3 credit hours)
- CGN 6655 Regional Planning, Design, and Development (3 credit hours)

#### Group 2—Management and Policy Emphasis

- PAD 5142 Nonprofit Organization (3 credit hours)
- PAD 6037 Public Organizations Management (3 credit hours)
- PAD 6387 Transportation Policy (3 credit hours)
- CCJ 6021 Criminal Justice Responses to Terrorism (3 credit hours)
- HSA 5198 Health Care Decision Sciences and Knowledge Management (3 credit hours)
- INR 6136 Seminar in American Security Policy (3 credit hours)
- INR 6071 Seminar in Weapons of Mass Destruction (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Emergency Management and Homeland Security Certificate | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                    |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                               |               |        |        |        |
| International Transfer Applicants                      |               |        |        |        |

## CONTACT INFO

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 Department of Public Administration  
 Health & Public Affairs 2-Room 238G

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# Entrepreneurship Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Entrepreneurship is designed for those interested in launching new ventures or improving small businesses. The associated courses describe how to integrate product/service, marketing, management, and financial expertise to identify and articulate business opportunities. Each course balances theoretical insights and tactical knowledge reflecting current research and practice.

## CURRICULUM

### Total Hours Required—9 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- GEB 6115 Entrepreneurship (3 credit hours)
- MAN 6286 Strategic Innovation (3 credit hours)

- GEB 6116 Business Plan Formation (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission requirements include a completed application for the certificate program, documentation of prior business degrees or participation in a UCF graduate degree program, a 540 GMAT score (or commensurate GRE score), a response to an essay question, three letters of recommendation, and a current resume. Students who maintain a graduate standing in a UCF graduate degree program during the time required to complete a graduate certificate are eligible for this certificate.

| Entrepreneurship Certificate                                       | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                |               | Jun 15 | Nov 1  |        |
| The Fall 2008 application deadline has been extended to July 15th. |               |        |        |        |
| International Applicants                                           |               |        |        |        |
| International Transfer Applicants                                  |               |        |        |        |

## CONTACT INFO

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Department of Management  
Business Administration 331

# ESOL Endorsement K-12 Certificate

## PROGRAM DESCRIPTION

The number of nonnative students in the K-12 setting in the state of Florida as well as in most states is rapidly increasing. These students represent an array of different languages and cultural backgrounds. With these changes in K-12 schools comes more demand for qualified teachers who have the necessary knowledge and skills to work with English for Speakers of Other Languages (ESOL) students.

The ESOL Endorsement K-12 Graduate Certificate provides students with specialized knowledge and training in the five endorsement areas required for teachers in the state of Florida. The certificate focuses on applied linguistics, curriculum, testing, methodology and cross-cultural awareness. Successful completion of the certificate meets the requirements for the state of Florida add-on endorsement for ESOL K-12.

## CURRICULUM

No course substitutions are allowed. Upon successful completion, students will need to complete separate paperwork with the state of Florida for official recognition of this endorsement.

## Total Hours Required—15 Credit Hours Minimum

### Required Courses—15 Credit Hours

- TSL 5345 Methods of ESOL Teaching or TSL 6940 ESOL Practicum (3 credit hours)
- TSL 5525 ESOL Cultural Diversity or EDF 6886 Multicultural Education (3 credit hours)
- TSL 6142 Critical Approaches to ESOL (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)
- TSL 6440 Problems in Evaluation in ESOL (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and

official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| ESOL Endorsement K-12 Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Keith Folse PhD

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 Department of Modern Languages and Literatures  
 CNH 409

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# Family Nurse Practitioner Certificate

## PROGRAM DESCRIPTION

The Post-master's Family Nurse Practitioner Graduate Certificate prepares nurses who already have received a master's degree in nursing for positions as Family Nurse Practitioners. The program is 22 credits hours and includes up to 630 hours of clinical practice. There are 12 credit hours of prerequisite requirements and up to 3 credit hours of Advanced Practice Practicum NGR 6941, which may be waived for applicants who are licensed as Advanced Practice Nurses (APNs).

## CURRICULUM

The following graduate-level courses or equivalents are required prerequisites for the program.

### Prerequisites

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)

### Total Hours Required—22 Credit Hours Minimum

### Required for all Nurse Practitioner Graduate Certificates—7 Credit Hours

- NGR 6941 Advanced Practice Practicum (7 credit hours)

**Note:** Applicants who are licensed as Advanced Practice Nurses may have up to 3 credit hours of NGR 6941 Advanced Practice Practicum waived.

### Required Courses—15 Credit Hours

- NGR 6240 Adult I for APNs (3 credit hours)
- NGR 6240L Adult I Clinical for APNs (3 credit hours)
- NGR 6242 Adult II for APNs (2 credit hours)
- NGR 6331 Pediatrics I for APNs (2 credit hours)
- NGR 6331L Pediatrics I Clinical for APNs (2 credit hours)
- NGR 6334 Women's Health for APNs (2 credit hours)
- NGR 6482L Women's Health for APNs Clinical (1 credit hour)

## ADMISSIONS

Admission is open to those with a master's degree in nursing from a program accredited by NLNAC (National League for Nursing Accreditation Commission) or CCNE (Commission on Collegiate Nursing Education), licensure as a Registered Nurse in Florida and completion of an undergraduate health assessment course. Please submit all requested material by the established deadline(s). Applicants must apply online.

Admission to the program is competitive on a space-available basis. The following information must be submitted to the UCF College of Graduate Studies in order to be considered for the Family Nurse Practitioner Graduate Certificate program:

- Official transcripts of BSN and master's degrees.
- Three letters of recommendation from individuals who can judge abilities for Advanced Practice Nursing, preferably from nurse instructors, nurse employers, or nurses with advanced degrees.
- Personal statement describing interest in completing certificate program.
- UCF Health Form (Upon acceptance to the program, a College of Nursing Health Form will be required.)
- Resume (no longer than two pages).
- Copy of RN License.
- A VECHS/FDLE/FBI finger printing and certified background check must be submitted to the College of Nursing upon acceptance to the program.

| Family Nurse Practitioner Certificate | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                   |               | Apr 15 | Nov 14 |        |
| International Applicants              |               |        |        |        |
| International Transfer Applicants     |               |        |        |        |

## CONTACT INFO

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 College of Nursing  
 Health and Public Affairs 1 220 B

# Foreign Language Education Certificate

## PROGRAM DESCRIPTION

The Foreign Language Education Graduate Certificate program is designed for in-service foreign language educators who seek additional expertise in their discipline as well as for in-service foreign language teachers for recertification.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- FLE 6695 Professional Development in Foreign Language Education\*\* (3 credit hours)
- FLE 6705 Testing and Evaluation in Foreign Language Education (3 credit hours)
- FLE 6455 Curriculum and Materials in Foreign Language Teaching (3 credit hours)

#### Elective Courses—6 Credit Hours

##### Choose two courses with adviser approval.

- FLE 5335 Foreign Language Methods at the Elementary Level (3 credit hours)
- FLE 5937 Foreign Language Methods at the Secondary Level\* (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- Select one 5000-level SPN course\* (3 credit hours)

\* Near native proficiency in Spanish is required

\*\* Online delivery course

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must possess proficiency in English and the target language. Applicants must complete FLE 4333 Foreign Language Teaching in the Secondary School or an equivalent secondary methods course before acceptance into the certificate program.

| Foreign Language Education Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                    |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants               |               |        |        |        |
| International Transfer Applicants      |               |        |        |        |

## CONTACT INFO

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Department of Teaching and Learning Principles  
Education 220-C

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# Gender Studies Certificate

## PROGRAM DESCRIPTION

Gender Studies is an interdisciplinary graduate certificate program coordinated by the Women's Studies Program. The Gender Studies program provides a foundation in feminist theory and research, focusing on the study of gender and its relationship to cultural, social and political institutions and systems of meaning. The program is open to both degree-seeking and nondegree-seeking graduate students. Most courses are offered at times that will accommodate part-time and working students.

## CURRICULUM

The Graduate Certificate in Gender Studies includes courses from both the humanities and the social sciences. Entry to CLP 6459, ENG 6814 Gender

in Texts and Technology and SOW 5625 may be restricted. Consult with the instructor.

## Total Hours Required—12 Credit Hours Minimum

### Required Course—3 Credit Hours

Select one of the following courses.

- WST 5601 Theories in Gender Studies (3 credit hours)
- LIT 5556 Advanced Feminist Theories (3 credit hours)

### Elective Courses—9 Credit Hours

- AMH 5566 Colloquium: Women in American History (3 credit hours)
- ARH 5978 Advanced Seminar in Art History: Contemporary Women Artists (3 credit hours)
- CLP 6459C Human Sexuality, Marriage, and Sex Therapies (3 credit hours)
- ENC 5937 Gendered Rhetoric (3 credit hours)
- ENL 5937 Renaissance Women (3 credit hours)
- ENL 6217 Gender and the Medieval Text (3 credit hours)
- EUH 5938 Women and Gender European History (3 credit hours)
- LIT 5097 Studies in Contemporary Fiction\* (3 credit hours)
- LIT 5387 Captives, Housewives, and Coquettes (3 credit hours)
- LIT 5389 Studies in Gender and Fiction Writing (3 credit hours)
- PUP 6324 Women and Public Policy (3 credit hours)
- SOW 5625 Social Work with Women (3 credit hours)
- SYD 6809 Seminar in Gender Issues (3 credit hours)
- SYP 5562 Seminar on Domestic Violence (3 credit hours)
- SYP 6563 Reactions to Domestic Violence (3 credit hours)
- SYP 6561 Child Abuse in Society\* (3 credit hours)
- SYP 6565 Elder Abuse and Neglect\* (3 credit hours)
- WST 5937 Research Seminar in Gender Studies (3 credit hours)

\* Students may include only one of these courses (marked with an asterisk) toward meeting the certificate requirements.



## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Gender Studies Certificate        | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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Department of Women's Studies  
Colbourn Hall 201H

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# Gifted Education Certificate

## PROGRAM DESCRIPTION

The Gifted Education Graduate Certificate prepares educators to meet the learning needs of diverse gifted and talented students while providing an accelerated and enriched curriculum. Completion of the certificate leads to an endorsement to the Florida Teaching Certificate in Gifted Education. The course work for the certificate is based on the standards of NCATE (National Association Council for Gifted Children and the Council for Exceptional

Children), a broad conception of giftedness and the differential learning needs of diverse populations of gifted students.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

### Required Courses—15 Credit Hours

- EGI 6051 Understanding the Gifted/Talented Students (3 credit hours)
- EGI 6245 Program Planning and Methodology for Gifted/Talented Students (3 credit hours)
- EGI 6246 Education of Special Populations of Gifted Students (3 credit hours)
- SDS 6426 Guidance and Counseling of Gifted/Talented Individuals (3 credit hours)
- EGI 6305 Theory and Development of Creativity (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Gifted Education Certificate      | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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Department of Educational Studies  
Education 223M

# Global and Comparative Education Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Global and Comparative Education offers additional education and training to students and education professionals working in international and cross-cultural settings, bilateral and multilateral organizations, and state and federal government departments. The certificate is comprised of five graduate courses addressing the theoretical, methodological, critical and practical issues associated with education around the world, through both macro and micro cultural perspectives.

## CURRICULUM

Students in the Graduate Certificate in Global and Comparative Education program must complete five courses (15 credit hours total). While students may choose between either EDF 6865 (language) or EDF 6707 (gender), all other courses are required as listed. Courses may be taken out-of-sequence.

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—15 Credit Hours

- EDF 6809 Introduction to Comparative and International Education (3 credit hours)
- SSE 5391 Global Education: Theory and Practice (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

#### Choose one of these two courses.

- EDF 6865 Policy and Practice of Language in International Education (3 credit hours)
- EDF 6707 Gender and Education: Cross-Cultural Perspectives (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants

must apply online. All requested materials must be submitted by the established deadline(s).

| Global and Comparative Education Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                          |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                     |               |        |        |        |
| International Transfer Applicants            |               |        |        |        |

## CONTACT INFO

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 Office of Educational Studies  
 ED 220N

# Health and Wellness Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Health and Wellness is designed to prepare educators in teaching health, fitness and wellness principles including information about risk behaviors and choices made by adolescents. In addition, the courses in the certificate program comprise one-half of the course work needed for a health education certification in the state of Florida. The health certificate is needed by teachers who teach Life Management Skills, a required course in Florida high schools. These courses may also be of interest to students and community members from many different disciplines concerned with youth and adolescent development.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

**Required Courses—15 Credit Hours**

- HSC 5317 Health Methods: Teaching Strategies and Interventions (3 credit hours)
- PET 5355 Exercise and Health (3 credit hours)
- PET 6088 Wellness Development in Children (3 credit hours)
- PET 6089 Personal and Organizational Wellness (3 credit hours)
- PET 6505 Wellness Technology in Physical Education (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Health and Wellness Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

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 Teaching and Learning Principles  
 ED 320P

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**HVAC Engineering Certificate**

**PROGRAM DESCRIPTION**

The Graduate Certificate in HVAC Engineering is designed to provide students with a fundamental understanding of the principles behind HVAC engineering and the applied aspects of HVAC engineering, including analysis and design of

practical systems. Students will participate in laboratory and hands-on experiences.

**CURRICULUM**

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—12 Credit Hours**

- EML 5066 Computational Methods in Mechanical, Materials, and Aerospace Engineering (3 credit hours)
- EML 5152 Intermediate Heat Transfer (3 credit hours)
- EML 5606 HVAC Systems Engineering (3 credit hours)
- EML 5605 Applied HVAC Engineering (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| HVAC Engineering Certificate      | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

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 Program Director  
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 Mechanical, Materials and Aerospace Engineering  
 Engineering 313

# Industrial Ergonomics and Safety Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Industrial Ergonomics and Safety prepares students in the design and implementation of an effective human engineering/ergonomics effort within an occupational setting. Because of increasing costs due to injuries, on-the-job accidents, and rehabilitation, interest in injury and accident prevention has increased dramatically. Designing workplaces to accommodate human workers is a key to improving worker safety and occupational health.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—15 Credit Hours

- EIN 5248C Ergonomics (3 credit hours)
- EIN 6215 System Safety Engineering and Management (3 credit hours)
- EIN 6279C Biomechanics (3 credit hours)
- EIN 6264C Industrial Hygiene (3 credit hours)
- EIN 6270C Work Physiology (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Industrial Ergonomics and Safety Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                          |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                     |               |        |        |        |
| International Transfer Applicants            |               |        |        |        |

## CONTACT INFO

Charles H. Reilly PhD  
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Program Director  
gradiems@mail.ucf.edu  
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Industrial Engineering and Management Systems  
Engineering II, Room 312C

# Initial Teacher Professional Preparation Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Initial Teacher Professional Preparation is designed for students who have secured a teaching position, plan to obtain a teaching position, or have a temporary teaching certificate. The certificate prepares candidates to meet the State of Florida Department of Education requirements through a sequence of professional core courses. The goal of the certificate is to enable educators to have successful teaching experiences in grades 6-12 classrooms.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—12 Credit Hours

**All of the required courses are available online and must be taken at UCF.**

- EDG 6415 Principles of Instruction and Classroom Management (3 credit hours)
- EDF 6237 Principles of Learning and Introduction to Classroom Assessment (3 credit hours)
- EDF 6727 Critical Analysis of Social, Ethical, Legal and Safety Issues Related to Education (3 credit hours)
- RED 5147 Developmental Reading (3 credit hours)

### Co-requisite—3 Credit Hours

Special Methods: Course selection depends on the students intended certification area. Equivalent courses from other accredited Florida State Institutions may be used to satisfy this requirement at the discretion of the Program Director. Students are advised to obtain permission in advance of registering for these courses.

- Art Education: ARE 5359 Teaching Art K-12 (4 credit hours)
- English Language Arts: LAE 5346 Methods of Teaching English Language Arts (3 credit hours)
- Math Education (Grades 5-9): MAE 5327 Teaching Middle School Mathematics (3 credit hours)
- Math Education (Grades 6-12): MAE 5336 Current Methods in Secondary School Mathematics (3 credit hours)
- Music Education: MUE 5348C K-12 Music Methods (4 credit hours)
- Science Education (Grades 5-9): SCE 5325 Teaching Middle School Science (3 credit hours)
- Science Education (Grades 6-12): SCE 5337 Issues and Methods in Secondary School Science Education (3 credit hours)
- Social Science Education: SSE 5790 Inquiry and Instructional Analysis in Social Science Education (3 credit hours)
- Business Education: BTE 6935 Seminar in Business Education (3 credit hours)

### ADMISSIONS

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Initial Teacher Professional Preparation Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                  |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                             |               |        |        |        |

| Initial Teacher Professional Preparation Certificate | Fall Priority | Fall | Spring | Summer |
|------------------------------------------------------|---------------|------|--------|--------|
| International Transfer Applicants                    |               |      |        |        |

### CONTACT INFO

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 Department of Educational Studies  
 Education 206E

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# Instructional Design for Simulations Certificate

### PROGRAM DESCRIPTION

Training and educational programs are now incorporating stand-alone and PC-based simulations and instructional (video) games to enhance human motivation and performance. The result has been a growing demand for simulation and game-based training and instructional systems in corporate, government and education sectors. The Graduate Certificate in Instructional Design for Simulations provides an interdisciplinary approach to prepare educators, instructional designers, and human resource and training specialists in corporate, industry and educational settings to work with engineers, graphic artists, computer programmers and game developers to design training and instructional systems, focusing on the pedagogical aspects of stand-alone and PC-based desktop training and educational simulations and games.

### CURRICULUM

Recommended plan of study for earning the graduate certificate, noting when each course is offered, is provided on the Instructional Technology program website at <http://education.ucf.edu/>

insttech/planofstudy.cfm under **Plans of Study** for graduate certificates.

### **Total Hours Required—15 Credit Hours Minimum**

#### **Required Courses—15 Credit Hours**

- EME 6613 Instructional System Design (3 credit hours)
- FIL 5810 Transmedia Story Creation (3 credit hours)
- IDS 5717C Introduction to Modeling and Simulation (3 credit hours)
- EME 6601 Instructional Simulation Design for Training and Education (3 credit hours)
- EME 6614 Instructional Game Design for Training and Education (3 credit hours)

### **ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| <b>Instructional Design for Simulations Certificate</b> | <b>Fall Priority</b> | <b>Fall</b> | <b>Spring</b> | <b>Summer</b> |
|---------------------------------------------------------|----------------------|-------------|---------------|---------------|
| Domestic Applicants                                     |                      | Jul 15      | Dec 1         | Apr 15        |
| International Applicants                                |                      |             |               |               |
| International Transfer Applicants                       |                      |             |               |               |

### **CONTACT INFO**

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 Department of Education Research, Technology and Leadership  
 ED 320-C

# **Instructional/ Educational Technology Certificate**

## **PROGRAM DESCRIPTION**

The Graduate Certificate in Instructional/Educational Technology provides an opportunity for study and professional training and development of the leadership skills necessary to become educational technology specialists in K-12 schools. The certificate requires substantial independent thinking and emphasis is placed on the cultivation of scholarly attitudes and methods, while assisting students in meeting the requirements for the State of Florida Teacher Certification. In addition, students will learn the subject matter needed to meet the National Educational Technology Standards for Teachers developed by the International Society for Technology in Education (ISTE), which is being adopted by the National Council for Accreditation of Teacher Education (NCATE).

## **CURRICULUM**

Several courses are taught online and other courses will be offered on a flexible schedule at the Orlando campus.

### **Total Hours Required—15 Credit Hours Minimum**

#### **Required Courses—15 Credit Hours**

- EME 5050 Fundamentals of Technology for Educators (3 credit hours)
- EME 5053 Electronic Resources for Education (3 credit hours)
- EME 6405 Application Software for Educational Settings (3 credit hours)
- EME 6507 Multimedia in the Classroom (3 credit hours)
- EME 6602 Integrating Technology into the Curriculum (3 credit hours)

### **ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and

official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Instructional/<br>Educational/<br>Technology<br>Certificate | Fall<br>Priority | Fall   | Spring | Summer |
|-------------------------------------------------------------|------------------|--------|--------|--------|
| Domestic Applicants                                         |                  | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                                    |                  |        |        |        |
| International Transfer Applicants                           |                  |        |        |        |

## CONTACT INFO

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 Telephone 407-823-0228  
 Department of Educational Research, Technology and Leadership  
 College of Education, 320L

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# Juvenile Justice Leadership Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Juvenile Justice Leadership is designed to provide a theoretical and practical knowledge base for juvenile justice executives in the areas of criminal justice, public administration and social work. The juvenile justice system, long understaffed, is facing the continuing problem of increased juvenile crime, high levels of juvenile drug and substance abuse, and debatable programs to rehabilitate delinquent children. Juvenile Justice Leadership is one of the fastest growing career fields in Criminal Justice.

The successful completion of this certificate would improve consideration for admission as a degree-seeking student in the master's program in Criminal Justice.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- CJJ 6020 The Juvenile Justice System (3 credit hours)
- PAD 6037 Public Organization Management (3 credit hours)
- SOW 5655 Child Abuse: Treatment and Prevention (3 credit hours)

#### Elective Course—3 Credit Hours

##### Choose one of the following courses.

- CCJ 5456 The Administration of Justice (3 credit hours)
- CCJ 5015 The Nature of Crime (3 credit hours)
- CCJ 5073 Data Management Systems for Crime Analysis (offered fall term only) (3 credit hours)
- PAD 6053 Public Administrators in the Governance Process (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- SOW 5712 Interventions with Substance Abusers (3 credit hours)
- SYP 6561 Child Abuse in Society (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Juvenile Justice Leadership Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                     |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                |               |        |        |        |
| International Transfer Applicants       |               |        |        |        |

## CONTACT INFO

Stephen Holmes PhD  
Associate Dean  
College Coordinator  
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HPA 365

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# K-8 Mathematics and Science Education Certificate

## PROGRAM DESCRIPTION

The K-8 Mathematics and Science Education Graduate Certificate is for teachers with at least three years of experience who instruct students in mathematics or science in grade levels K-8. The program is designed to improve the quality of teaching and learning in mathematics and science in grades K-8. Graduates of the K-8 Mathematics and Science program form a strong infrastructure of teachers focusing on long-term impact in schools while helping students succeed in mathematics and science classrooms.

The K-8 Mathematics and Science Education certificate is dedicated to providing all graduates with exceptional pedagogical and subject matter knowledge and skills by focusing on research-based, state-of-the-art best practices in mathematics and science education.

### Other K-8 Mathematics and Science Programs

A Master of Education in K-8 Mathematics and Science Education is available, and the described graduate certificate can be transferred in its entirety into the master's program.

The K-8 Mathematics and Science Education master's program is closely allied with both the Curriculum and Instruction (EdS/EdD) and PhD in Education programs. Graduates of the K-8 Mathematics and Science master's program have been very successful in completing advanced graduate degrees.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- SCE 5836 Space Science for Educators (3 credit hours)
- IDS 6934 Using Technology in Mathematics and Science (3 credit hours)
- MAE 6899 Seminar in Teaching Mathematics (3 credit hours)
- IDS 6937 Reflecting on the Teaching of Mathematics and Science (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to those preferably with three years of experience teaching mathematics and/or science in one of the grades K-8.

| K-8 Mathematics and Science Education Certificate | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                          |               |        |        |        |
| International Transfer Applicants                 |               |        |        |        |

## CONTACT INFO

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ED 123F



# Marriage and Family Therapy Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Marriage and Family Therapy is designed to provide additional training for counselors and therapists working with families, couples and children. The certificate requires the completion of five graduate courses addressing family systems, working with couples and family therapy theory, and counseling techniques. For many counselors, this certificate will fulfill the academic requirements for Florida Licensure as a Marriage and Family Therapist. Applicants should contact the State Licensure Board to verify the courses they need.

Master's students in the School of Social Work can also obtain the Graduate Certificate in Marriage and Family Therapy by taking the required courses for Social Work students, which include content about family theory and assessment and counseling with families as well as a field component. Information about the Social Work courses and field courses can be obtained through the School of Social Work.

## CURRICULUM

The Marriage and Family Therapy Graduate Certificate requires 15 credit hours. The Practicum in Counselor Education MHS 6803 and the Counseling Internship MHS 6830 must be taken in separate semesters and combined must amount to at least 180 hours of direct client contact including couples, families, unmarried dyads and individuals. The Developmental Process of the Resilient Family MHS 6433 is recommended as an additional course. For Social Work students, the certificate requires 17 credit hours and course work specific to Social Work.

## Total Hours Required—15 -17 Credit Hours Minimum

### Required Courses—15 Credit Hours

- MHS 6430 Family Counseling I (3 credit hours)
- MHS 6431 Family Counseling II (3 credit hours)
- MHS 6440 Couples Counseling (3 credit hours)
- MHS 6803 Practicum in Counselor Education (3 credit hours)

- MHS 6830 Counseling Internship (3 credit hours)

### Required Courses for Social Work Students—17 Credit Hours

- SOW 5106 Human Behavior and Social Environment II: Social Systems (3 credit hours)
- SOW 6612 Clinical Practice with Families (3 credit hours)
- SOW 6535 Clinical Field Education I (3 credit hours)
- SOW 6548 Clinical Field Integrative Seminar I (1 credit hour)
- SOW 6536 Clinical Field Education II (3 credit hours)
- SOW 6549 Clinical Field Integrative Seminar II (1 credit hour)
- MHS 6440 Couples Counseling (College of Education) (3 credit hours)

## ADMISSIONS

Admission is open only to those in graduate Counseling, Psychology or Social Work programs at UCF. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| Marriage and Family Therapy Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                     |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                |               |        |        |        |
| International Transfer Applicants       |               |        |        |        |

## CONTACT INFO

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 Department of Teaching and Learning Principles  
 ED 123F

# Maya Studies Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Maya Studies focuses on an area of local, national and international interest—the ancient and contemporary peoples of Mexico, Guatemala and Belize. The certificate is interdisciplinary with cognate offerings from History, Political Science and Spanish. The program is further strengthened by a community partnership with the Orlando Museum of Art. The Maya Studies Graduate Certificate provides detailed and specialized knowledge of the ancient and contemporary Maya through a series of well-integrated courses.

## CURRICULUM

Students must take two required courses and three additional courses from the available elective courses. Before taking an elective course, students must have taken at least one of the required courses or must have the instructor's consent to take the elective course.

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—6 Credit Hours

- ANG 6168 The Ancient Maya (3 credit hours)
- ANG 6324 Contemporary Maya (3 credit hours)

#### Elective Courses—9 Credit Hours

Choose three courses from the following list or another course related to Maya Studies and approved by the Graduate Certificate faculty.

- ANG 5166 Problems in Maya Studies (3 credit hours)
- ANG 5167 Maya Hieroglyphs (3 credit hours)
- ANG 5165 Maya Field Research (3 credit hours)
- ANG 5228 Maya Iconography (3 credit hours)
- ANG 6110 Archaeological Theory and Method (3 credit hours)
- CPO 5334 Contemporary Politics of the Mayan Region (3 credit hours)
- LAH 5937 Latin America: The Mayas (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Maya Studies Certificate          | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 |        | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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Department of Sociology and Anthropology  
Howard Phillips Hall 403

# Medical Speech- Language Pathology Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Medical Speech-Language Pathology is designed for practicing speech-language pathologists working in hospital, nursing home or rehabilitation center settings. The certificate provides the advanced knowledge and skills necessary to evaluate and treat individuals with medically based communication disorders.

## CURRICULUM

If not previously completed, students may be advised to take SPA 6410 Aphasia and Related Disorders before enrolling in SPA 6417 Cognitive/Communication Disorders.

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—9 Credit Hours**

- SPA 6245 Communication Disorders in Cleft Palate-Velopharyngeal Dysfunction (3 credit hours)
- SPA 6417 Cognitive/Communication Disorders (3 credit hours)
- SPA 6567 Feeding and Swallowing Disorders (3 credit hours)

**Elective Course—3 Credit Hours**

One elective course in Communication Sciences and Disorders or a related discipline is required and should be selected in consultation with the graduate program director and academic adviser.

**ADMISSIONS**

Admission is open to those with a master’s degree from a regionally accredited institution. Students cannot count any courses from a previous graduate degree program or certificate toward the completion of this certificate. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please be sure to submit all requested material by the established deadline(s).

| Medical Speech-Language Pathology Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                           |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                      |               |        |        |        |
| International Transfer Applicants             |               |        |        |        |

**CONTACT INFO**

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 Department of Communicative Disorders  
 Health and Public Affairs II 101R

**Multicultural/  
 Multilingual Speech-  
 Language Pathology  
 Certificate**

**PROGRAM DESCRIPTION**

As the demographic profile of the U.S. population becomes more diverse, speech-language pathologists must become more knowledgeable and responsive to the communication needs of children and adults in our community. The Graduate Certificate in Multicultural/Multilingual Speech-Language Pathology provides prospective and practicing speech-language pathologists with the knowledge and skills to evaluate and treat individuals with communication disorders from culturally and linguistically diverse backgrounds

**CURRICULUM**

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—9 Credit Hours**

- SPA 5473 Multicultural Aspects of Communication Differences and Disorders (3 credit hours)
- SPA 6474 Assessment and Management of Culturally and Linguistically Diverse Populations (3 credit hours)
- SPA 6475 Management of Culturally and Linguistically Diverse Populations (3 credit hours)

**Elective Course—3 Credit Hours**

One elective is required in Communication Sciences and Disorders or a related discipline, such as Anthropology, Communication, Educational Foundations, Exceptional Education, Counselor Education, Early Childhood Education, Sociology, Social Work, Foreign Languages, and Teaching English to Speakers of Other Languages (TESOL). The elective course must be selected in consultation with the graduate program director and academic adviser.

## ADMISSIONS

Admission is open to those with a master's degree from a regionally accredited institution. Students cannot count any courses from a previous graduate degree program or certificate toward the completion of this certificate. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please be sure to submit all requested material by the established deadline(s).

| Multicultural/<br>Multilingual<br>Speech-<br>Language<br>Pathology<br>Certificate | Fall<br>Priority | Fall   | Spring | Summer |
|-----------------------------------------------------------------------------------|------------------|--------|--------|--------|
| Domestic Applicants                                                               |                  | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                                                          |                  |        |        |        |
| International Transfer Applicants                                                 |                  |        |        |        |

## CONTACT INFO

Martine Vanryckeghem PhD  
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Program Director  
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Department of Communicative Disorders  
Health and Public Affairs II 101R

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# Nonprofit Management Certificate

Out of State Nonprofit Management Certificate  
Cohort

## PROGRAM DESCRIPTION

The Graduate Certificate in Nonprofit Management is designed to prepare those individuals currently working in the nonprofit sector with additional training and skills. The program is delivered

completely online and offers specialized, graduate-level knowledge in nonprofit management, resource development, strategic planning, volunteerism, and program evaluation. The certificate supports those currently working in the nonprofit sector or those looking for advancement in the nonprofit sector or in organizations that partner with the nonprofit sector. The Out-of-State Graduate Certificate in Nonprofit Management Cohort Track is designed specifically for students who are not Florida residents and who reside outside of the state of Florida. The certificate is delivered completely online and the curriculum is identical to the resident program. Students in the cohort program pay less than half of the regular out-of-state tuition.

## CURRICULUM

### Total Hours Required—18 Credit Hours Minimum

### Required Courses—15 Credit Hours

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

### Elective Course—3 Credit Hours

Choose one course below or see the graduate program director.

- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- SOW 6383 Social Work Administration (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Nonprofit Management Certificate  | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- SOW 6383 Social Work Administration (3 credit hours)

### **Total Hours Required—18 Credit Hours Minimum**

### **CONTACT INFO**

Mary Ann Feldheim PhD  
Associate Professor  
Program Director  
mfeldhei@mail.ucf.edu  
Telephone 407-823-2604  
Department of Public Administration  
Health and Public Affairs II 238

### **Required Courses—15 Credit Hours**

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

## **Out of State Nonprofit Management Certificate Cohort**

### **CURRICULUM**

### **Total Hours Required—18 Credit Hours Minimum**

#### **Required Courses—15 Credit Hours**

- PAD 5145 Volunteerism in Nonprofit Management (3 credit hours)
- PAD 5146 Nonprofit Resource Development (3 credit hours)
- PAD 6142 Nonprofit Organizations (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

#### **Elective Course—3 Credit Hours**

Choose one course below or see the graduate program director.

#### **Elective Course—3 Credit Hours**

Choose one course below or see the graduate program director.

- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6149 Nonprofit Administration (3 credit hours)
- SOW 6383 Social Work Administration (3 credit hours)

### **ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

The admission standards and degree requirements for the Nonprofit Management cohort track are the same as the traditional program. Students interested in the Out-of-State Graduate Certificate in Nonprofit Management cohort track should contact the Department of Public Administration at [nonprofit@mail.ucf.edu](mailto:nonprofit@mail.ucf.edu).

| Out of State Nonprofit Management Certificate Cohort | Fall Priority | Fall   | Spring | Summer |
|------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                  |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                             |               |        |        |        |
| International Transfer Applicants                    |               |        |        |        |

## CONTACT INFO

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Program Director  
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Department of Public Administration  
Health and Public Affairs II 238

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# Nursing Education Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Nursing Education is designed to prepare nurses and other health care professionals to teach in professional health care education programs, health care agencies and the community. The certificate program can be completed entirely online.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- NGR 5715 Instructional Technology Resources for Health Professional Education (3 credit hours)
- NGR 5791 Teaching Strategies for Health Professionals (3 credit hours)

- NGR 6710 Curriculum Development in Nursing Education (3 credit hours)

### Elective Course—3 Credit Hours

Students must take at least one of the following courses.

- NGR 5871 Healthcare Informatics (3 credit hours)
- NGR 6714 Clinical Teaching Strategies for Nursing Education\* (3 credit hours) (EDF 6432 Measurement and Evaluation in Education (3 credit hours)
- Other EDG, EDF, or NGR elective approved by the graduate program director (3 credit hours)

\*Depending on clinical location, NGR 6714 Clinical Teaching Strategies for Nursing Education may require VECHS/FDLE/FBI finger printing and a certified background check submitted to the College of Nursing.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants must submit the following to the UCF College of Graduate Studies to be considered for enrollment: an application to the Nursing Education certificate program, official transcripts, resume, and a goal statement related to nursing education.

| Nursing Education Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Nov 14 | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

Judith Ruland PhD  
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 Program Director  
 ucfnurse@mail.ucf.edu  
 Telephone 407-823-2744  
 College of Nursing  
 HPA 218

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**Online Educational  
 Media Certificate**

**PROGRAM DESCRIPTION**

The Graduate Certificate in Online Educational Media (Ed Media) provides an opportunity for teachers and library media specialists to become proficient in the basic competencies and skills needed to administer and manage an effective public school library media program and to develop leadership skills. Students will acquire the subject matter needed to meet the professional educational media standards developed by the Florida Department of Education (DOE), the American Library Association (ALA)/American Association of School Librarians (AASL), and the National Council for Accreditation of Teacher Education (NCATE). All courses in the certificate are delivered completely online in a web-based format.

The courses in the certificate were for untrained teachers and library media specialists who are obtaining school library media certification by passing the Educational Media certification examination and who are seeking the academic training needed to successfully perform the duties of PK-12 public school media specialists.

**CURRICULUM**

Courses taken in the Online Educational Media Graduate Certificate Program with a grade of “B” or better will transfer into the Instructional Technology/Media: Educational Media online Master of Education program.

**Total Hours Required—12 Credit  
 Hours Minimum**

**Required Courses—6 Credit Hours**

- EME 6105 Collection Development Policies and Procedures (3 credit hours)
- EME 6605 Role of the Media Specialist in Curriculum and Instruction (3 credit hours)

**Elective Courses—6 Credit Hours**

Select two courses from the following list.

- EME 6706 Administrative Principles in Media Centers (3 credit hours)
- EME 6805 Organization of Media and Information (classification/cataloging) (3 credit hours)
- EME 6807 Information Sources and Services (reference) (3 credit hours)
- EME 5225 Media for Children and Young Adults (3 credit hours)
- EME 5051 Technologies of Instruction and Information Management (3 credit hours)
- EME 5208 Production Techniques for Instructional Settings (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Online Educational Media Certificate                             | Fall Priority | Fall | Spring | Summer |
|------------------------------------------------------------------|---------------|------|--------|--------|
| Domestic Applicants                                              |               |      |        |        |
| Late applications will be considered on a space-available basis. |               |      |        |        |
| International Applicants                                         |               |      |        |        |
| International Transfer Applicants                                |               |      |        |        |

**CONTACT INFO**

Amy Scheick PhD  
 Program Director  
 ascheick@mail.ucf.edu  
 Telephone 407-823-0228  
 Department of Educational Research, Technology and Leadership  
 College of Education, 320L

# Pediatric Nurse Practitioner Certificate

## PROGRAM DESCRIPTION

The Post-master's Pediatric Nurse Practitioner Graduate Certificate is designed to prepare nurses who have a master's degree in nursing for positions as primary care Pediatric Nurse Practitioners. The program is 20 credits hours and includes up to 630 hours of clinical practice. There are 12 hours of prerequisite requirements and up to 3 credit hours of Advanced Practice Practicum NGR 6941 may be waived for applicants who are Advanced Practice Nurses (APNs).

## CURRICULUM

### Prerequisites

The following graduate-level courses or equivalents are required prerequisites for the program.

- NGR 5003 Advanced Health Assessment and Diagnostic Reasoning (2 credit hours)
- NGR 5004L Advanced Health Assessment and Diagnostic Reasoning Clinical (1 credit hour)
- NGR 5141 Pathophysiological Bases for Advanced Nursing Practice (3 credit hours)
- NGR 5638 Health Promotion (3 credit hours)
- NGR 6192 Pharmacology for Advanced Nursing Practice (3 credit hours)

### Total Hours Required—20 Credit Hours Minimum

### Required for all Nurse Practitioner Graduate Certificates—7 Credit Hours

- NGR 6941 Advanced Practice Practicum (7 credit hours)

**Note:** Applicants who are licensed as Advanced Practice Nurses may have up to 3 credit hours of NGR 6941 Advanced Practice Practicum waived.

### Required Courses—13 Credit Hours

- NGR 6331 Pediatrics I for APNs (2 credit hours)
- NGR 6331L Pediatrics I Clinical for APNs (2 credit hours)

- NGR 6332 Pediatrics II for APNs (3 credit hours)
- NGR 6332L Pediatrics II Clinical for APNs (3 credit hours)
- NGR 6335 Focused Pediatrics for APNs (2 credit hours)
- NGR 6335L Focused Pediatrics Clinical for APNs (1 credit hour)

## ADMISSIONS

Admission is open to those with a master's degree in nursing from a program accredited by NLNAC (National League for Nursing Accreditation Commission) or CCNE (Commission on Collegiate Nursing Education), licensure as a Registered Nurse in Florida and completion of an undergraduate health assessment course. Please submit all requested material by the established deadline(s). Applicants must apply online.

Admission to the program is competitive on a space-available basis. The following information must be submitted to the UCF College of Graduate Studies in order to be considered for the Pediatric Nurse Practitioner:

- Official transcripts of BSN and master's degrees.
- Two letters of recommendation from individuals who can judge abilities for Advanced Practice Nursing, preferably from nurse instructors, nurse employers, or nurses with advanced degrees.
- Personal statement describing interest in completing certificate program.
- UCF Health Form (Upon acceptance to the program, a College of Nursing Health Form will be required.)
- Resume (no longer than two pages).
- Copy of RN License.
- A VECHS/FDLE/FBI finger printing and certified background check must be submitted to the College of Nursing upon acceptance to the program.



| Pediatric Nurse Practitioner Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                      |               | Apr 15 | Nov 14 |        |
| International Applicants                 |               |        |        |        |
| International Transfer Applicants        |               |        |        |        |

## CONTACT INFO

Patricia Robinson PhD  
 Assistant Professor  
 Program Director  
 psrobins@mail.ucf.edu  
 Telephone 407-823-6274  
 School of Nursing  
 HPA 214

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# Play Therapy Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Play Therapy provides advanced training to students in counselor education and professional school and mental health counselors who seek to improve their counseling skills. All school counselors and a large number of mental health counselors provide counseling services to children and adolescents. Thus, many students and counselors may find play therapy useful for their work. Students who complete the certificate will meet the educational requirements for national certification in play therapy.

Please note the Play Therapy Graduate Certificate does not certify individuals in Play Therapy. It provides the educational play courses to complete a Certificate in Play Therapy. One can list this credential as Graduate Certificate in Play Therapy.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

### Required Courses—12 Credit Hours

- MHS 6421 Foundations of Play Therapy and Play Process (3 credit hours)
- MHS 6422 Theories of Play Therapy and Play Process (3 credit hours)
- MHS 6403 Techniques of Play Therapy and Expressive Arts (3 credit hours)
- MHS 6424 Applications of Play Therapy with Special Populations (3 credit hours)

### Prerequisites

- SDS 6411 Counseling with Children and Adolescents (CLP 6460C Introduction to Child, Adolescent, and Family Therapies or equivalent course, 3 credit hours)
- EDF 6155 Lifespan and Human Development and Learning (DEP 5057 Developmental Psychology or equivalent course, 3 credit hours)

## ADMISSIONS

Admission is open to those with a master's degree from a regionally accredited institution or those currently enrolled in or possessing a master's degree in counseling or a related field. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

Applicants to the Play Therapy Graduate Certificate must attend and pass an interview that is offered twice each year. Individuals seeking national certification in Play Therapy who are enrolled in a counseling or mental health profession program that did not include a practicum and internship experience will need to complete MHS 6803 Practicum in Counselor Education and MHS 6830 Counseling Internship to be eligible for national certification. A master's degree in a medical or mental health profession is required for national certification. It is also recommended that individuals take MHS 6433 Developmental Process of the Resilient Family.

| Play Therapy Certificate          | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

K. Dayle Jones PhD, LMHC, NCC  
 Associate Professor  
 Program Director  
 counsel@mail.ucf.edu  
 Telephone 407-823-6477  
 Child, Family and Community Sciences  
 ED 322-T

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# Police Leadership Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Police Leadership is designed to provide a theoretical and practical knowledge base for the law enforcement executive in criminal justice, public administration or social work.

Municipalities, county governments and state agencies have been working to develop new technologies, cooperative business and government relationships, and new ways of fighting and deterring criminal behavior. The police manager, who previously had been concerned only with issues involving statutes, policies and local jurisdictional issues, must now be concerned with human resource and management issues, employee assistance programs, ethical issues, and local, state, federal, and international government relations.

The certificate consists of twelve credit hours of graduate course work. The successful completion of this certificate program would improve consideration for admission as a degree-seeking student in the master's program of Criminal Justice.

## CURRICULUM

Students must complete three courses (9 credit hours) in the core curriculum and one course (3 credit hours) from the list of approved electives.

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- CCJ 5105 Foundations of Law Enforcement (3 credit hours)

#### Choose one of the following two courses.

- CCJ 6730 Planned Change and Innovation in Criminal Justice (3 credit hours)
- CCJ 6106 Policy Analysis in Criminal Justice (3 credit hours)

#### Choose one of the following three courses.

- PAD 6037 Public Organizational Management (3 credit hours)
- PAD 5806 Local Government Operations (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours). This course is an advanced program evaluation course. Those without a background in Public Administration are discouraged from enrolling in this course.

#### Elective Course—3 Credit Hours

#### Choose one course from the following list.

- CCJ 5015 The Nature of Crime (3 credit hours)
- CCJ 5456 The Administration of Justice (3 credit hours)
- CCJ 5467 Justice and Safety System Manpower (3 credit hours)
- PAD 5041 Ethics and Values in Public Administration (3 credit hours)
- PAD 6035 Public Administration in the Policy Process (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)
- SOW 5132 Diverse Client Populations (3 credit hours)
- SOW 5662 Strategies in Employee Assistance Programs (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An

application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Police Leadership Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

Stephen Holmes PhD  
 Associate Dean  
 College Coordinator  
 sholmes@mail.ucf.edu  
 Telephone 407-823-2211  
 Health and Public Affairs Graduate Office  
 HPA 365

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# Pre-Kindergarten Handicapped Endorsement Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Pre-Kindergarten Handicapped Endorsement provides bachelor’s students and master’s-prepared teachers the opportunity to obtain the requisite curriculum to become credentialed in the area of pre-kindergarten children with disabilities. The certificate prepares qualified students to teach the pre-kindergarten handicapped population.

**CURRICULUM**

**Total Hours Required—12 Credit Hours Minimum**

**Required Courses—12 Credit Hours**

- EEX 5702 Planning Curriculum for Pre-Kindergarten Children with Disabilities (3 credit hours)
- EEX 5750 Communication with Parents and Agencies (3 credit hours)
- EEX 6017 Typical and Atypical Applied Child Development (3 credit hours)
- EEX 6222 Observation and Assessment of Young Children (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to those with a bachelor’s degree in exceptional education or primary education from a regionally accredited institution, a master’s degree in varying exceptionalities or primary education from a regionally accredited institution, or if an individual has shown evidence of graduate course work in one of these areas: exceptional student education, preschool education (0-4), primary education (K-3), pre-kindergarten/primary education (PK-3), or early childhood education.

| Pre-Kindergarten Handicapped Endorsement Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                  |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                             |               |        |        |        |
| International Transfer Applicants                    |               |        |        |        |

## CONTACT INFO

Lee Cross PhD  
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Program Director  
lcross@mail.ucf.edu  
Telephone 407-823-5477  
Department of Child, Family and Community  
Sciences  
ED 315-N

- ENC 6247 Proposal Writing (3 credit hours)
- ENC 5930 Current Topics in Professional Writing (3 credit hours)
- ENC 5291 Developing Professional Writing Projects (3 credit hours)
- ENC 5245 Teaching Professional Writing (3 credit hours)
- ENC 5276 Writing/Consulting: Theory and Practice (3 credit hours)
- ENG 5009 Methods of Bibliography and Research (3 credit hours)
- LIN 5675 English Grammar and Usage (3 credit hours)

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# Professional Writing Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Professional Writing offers professionals opportunities to develop and improve communication skills vital to advancing in the workplace. Since the program is designed for busy professionals, all courses are offered via the web, and the program can be completed in as few as three consecutive semesters.

## CURRICULUM

This flexible five-course sequence of graduate study includes three required core courses and allows students to choose two electives. Additional courses from the MA programs in Technical Communication, Rhetoric and Composition or from other relevant programs may also be used as electives with approval from the program coordinator or graduate director.

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- ENC 5337 Modern Rhetorical Theory (3 credit hours)
- ENC 5237 Writing for the Business Professional (3 credit hours)
- ENC 5216 Editing Professional Writing (3 credit hours)

#### Elective Courses—6 Credit Hours

Choose two courses from the following list.

- ENC 6306 Persuasive Writing (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Successful applicants will have received a grade of "A" or "B" in an upper-division writing intensive course. An application to the graduate certificate program, a statement of academic intent, and official transcripts must be submitted. Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Professional Writing Certificate  | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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Program Director  
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Department of English  
CNH 307

# Professoriate Certificate

## PROGRAM DESCRIPTION

The Professoriate Graduate Certificate introduces doctoral students to all of the responsibilities of university professors: designing effective learning environments, remaining active in research and attracting funding, and supporting the governance and administration of their school. The certificate, along with the UCF doctoral programs, will provide a foundation of skills and knowledge for students in all disciplines and fields. Course work and internship experience will culminate with students developing an academic portfolio for faculty positions.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- EDH 6936 Seminar for Future Professoriate (1 credit hour, taken three times)
- IDS 6504 Adult Learning\* (3 credit hours)
- EDH 6946 Higher Education Internship (3 credit hours)
- EDA 6540 Organization and Administration of Higher Education (3 credit hours)

\*Online delivery course.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants will normally already have graduate admission to the university and preference will be given to current UCF doctoral and Master of Fine Arts students.

| Professoriate Certificate         | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

David Boote PhD  
Associate Professor  
Program Director  
dboote@mail.ucf.edu  
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Department of Educational Studies  
ED 322-H

# Project Engineering Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Project Engineering is designed to meet the needs of engineers moving into management and other leadership roles by complementing their technical backgrounds with the human aspects, organizational and financial issues, project considerations, and analytical tools for effective decision making.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- EIN 5108 The Environment of Technical Organizations (3 credit hours)
- EIN 5117 Management Information Systems I (3 credit hours)
- EIN 5140 Project Engineering (3 credit hours)
- EIN 6357 Advanced Engineering Economic Analysis (3 credit hours) or ESI 6358 Decision Analysis (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Project Engineering Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Charles H. Reilly PhD  
 Professor  
 Program Director  
 gradiems@mail.ucf.edu  
 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

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# Public Administration Certificate

## CURRICULUM

### Total Hours Required—18 Credit Hours Minimum

#### Required Courses—15 Credit Hours

- PAD 6035 Public Administration in the Policy Process (3 credit hours)
- PAD 6037 Public Organization Management (3 credit hours)
- PAD 6053 Public Administrators in the Governance Process (3 credit hours)
- PAD 6227 Public Budgeting (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)

## Restricted Elective Course—3 Credit Hours

### Choose one course from the following list.

- PAD 5427 Labor Relations in the Public Sector (3 credit hours)
- PAD 5806 Local Government Operations (3 credit hours)
- PAD 5807 Administrative Practice in the Public Sector (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6307 Policy Implementation (3 credit hours)
- PAD 6327 Public Program Evaluation Techniques (3 credit hours)
- PAD 6335 Strategic Planning and Management (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Public Administration Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Kuotsai 'Tom' Liou PhD  
 Professor  
 Program Director  
 kliou@mail.ucf.edu  
 Telephone 407-823-2454  
 Department of Public Administration  
 Health and Public Affairs II 240

# Quality Assurance Certificate

## PROGRAM DESCRIPTION

Much of the resurgence of U.S. products in the global marketplace has been due to an increased emphasis on quality. Today's consumers are offered many alternatives to meet their needs, and they have consequently become very discriminating in their purchases. In addition, companies seek to be known as a quality organization, not merely the producer of quality products. The Graduate Certificate in Quality Assurance provides students with the knowledge they need to improve the quality and reliability of the goods and services they produce and to institute steps to make their organizations more competitive through an overall commitment to quality.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5227 Total Quality Improvement (3 credit hours) or ESI 6224 Quality Management (3 credit hours)
- ESI 5236 Reliability Engineering (3 credit hours)
- ESI 6225 Quality Design and Control (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| Quality Assurance Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Charles H. Reilly PhD  
 Professor  
 Program Director  
 gradiems@mail.ucf.edu  
 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

# Reading Education Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Reading Education prepares classroom teachers with an emphasis on research-based strategies for teaching reading through a straightforward, concise presentation of essential knowledge of performance areas. The courses in this certificate will satisfy the legislation recently passed by the state of Florida. Classroom teachers completing the graduate certificate will be able to add the reading endorsement to their teaching certificates.

## CURRICULUM

Although there are no course prerequisites, candidates who have had no previous children's or adolescent literature courses are strongly encouraged to take one course prior to enrolling in the certificate program or at least prior to enrolling in RED 6846 Reading Practicum.

## Total Hours Required—18 Credit Hours Minimum

Suggested courses for those candidates who have not had previous children's or adolescent literature courses include: LAE 5415 Children's Literature in Elementary Education (3 credit hours) or LAE 5465 Literature for Adolescents (3 credit hours).

## Required Courses—18 Credit Hours

- RED 5147 Developmental Reading\* (3 credit hours)
- RED 5517 Classroom Diagnosis and Development of Reading Proficiencies (3 credit hours)
- RED 6116 Trends in Reading Education\* (3 credit hours)
- RED 6845 Advanced Evaluation and Instruction in Reading (3 credit hours)
- RED 6846 Reading Practicum (6 credit hours)

\*Online delivery course.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Professionals currently certified as Florida teachers are eligible to pursue the Graduate Certificate in Reading Education.

| Reading Education Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Karri Williams PhD  
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Program Director  
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Department of Teaching and Learning Principles  
UCF Cocoa (BC 357)

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# SAS Data Mining Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in SAS Data Mining provides students the knowledge to use statistical, data presentation, and data visualization tools needed for data mining with SAS/Enterprise Miner and SAS/Warehouse Administrator software. The program welcomes interested UCF students and those already employed full-time but wishing to advance their careers. Basic familiarity with the web and computer programming is required.

## CURRICULUM

The program requires five courses and is set up so that students begin the program in the fall semester.

## Total Hours Required—15 Credit Hours Minimum

Two courses can be taken during this initial fall semester. The remaining courses will be taken one per semester during the spring (year 1), fall (year 2) and spring (year 2) semesters. All courses are scheduled in the late afternoon or evening hours.

Students who have a sufficient background in statistics, subject to the approval of the graduate program director, can take a higher-level course such as STA 6236 Regression Analysis instead of STA 5206 Statistical Analysis.

## Required Courses—15 Credit Hours

- STA 5103 Advanced Computer Processing of Statistical Data (3 credit hours)
- STA 5206 Statistical Analysis (3 credit hours)



- STA 6714 Data Preparation (3 credit hours)
- STA 5703 Data Mining Methodology I (3 credit hours)
- STA 6704 Data Mining Methodology II (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| SAS Data Mining Certificate       | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 Professor  
 Program Director  
 statgrad@pegasus.cc.ucf.edu  
 Telephone 407-823-2797  
 Department of Statistics  
 Computer Classroom II 205

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# School Social Work Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in School Social Work prepares selected Master of Social Work students with the specialized knowledge and skills required

to work in the field of school social work in a public school setting. Students who complete this certificate program will be highly qualified to step into a school social work position in any county in Florida. This certificate program may also be of interest to students in related majors who want to understand the functions of the Master of Social Work professional, but will not be employed in school social work positions.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- SOW 6612 Clinical Practice with Families (3 credit hours)
- SOW 6656 Clinical Practice with Children and Adolescents (3 credit hours)
- SOW 5635 Social Work Practice in Schools (3 credit hours)

#### Electives—3 Credit Hours

Choose one course from the following list.

- SOW 6324 Clinical Practice with Groups (3 credit hours)
- SOW 6938 Prevention and Treatment of Adolescent Substance Abuse (3 credit hours)
- EDF 6517 Perspectives on Education (3 credit hours)
- EDG 6223 Curriculum Theory and Organization (3 credit hours)
- EDF 6608 Social Factors in American Education (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)

## ADMISSIONS

Admission is only open to students in the Master of Social Work Program and those in related majors as determined by the School Social Work Graduate Certificate Director. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please submit all requested material by the established deadline(s).

| School Social Work Certificate    | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 Program Director  
 esramos@mail.ucf.edu  
 Telephone 407-823-5428  
 School of Social Work  
 HPA 1 204

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# Severe or Profound Disabilities Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Severe or Profound Disabilities (SPD) provides additional training for professionals and students. Course work focuses on knowledge, skills and competencies for working with students with SPD. Pending state approval, persons holding Florida ESE teacher certification may apply the five certificate courses toward State Endorsement in Severe or Profound Disabilities (Administrative Rule 6A-4.0179).

## CURRICULUM

The program is composed of five graduate courses that can be incorporated into a master's program of study in Exceptional Education or taken as an add-on to an undergraduate or graduate degree. The graduate internship for this course must be completed in a classroom with students with Severe or Profound Disabilities or students with Autism Spectrum Disorders.

## Total Hours Required—15 Credit Hours Minimum

### Required Courses—15 Credit Hours

- EEX 6297 Assessment, Diagnosis, and Curriculum Prescriptions for Students with Autism (3 credit hours)
- EEX 6759 Transition Planning and Interdisciplinary Teaming for Students with Disabilities (3 credit hours)
- EEX 6XXX Nature of Severe or Profound Disabilities: Theory and Educational Practice (3 credit hours)
- EEX 6246 Nature of Autism: Theory and Educational Practice (3 credit hours)
- EEX 6946 Graduate Internship: Exceptional Education (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to students with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants are encouraged to apply online.

| Severe or Profound Disabilities Certificate | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                         |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                    |               |        |        |        |
| International Transfer Applicants           |               |        |        |        |

## CONTACT INFO

Wilfred Wienke EdD  
 Professor  
 Program Director  
 wwienke@mail.ucf.edu  
 Telephone 407-823-2402  
 Child, Family and Community Sciences  
 Education 315 T

# Social Work Administration Certificate

## PROGRAM DESCRIPTION

The Social Work Administration Graduate Certificate offers students preparation in management of public sector and private nonprofit agencies. Each student will select courses that are suited to their career objective. The courses offered in this program include strategies for organizational management, strategic planning, employment law, leadership skills development, selection of performance measurements, quality assurance, needs assessments, program monitoring and evaluation, budgeting, grant writing and human resource management.

## CURRICULUM

**Total Hours Required—11 Credit Hours Minimum**

**Required Courses—5 Credit Hours**

- SOW 6383 Social Work Administration (3 credit hours)
- SOW 6246 Policy Analysis and Social Change (2 credit hours)

**Elective Courses—6 Credit Hours**

**Select two courses from the following list.**

- SOW 6384 Administrative Supervision in Social Work (3 credit hours)
- SOW 6373 Clinical Supervision (3 credit hours)
- PAD 5850 Grant and Contract Management (3 credit hours)
- PAD 6208 Nonprofit Financial Management (3 credit hours)
- PAD 6417 Human Resource Management (3 credit hours)

## ADMISSIONS

Admission is only open to those who are currently enrolled in the Master of Social Work program. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. Please submit all requested material by the established deadline(s).

| Social Work Administration Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                    |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants               |               |        |        |        |
| International Transfer Applicants      |               |        |        |        |

## CONTACT INFO

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Program Director  
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School of Social Work  
HPA 1 204

# Software Engineering for Web-based Applications Certificate

## PROGRAM DESCRIPTION

The Software Engineering for Web-based Applications Graduate Certificate provides software engineering professionals or other professionals in the computing industry an opportunity to advance their professional skills, training and education while obtaining graduate credit in the area of software development for Internet and distributed computing applications. Students in this program will acquire the knowledge and skills relating to the latest technologies, tools and methodologies used to develop sophisticated Internet-based software applications. The program will prepare students with the ability to design, implement, install and maintain the software applications necessary to start and securely operate a web-based or network-oriented business. The target size of businesses using these applications ranges from a single-proprietor small business to a large-scale distributed commercial enterprise. Since almost all web-based businesses depend on the use of proprietary

databases, the design of database systems and their secure access and maintenance from web applications is a key focus of this certificate program.

## CURRICULUM

The certificate consists of 18 credit hours, courses taken in this program apply can be applied toward MS and PhD degrees offered by the School of Electrical Engineering and Computer Science subject to the approval of the respective program committees. All courses will be offered in a reduced-seating mode. Video-taped lectures will be available on-line and face to face meetings will be scheduled on weekends.

### Total Hours Required—18 Credit Hours Minimum

#### Required Courses—15 Credit Hours

- CIS 5XXX Web Application Authoring Tools (3 credit hours)
- CIS 6XXX Database Interface Development ASP.NET, VB.NET and PHP (3 credit hours)
- CIS 5XXX Designing Secure Transactions in Web Applications (3 credit hours)
- CIS 5XXX Web Application Testing (3 credit hours)
- CIS 6XXX Web Application Architecture and Design (3 credit hours)

#### Elective Course—3 Credit Hours

One Elective course will be offered each semester based on demand; requests must be made at least one semester prior to such offering.

- CIS 5XXX Web Server and Configuration Maintenance (3 credit hours)
- CIS 5XXX Human-Computer Interface Design for Web Applications (3 credit hours)
- CIS 5XXX Capacity planning and Performance Analysis of Web Services (3 credit hours)
- CIS 6XXX Planning and Estimating Web Applications Development (3 credit hours)
- ISM 6485 Electronic Commerce (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants

must apply online. All requested materials must be submitted by the established deadline(s).

| Software Engineering for Web-based Applications Certificate | Fall Priority | Fall   | Spring | Summer |
|-------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                         |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                                    |               |        |        |        |
| International Transfer Applicants                           |               |        |        |        |

## CONTACT INFO

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 Program Director  
 michaelg@mail.ucf.edu  
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 Department of Electrical Engineering  
 Engineering 407B

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## Special Education Certificate

### PROGRAM DESCRIPTION

The Graduate Certificate in Special Education provides out-of-field teachers and students with some of the course work needed to meet state certification requirements in special education. This certificate will help out-of-field teachers become more effective in their classrooms and will enhance the delivery of education to children and youth with disabilities.

## CURRICULUM

### Total Hours Required—18 Credit Hours Minimum

**Required Courses—18 Credit Hours**

- EEX 5051 Exceptional Children in the Schools (3 credit hours)
- EEX 6061 Instructional Strategies Pre-K-6 (3 credit hours)
- EEX 6065 Programming for Students with Disabilities at the Secondary Level (3 credit hours)
- EEX 6107 Teaching Spoken and Written Language (3 credit hours)
- EEX 6295 Assessment and Curriculum Prescriptions for the Exceptional Population (3 credit hours)
- EEX 6612 Methods of Behavior Management (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| Special Education Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

Lee Cross PhD  
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 Program Director  
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 Department of Child, Family and Community Sciences  
 ED 315-N

# Sports Leadership Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Sports Leadership is designed to provide enhanced leadership and other skills for those who work in participatory sports organizations. This program will benefit professionals working in areas such as athletic administration (scholastic and collegiate), coaching, community and youth sports organizations, recreation (commercial and municipal), fitness facilities, golf courses, exercise science, and physical education. Among the benefits of the certificate are the enhancement of knowledge, skills, and expertise in key areas of sport; the opportunity to network with other professionals in the participatory sports industry; and professional credentials and advancement.

**CURRICULUM**

The program occasionally offers special topics courses, which can be approved as a substitute for any of the required courses with permission of the program director. Also, students can substitute up to one additional course from the College of Education or another college on the UCF campus for one of required courses with permission of the program director.

**Total Hours Required—15 Credit Hours Minimum****Required Courses—15 Credit Hours****Choose five courses from the following list.**

- PET 5XXX Critical Issues: Ethics in Coaching and Sports (3 credit hours)
- PET 6XXX Race and Gender in Coaching and Sports Leadership (3 credit hours)
- SPM 5155 Introduction to Sports Administration (3 credit hours)
- SPM 5506 Financial Issues in Sports and Fitness (3 credit hours)
- SPM 6158 Leadership and Management in Sports and Fitness Programs (3 credit hours)
- SPM 6106 Planning and Operating Facilities for Sports and Fitness Programs (3 credit hours)

- SPM 6726 Legal Issues in Sports and Fitness Programs (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Sports Leadership Certificate     | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

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 Program Director  
 ekian@mail.ucf.edu  
 Telephone 407-823-4631  
 Department of Child, Family and Community Sciences  
 ED 122A

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# Structural Engineering Certificate

## PROGRAM DESCRIPTION

Structural engineering plays a significant role in the ongoing infrastructure developments in the central Florida area. Engineers continually need to update their knowledge of the state-of-the-art in research and practice in order to ensure the safety of constructed facilities. The Graduate Certificate in Structural Engineering is designed to prepare students and engineers in this area.

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

### Required Courses—12 Credit Hours

Choose four courses from the following list.

- CEG 6115 Foundation Engineering (3 credit hours)
- CES 5325 Bridge Engineering (3 credit hours)
- CES 5606 Advanced Steel Structures (3 credit hours)
- CES 5706 Advanced Reinforced Concrete (3 credit hours)
- CES 6116 Finite Element Structural Analysis (3 credit hours)
- CES 6209 Dynamics of Structures (3 credit hours)
- CES 6220 Wind and Earthquake Engineering (3 credit hours)
- CES 6230 Advanced Structural Mechanics (3 credit hours)
- CES 6715 Prestressed Concrete Structures (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree in Civil or Mechanical Engineering from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| Structural Engineering Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants           |               |        |        |        |
| International Transfer Applicants  |               |        |        |        |

**CONTACT INFO**

David Cooper PhD, PE  
 Professor  
 Program Director  
 gradcee@mail.ucf.edu  
 Telephone 407-823-2841  
 Department of Civil and Environmental  
 Engineering  
 Engineering II 211

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## Surface Water Modeling Certificate

**PROGRAM DESCRIPTION**

In Florida, the conservation and management of our surface water resources is crucial. The Graduate Certificate in Surface Water Modeling provides additional insight and an in-depth knowledge of this topic for engineers, water resource managers and others.

**CURRICULUM**

A prerequisite course of CWR 4812C Water Resource Design (3 credit hours) or equivalent approved by the program director is required prior to enrolling in the required courses.

**Total Hours Required—12 Credit Hours Minimum****Required Courses—12 Credit Hours**

Choose any four of the following courses.

- CWR 5545 Water Resources Engineering (3 credit hours)
- CWR 5125 Groundwater Hydrology (3 credit hours) or CWR 6126 Groundwater Modeling (3 credit hours)
- CWR 6236 River Engineering and Sediment Transport (3 credit hours)
- CWR 6535 Modeling Water Resources Systems (3 credit hours)
- CWR 6539 Finite Differences/Elements in Surface Water Modeling (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Surface Water Modeling Certificate | Fall Priority | Fall   | Spring | Summer |
|------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants           |               |        |        |        |
| International Transfer Applicants  |               |        |        |        |

**CONTACT INFO**

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 Professor  
 Program Director  
 gradcee@mail.ucf.edu  
 Telephone 407-823-2841  
 Department of Civil and Environmental  
 Engineering  
 Engineering II 211

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## Systems Engineering Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Systems Engineering is designed to provide students with an introduction to systems engineering.

**CURRICULUM****Total Hours Required—12 Credit Hours Minimum****Required Courses—12 Credit Hours**

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5306 Operations Research (3 credit hours)

- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6551C Systems Engineering (3 credit hours)

provides very powerful modeling capabilities to engineers. Simulation is particularly valuable because models of complex systems can be constructed and probabilistic or random forces can be represented in those models.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Systems Engineering Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Charles H. Reilly PhD  
 Professor  
 Program Director  
 gradiems@mail.ucf.edu  
 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

# Systems Simulation for Engineers Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Systems Simulation for Engineers provides students with the necessary background in probability and statistics, fundamental simulation modeling skills, essentials for designing and analyzing simulation experiments, and an introduction to an area of advanced simulation modeling. Discrete event simulation

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

### Required Courses—12 Credit Hours

- ESI 5219 Engineering Statistics (3 credit hours)
- ESI 5531 Discrete Systems Simulation (3 credit hours)
- ESI 6217 Statistical Aspects of Digital Simulation (3 credit hours)
- ESI 6532 Object-oriented Simulation (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Systems Simulation for Engineers Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                          |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                     |               |        |        |        |
| International Transfer Applicants            |               |        |        |        |

## CONTACT INFO

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 Professor  
 Program Director  
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 Industrial Engineering and Management Systems  
 Engineering II, Room 312C



# Teaching English as a Foreign Language Certificate

## PROGRAM DESCRIPTION

The Teaching English as a Foreign Language (TEFL) Graduate Certificate provides students with specialized knowledge and skills to teach English as a Foreign Language in overseas settings. The program focuses on the fundamentals of EFL teaching principles and methodology, linguistics, materials/curriculum development, and testing.

English has become the gateway to many international and technical jobs, as well as for entrance into institutions of higher education, and the number of people interested in learning English as a second or third language is increasing steadily. With the rising demand for English instructors comes an increasing need for individuals qualified to teach English as a Foreign Language. The majority of overseas English language schools require their teachers to be certified in Teaching English as a Foreign Language. (Note: the TEFL Certificate Program is not designed for teachers seeking K-12 ESOL endorsement in Florida.)

## CURRICULUM

No course substitutions are allowed.

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- TSL 5345 Methods of ESOL Teaching (3 credit hours) or TSL 6940 ESOL Practicum (3 credit hours)
- TSL 5940 Issues in TEFL (3 credit hours)
- TSL 6142 Critical Approaches to ESOL (3 credit hours)
- TSL 6250 Applied Linguistics in ESOL (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An

application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Teaching English as a Foreign Language Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                           |               |        |        |        |
| International Transfer Applicants                  |               |        |        |        |

## CONTACT INFO

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 Telephone 407-823-4555  
 Department of Modern Languages and Literatures  
 CNH 409

# Teaching Excellence Certificate

## PROGRAM DESCRIPTION

The College of Education offers a Graduate Certificate in Teaching Excellence to support classroom teachers applying for National Board Certification. The dual purpose of this certificate is to provide experienced classroom teachers the opportunity to enhance their classroom teaching performance and to acquire the necessary knowledge and skills to become certified by the National Board for Professional Teaching Standards (NBPTS).

## CURRICULUM

### Total Hours Required—12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- EDG 6392 Seminar in Quality Teaching (3 credit hours)
- EDG 6329 Quality Teaching Practices (3 credit hours)
- EDG 6326 Assessment of Quality Teaching (3 credit hours)
- LAE 5295 Writing Workshop I (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Applicants to this graduate certificate must have at least three years of classroom teaching experience.

| Teaching Excellence Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Martha Hopkins PhD  
 Professor  
 Program Director  
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 Telephone 407-823-2039  
 Department of Educational Research, Technology and Leadership  
 ED 223-N

## Technology Ventures Certificate

### PROGRAM DESCRIPTION

The Graduate Certificate in Technology Ventures is designed for those interested in creating and growing technology-based business ventures, including startups, corporate ventures and spin outs. The associated courses offer insight into opportunity assessment, innovation diffusion, intellectual property issues, university-industry collaboration, technology business strategies, and business plan formulation.

## CURRICULUM

### Total Hours Required—9 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- MAN 6286 Strategic Innovation (3 credit hours)
- GEB 5516 Technological Entrepreneurship (3 credit hours)
- GEB 6116 Business Plan Formation (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Admission requirements include a completed application for the certificate program, documentation of prior business degrees or participation in a UCF graduate degree program, a 540 GMAT score (or commensurate GRE score), a response to an essay question, three letters of recommendation, and a current resume. Students who maintain a graduate standing in a UCF graduate degree program during the time required to complete a graduate certificate are eligible for this certificate.

| Technology Ventures Certificate                                    | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                                                |               | Jun 15 | Nov 1  |        |
| The Fall 2008 application deadline has been extended to July 15th. |               |        |        |        |
| International Applicants                                           |               |        |        |        |
| International Transfer Applicants                                  |               |        |        |        |

## CONTACT INFO

Cameron Ford PhD  
Associate Professor  
Other  
cbagrad@bus.ucf.edu  
Telephone 407-823-3700  
Department of Management  
Business Administration 331

# Ethics Certificate, Theoretical and Applied

## PROGRAM DESCRIPTION

The Graduate Certificate in Theoretical and Applied Ethics is designed to provide a specialized investigation of ethical theory and issues from a philosophical as well as a subject-specific point of view. This interdisciplinary graduate certificate focuses on specific topics of ethical inquiry in philosophy, humanities, the arts, sciences, health care, business, education, criminal justice, public administration, public relations, journalism, politics and other areas.

## CURRICULUM

Students may choose to specialize in some specific academic discipline or tailor their own areas of concentration.

All elective courses have been approved for inclusion by the chair or director of the relevant program. However, students without the appropriate prerequisites to courses will need to obtain the consent of the instructor to enroll.

## Total Hours Required—15 Credit Hours Minimum

### Required Courses—6 Credit Hours

- PHI 5627 Theoretical and Applied Ethics (3 credit hours)
- PHI 5665 Knowledge, Responsibility and Society (3 credit hours)

### Elective Courses—9 Credit Hours

- ACG 6835 Seminar in Ethics and Professionalism in Accounting and Auditing (3 credit hours)
- BUL 6444 Law and Ethics (1.5 credit hours)
- CCJ 5105 Foundations of Law Enforcement (3 credit hours)
- CJC 5020 Foundations of Corrections (3 credit hours)
- CCJ 5456 The Administration of Justice (3 credit hours)
- CCJ 6217 Law and Social Control (3 credit hours)
- CCJ 6485 Issues in Justice Policy (3 credit hours)
- CCJ 6431 Leadership and Ethics in Criminal Justice (3 credit hours)
- CLP 6932 Ethical and Professional Issues in Mental Health Practice (3 credit hours)
- HSC 5595 AIDS: A Human Concern (3 credit hours)
- HUM 5803 Theories and Methods of the Humanities (3 credit hours)
- HUM 5802 Applied Contemporary Humanities (3 credit hours)
- MHS 6702 Ethical and Legal Issues (3 credit hours)
- MMC 6202 Legal and Ethical Issues for Communication (3 credit hours)
- MMC 6606 Advertising and Society (3 credit hours)
- NGR 5746 Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing\*\* (3 credit hours)
- NGR 5930 Issues in Health Care for the Homeless\*\* (3 credit hours)
- PAD 5041 Ethics and Values in Public Administration (3 credit hours)

- PHM 5035 Environmental Philosophy (3 credit hours)
- POT 6007 Seminar in Political Theory (3 credit hours)
- SPS 6931 Ethical and Legal Issues in School Psychological Services (3 credit hours)
- WST 5347 Research Seminar in Gender Studies (3 credit hours)

\*\* NGR courses are restricted to graduate students in nursing.

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Relevant experience with theoretical and applied ethics through course work at the undergraduate or graduate level or through professional experience working with ethical issues will be evaluated by the graduate program director together with the certificate committee comprised of faculty from the participating departments. Meeting minimum UCF admission criteria does not guarantee program admission. Final admission is based on evaluation of the applicant's abilities, past performance and the applicant's potential for completing the certificate.

| Ethics Certificate, Theoretical and Applied | Fall Priority | Fall   | Spring | Summer |
|---------------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                         |               | Jun 30 | Nov 15 | Mar 30 |
| International Applicants                    |               |        |        |        |
| International Transfer Applicants           |               |        |        |        |

## CONTACT INFO

Nancy Stanlick PhD  
 Assistant Professor  
 Program Director  
 stanlick@mail.ucf.edu  
 Telephone 407-523-5459  
 Department of Philosophy  
 PSY 220

# Training Simulation Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Training Simulation provides a fundamental understanding of the significant topics regarding systems, requirements, design, development and use of training simulations. Because of the tremendous growth in military and commercial training simulation, many people in this industry are facing the need for additional education.

## CURRICULUM

### Total Hours Required —12 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- EIN 5255C Interactive Simulation (3 credit hours)
- EIN 5317 Training System Design (3 credit hours)
- EIN 6645 Real-Time Simulation Agents (3 credit hours)
- EIN 6649C Intelligent Tutoring Training System Design (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Training Simulation Certificate   | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

**CONTACT INFO**

Charles H. Reilly PhD  
 Professor  
 Program Director  
 gradiems@mail.ucf.edu  
 Telephone 407-823-2204  
 Industrial Engineering and Management Systems  
 Engineering II, Room 312C

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## Transportation Engineering Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Transportation Engineering is designed for professionals who are faced with solving transportation needs. Transportation engineering is crucial for the Orlando area. As gridlock becomes more evident, more skilled professionals will be needed.

**CURRICULUM**

**Total Hours Required—12 Credit Hours**

**Required Courses—12 Credit Hours**

Choose four courses from the following list.

- CGN 6655 Regional Planning, Design, and Development (3 credit hours)
- ENV 5071 Environmental Analysis of Transportation Systems (3 credit hours)
- TTE 5204 Traffic Engineering (3 credit hours)
- TTE 6256 Traffic Operations (3 credit hours)
- TTE 5805 Geometric Design of Transportation Systems (3 credit hours)
- TTE 6270 Intelligent Transportation Systems (3 credit hours)
- TTE 6315 Traffic Safety Analysis (3 credit hours)
- TTE 6625 Mass Transportation Systems (3 credit hours)

**ADMISSIONS**

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Students must have completed an undergraduate Transportation course (such as TTE 4004) or an equivalent.

| Transportation Engineering Certificate | Fall Priority | Fall   | Spring | Summer |
|----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                    |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants               |               |        |        |        |
| International Transfer Applicants      |               |        |        |        |

**CONTACT INFO**

David Cooper PhD, PE  
 Professor  
 Program Director  
 gradcee@mail.ucf.edu  
 Telephone 407-823-2841  
 Department of Civil and Environmental  
 Engineering  
 Engineering II 211

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## Urban and Regional Planning Certificate

**PROGRAM DESCRIPTION**

The Graduate Certificate in Urban and Regional Planning is designed to enhance knowledge, skills, and career development in the field of community, urban and regional planning. Planning has been identified as one of the key policy issues in central Florida, which is a major growth area in the state.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—12 Credit Hours

- PAD 5336 Introduction to Urban Planning (3 credit hours)
- PAD 5337 Urban Design (3 credit hours)
- PAD 5338 Land Use and Planning Law (3 credit hours)
- PAD 6716 Information Systems for Public Managers and Planners (3 credit hours)

#### Restricted Elective Course—3 Credit Hours

##### Choose one course from the following list.

- CGN 6655 Regional Planning, Design, and Development (3 credit hours)
- ECP 6605 Economics of Urban and Regional Problems (3 credit hours)
- PAD 5356 Managing Community and Economic Development (3 credit hours)
- PAD 6387 Transportation Policy (3 credit hours)
- PAD 6353 Environmental Program Management Research (3 credit hours)

## ADMISSIONS

Admission is open to those with a bachelor's degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

| Urban and Regional Planning Certificate | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                     |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants                |               |        |        |        |
| International Transfer Applicants       |               |        |        |        |

## CONTACT INFO

Jay Jurie PhD  
 Associate Professor  
 Program Director  
 jurie@mail.ucf.edu  
 Telephone 407-823-5090  
 Department of Public Administration  
 HPA2 238K

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# Urban Education Certificate

## PROGRAM DESCRIPTION

The Graduate Certificate in Urban Education offers additional education and training to educational professionals who work in urban settings. The program is comprised of four graduate courses that address critical issues associated with life in urban schools and two graduate-level specialization electives tailored to personal areas of concentration.

## CURRICULUM

### Total Hours Required—15 Credit Hours Minimum

#### Required Courses—9 Credit Hours

- EDF 6725 Critical Issues in Urban Education\* (3 credit hours)
- EDF 6936 Teaching and Learning in Urban Settings (3 credit hours)
- EDG 6636 Social Contexts of the Urban Classroom (3 credit hours)

#### Elective Courses—6 Credit Hours

Select two courses from the following electives.

- EDF 6688 Public Policy and Urban Education (3 credit hours)
- EDF 6635 Teacher Leadership for Educational Equity and Social Justice (3 credit hours)
- EDF 6884 Education as a Cultural Process (3 credit hours)
- EDF 6886 Multicultural Education (3 credit hours)
- EEX 6342 Seminar: Critical Issues in Special Education (3 credit hours)

- EGI 6426 Education of Special Populations of Gifted Students (3 credit hours)
- SYD 5795 Class, Race, and Gender in American Society (3 credit hours)

\*Online delivery course.

\*\*Program will be offering another course online by fall 2008. By fall 2009, all required courses will be online with a number of electives, including EDF 6886 Multicultural Education.

### ADMISSIONS

Admission is open to those with a bachelor’s degree from a regionally accredited institution. An application to the graduate certificate program and official transcripts must be submitted. Applicants must apply online.

| Urban Education Certificate       | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

### CONTACT INFO

Martha Scott Lue PhD  
 Professor  
 Program Director  
 mlue@mail.ucf.edu  
 Telephone 407-823-2036  
 Department of Educational Studies  
 ED 315-S

## Nondegree Programs

# Education Undecided or Certification

### PROGRAM DESCRIPTION

Nondegree students in the College of Education can only take 5000- or 6000-level courses (unless seeking certification). Students who are allowed to take graduate courses in this category can only transfer nine credit hours into a graduate program.

### ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

If you are interested in taking graduate courses at UCF for personal or professional enhancement or to prepare for possible admission to a graduate program, you may enroll as a nondegree-seeking student. Applicants must apply online. In addition to completing the online application, applicants will need to submit official, final transcripts conferring a bachelor’s degree.

| Education Undecided or Certification | Fall Priority | Fall   | Spring | Summer |
|--------------------------------------|---------------|--------|--------|--------|
| Domestic Applicants                  |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants             |               |        |        |        |
| International Transfer Applicants    |               |        |        |        |

### CONTACT INFO

Tanisha Castor  
 Graduate Studies  
 graduate@mail.ucf.edu  
 Telephone 407-823-2766 ext. 253  
 UCF Graduate Studies  
 Millican Hall 230

# Business Administration Undecided

## PROGRAM DESCRIPTION

Nondegree students in the College of Business Administration can only take undergraduate courses. A student must be admitted to a graduate program to take the Business Foundation Core courses.

## CURRICULUM

Students should contact the College of Business Administration regarding class availability and scheduling.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

Anyone with an undergraduate degree from a regionally accredited institution may enroll at the discretion of the program. In addition to applying online, applicants need to submit official, final transcripts conferring a bachelor's degree. Students can transfer in up to nine hours of business graduate courses from another AACSB business school with approval from the College of Business Administration (the limit is six hours from a regionally accredited university, with approval). The other graduate programs in Business Administration review at each student individually to determine eligibility for graduate courses in their program.

| Business Administration Undecided | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants          |               |        |        |        |

| Business Administration Undecided | Fall Priority | Fall | Spring | Summer |
|-----------------------------------|---------------|------|--------|--------|
| International Transfer Applicants |               |      |        |        |

## CONTACT INFO

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Graduate Studies  
graduate@mail.ucf.edu  
Telephone 407-823-2766 ext. 252  
UCF Graduate Studies  
Millican Hall 230

# Nondegree or Transient

## PROGRAM DESCRIPTION

A nondegree-seeking student is a student who has not been accepted into an academic program and is not seeking a graduate degree. Students in this category are often completing application requirements for a graduate program. Students who are allowed to take graduate courses in this category can only transfer nine credit hours into a graduate program.

## ADMISSIONS

For information on general UCF graduate admissions requirements that apply to all prospective students, please visit the Admissions and Registration section of the Graduate Catalog. Applicants must apply online. All requested materials must be submitted by the established deadline(s).

## Nondegree Students

Applicants must apply online and submit the following application materials:

- Graduate Application for Admission (signed by the applicant)
- Residency Classification form
- A \$30.00 application fee is required of all applicants for each application submitted.



- Official transcripts showing an earned bachelor’s degree from an accredited institution
- Prior to registration, a Health Form must be submitted to Student Health Services. The form can be downloaded from the online application site.

The application and all supporting documents must be received by the UCF College of Graduate Studies by the stated application deadline.

Please note that nondegree admission or admission to a graduate certificate program at UCF does not guarantee admission to graduate status in a degree program. International students are not eligible for nondegree status unless they hold an eligible visa.

**Limited Nondegree Applicants**

Students who wish to enroll as limited nondegree students at the graduate level must apply for admission as a nondegree student. Please refer to the Nondegree Applicants section of the graduate studies website and follow the application procedures and requirements.

**Transient Students**

Students attending UCF for a term from another institution where they are receiving their degree are classified as transient students. Transient students must apply online as a nondegree student. Required documents for transient students are:

- Graduate Application for Admission form (signed by the applicant) (Select nondegree-seeking status)
- A \$30.00 application fee is required of all applicants for each application submitted.
- Health Form required if you are not an SUS transient student
- A letter from your home institution stating that you are in good academic standing and that the institution will accept the transfer of the hours

The application and all supporting documents must be received by the UCF College of Graduate Studies by the stated application deadline.

| Nondegree or Transient   | Fall Priority | Fall   | Spring | Summer |
|--------------------------|---------------|--------|--------|--------|
| Domestic Applicants      |               | Jul 15 | Dec 1  | Apr 15 |
| International Applicants |               |        |        |        |

| Nondegree or Transient            | Fall Priority | Fall | Spring | Summer |
|-----------------------------------|---------------|------|--------|--------|
| International Transfer Applicants |               |      |        |        |

**CONTACT INFO**

Lindsay Gift  
 Graduate Studies  
 graduate@mail.ucf.edu  
 Telephone 407-823-2766 ext. 256  
 UCF Graduate Studies  
 Millican Hall 230

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**Nursing Nondegree**

**PROGRAM DESCRIPTION**

Students may take Nursing classes as a nondegree-seeking postbaccalaureate student on a space-available basis. Deadlines for application for this status are earlier than the dates posted by the university. Students must designate on their application that they are applying to the College of Nursing to facilitate processing of files.

Students will be notified in writing from the College of Nursing regarding acceptance as a nondegree-seeking student. Accepted students will be assisted with registration for available courses. Successful completion of postbaccalaureate courses does not guarantee admission to the graduate program. Students allowed to take graduate courses in this category can only transfer nine credit hours of courses with a “B” grade or better into an MSN program. Please note that doctoral (DNP and PhD) students cannot apply as a nondegree student, as they must apply directly to the respective programs.

**CURRICULUM**

Accepted students will be assisted with registration for available courses. Students allowed to take graduate courses in this category can only transfer nine credit hours of courses with a “B” grade or better into an MSN program.

## ADMISSIONS

If you are interested in taking graduate courses at UCF for personal or professional enhancement or to prepare for possible admission to a graduate program, you may enroll as a nursing nondegree-seeking student. Applicants must apply online. In addition to completing the online application, applicants need to submit official, final transcripts conferring a bachelor's degree and evidence of completion of a professional nurse education program (RN).

| Nursing Nondegree                 | Fall Priority | Fall   | Spring | Summer |
|-----------------------------------|---------------|--------|--------|--------|
| Domestic Applicants               |               | Jul 15 | Dec 1  |        |
| International Applicants          |               |        |        |        |
| International Transfer Applicants |               |        |        |        |

## CONTACT INFO

Jean Kijek PhD  
 Associate Dean  
 College Coordinator  
 ucfnurse@mail.ucf.edu  
 Telephone 407-823-2744  
 College of Nursing  
 Health and Public Affairs 1 220 B

## Courses

Courses listed here include all approved UCF graduate courses as of the date this Graduate Catalog was published (May 2008).

**Availability of Courses.** The university does not offer all of the courses listed in this Graduate Catalog each academic year, academic semester, or term. Consult the “Course Catalog Search” or “Class Schedule Search” at myUCF (<https://my.ucf.edu>) for those courses offered each term.

## UNDERSTANDING COURSE INFO

### Classification of Courses

- **3000-4999. Junior- and senior-level courses (Upper-division).** These courses contain advanced undergraduate level material and are designed primarily for undergraduate juniors and senior. When approved for inclusion in an individual program of graduate study by a supervisory committee approved by UCF Graduate Studies, selected 4000-4999 courses may serve the needs of individual graduate students.
- **5000-5999. Courses designed for graduate students.** Courses at the 5000 level are taken to satisfy graduate degree requirements. However, nondegree-seeking students and seniors may enroll in 5000-level courses with permission from the program.
- **6000-6999. Advanced graduate level courses.** These courses are designed to build upon the beginning graduate level courses and to deliver more advanced content and experiences. They are open only to graduate students. (Seniors, within nine hours of graduation that have a minimum 3.0 GPA and do not register for more than twelve hours may request college permission to take a 6000-level class.) Students in 3+2 programs (combined bachelors and masters programs) should check with their adviser before registering for 6000-level courses.
- **7000-7999. Doctoral-level courses.** These courses provide material at the most advanced graduate level. They are restricted to admitted doctoral students only.

## Florida’s Statewide Course Numbering System

Courses in this catalog are identified by prefixes and numbers that were assigned by Florida’s Statewide Course Numbering System. This common numbering system is used by all public postsecondary institutions in Florida and by thirty-two participating nonpublic institutions. The major purpose of this system is to facilitate the transfer of courses between participating institutions.

Each participating institution controls the title, credit, and content of its own courses and recommends the first digit of the course number to indicate the level at which students normally take the course. Course prefixes and the last three digits of the course numbers are assigned by members of faculty discipline committees appointed for that purpose by the Florida Department of Education in Tallahassee. Individuals nominated to serve on these committees are selected to maintain a representative balance as to type of institution and discipline field or specialization.

The course prefix and each digit in the course number have meaning in the Statewide Course Numbering System (SCNS). The list of course prefixes and numbers, along with their generic titles, is referred to as the “SCNS taxonomy.” Descriptions of the content of courses are referred to as course equivalency profiles. **See Table below.**

## General Rule for Course Equivalencies

Equivalent courses at different institutions are identified by the same prefixes and same last three digits of the course number and are guaranteed to be transferable between participating institutions that offer the course, with few exceptions. (Exceptions are listed below.)

For example, a survey course in social problems is offered by 31 different postsecondary institutions. Each institution uses SYG \_010 to identify its social problems course. The level code is the first digit and represents the year in which students normally take this course at a specific institution. In the SCNS taxonomy, SYG means Sociology, General, the century digit 0 represent Entry-Level General Sociology, the decade digit 1 represents Survey Course, and the unit digit 0 represents Social Problems.

In science and other areas, a C or L after the course number is known as a lab indicator. The C represents a combined lecture and laboratory course that meets in the same place at the same time. The L represents a laboratory course or the laboratory part of a course, having the same prefix and course number without a lab indicator, which meets at a different time or place.

Transfer of any successfully completed course from one institution to another is guaranteed in cases where the course to be transferred is equivalent to one offered by the receiving institution. Equivalencies are established by the same prefix and last three digits and comparable faculty credentials at both institutions. For example, SYG 1010 is offered at a community college. The same course is offered at a state university as SYG 2010. A student who has successfully completed SYG 1010 at the community college is guaranteed to receive transfer credit for SYG 2010 at the state university if the student transfers. The student cannot be required to take SYG 2010 again since SYG 1010 is equivalent to SYG 2010. Transfer credit must be awarded for successfully completed equivalent courses and used by the receiving institution to determine satisfaction of requirements by transfer students on the same basis as credit awarded to the native students. It is the prerogative of the receiving institution, however, to offer transfer credit for courses successfully completed which have not been designated as equivalent.

## The Course Prefix

The course prefix is a three-letter designator for a major division of an academic discipline, subject matter area, or subcategory of knowledge. The prefix is not intended to identify the department in which a course is offered. Rather, the content of a course determines the assigned prefix used to identify the course.

## Course Prefixes

|     |                        |
|-----|------------------------|
| ACG | Accounting: General    |
| ADV | Advertising            |
| AFA | Afro-American Studies  |
| AFH | African History        |
| AMH | American History       |
| AML | American Literature    |
| ANG | Anthropology: Graduate |
| ARE | Art Education          |

|     |                                               |
|-----|-----------------------------------------------|
| ARH | Art History                                   |
| ART | Art                                           |
| ASH | Asian History                                 |
| AST | Astronomy                                     |
| BCH | Biochemistry (Biophysics)                     |
| BME | Biomedical Engineering                        |
| BOT | Botany                                        |
| BSC | Biological Sciences                           |
| BTE | Business Teacher Education                    |
| BUL | Business Law                                  |
| CAP | Computer Applications for Computer Scientists |
| CCE | Civil Construction Engineering                |
| CCJ | Criminology and Criminal Justice              |
| CDA | Computer Design/Architecture                  |
| CEG | Civil Geotechnical Engineering                |
| CEN | Computer Engineering                          |
| CES | Civil Engineering Structures                  |
| CET | Computer Engineering Technology               |
| CGN | Civil Engineering                             |
| CGS | Computer General Studies                      |
| CHM | Chemistry                                     |
| CHS | Chemistry: Specialized                        |
| CIS | Computer Science and Information Systems      |
| CJC | Corrections                                   |
| CJE | Law Enforcement                               |
| CJJ | Juvenile Justice                              |
| CJL | Law and Process                               |
| CLP | Clinical Psychology                           |
| CNT | Computer Networks                             |
| COM | Communication                                 |
| COP | Computer Programming                          |
| COT | Computing Theory                              |
| CPO | Comparative Politics                          |
| CRW | Creative Writing                              |
| CWR | Civil Water Resources                         |
| CYP | Community Psychology                          |
| DEP | Developmental Psychology                      |
| DIG | Digital Media                                 |
| EAB | Experimental Analysis of Behavior             |
| EAS | Aerospace Engineering                         |
| EBD | Education: Emotional/Behavior Disorders       |
| ECM | Engineering: Computer Math                    |
| ECO | Economics                                     |
| ECP | Economic Problems and Policy                  |
| ECS | Economic Systems and Development              |
| EDA | Educational Administration                    |

|     |                                              |     |                                             |
|-----|----------------------------------------------|-----|---------------------------------------------|
| EDE | Education: Elementary                        | HSA | Health Services Administration              |
| EDF | Education: Foundations and Policy Studies    | HSC | Health Sciences                             |
| EDG | Education: General                           | HUM | Humanities                                  |
| EDH | Education: Higher                            | HUN | Human Nutrition                             |
| EDM | Education: Middle School                     | IDS | Interdisciplinary Studies                   |
| EDP | Educational Psychology                       | INP | Industrial and Applied Psychology           |
| EDS | Education Supervision                        | INR | International Relations                     |
| EEC | Education: Early Childhood                   | ISC | Interdisciplinary Sciences                  |
| EEE | Engineering: Electrical and Electronic       | ISM | Information Systems Management              |
| EEL | Engineering: Electrical                      | LAE | Language Arts and English Education         |
| EES | Environmental Engineering Science            | LAH | Latin American History                      |
| EEX | Education: Exceptional Child: Core Compet.   | LEI | Leisure                                     |
| EGC | Counselor Education                          | LIN | Linguistics                                 |
| EGI | Education: Gifted                            | LIT | Literature                                  |
| EGM | Engineering Science                          | MAA | Mathematics: Analysis                       |
| EGN | Engineering: General                         | MAD | Mathematics: Discrete                       |
| EIN | Industrial Engineering                       | MAE | Mathematics Education                       |
| ELD | Education: Specific Learning Disabilities    | MAN | Management                                  |
| EMA | Materials Engineering                        | MAP | Mathematics Applied                         |
| EME | Education: Technology and Media              | MAR | Marketing                                   |
| EML | Engineering: Mechanical                      | MAS | Mathematics: Algebraic Structures           |
| EMR | Education: Mental Retardation                | MAT | Mathematics                                 |
| ENC | English Composition                          | MCB | Microbiology                                |
| ENG | English: General                             | MHS | Mental Health Services                      |
| ENL | English Literature                           | MLS | Medical Laboratory Science                  |
| ENV | Engineering: Environmental                   | MMC | Mass Media Communication                    |
| ENY | Entomology                                   | MTG | Mathematics: Topology and Geometry          |
| EPH | Education: Physical and Multiple Handicapped | MUC | Music: Composition                          |
| ESE | Education: Secondary                         | MUE | Music Education                             |
| ESI | Industrial/Systems Engineering               | MUG | Music: Conducting                           |
| ETG | Engineering Technology: General              | MUH | Music: History/Musicology                   |
| ETI | Engineering Technology: Industrial           | MUL | Music Literature                            |
| EUH | European History                             | MUM | Music: Commercial/Management/Administration |
| EVR | Environmental Studies                        | MUN | Music Ensembles                             |
| EVT | Education: Vocational/Technical              | MUO | Music: Opera/Musical Theatre                |
| EXP | Experimental Psychology                      | MUS | Music                                       |
| FIL | Film                                         | MUT | Music: Theory                               |
| FIN | Finance                                      | MVB | Applied Music: Brasses                      |
| FLE | Foreign Language Education                   | MVJ | Applied Music: Jazz                         |
| FSS | Food Service Systems                         | MVK | Applied Music: Keyboard                     |
| GEB | General Business                             | MVO | Applied Music: Other                        |
| GEO | Geography: Systematic                        | MVP | Applied Music: Percussion                   |
| GEY | Gerontology                                  | MVS | Applied Music: Strings                      |
| HFT | Hospitality Management                       | MVV | Applied Music: Voice                        |
| HIM | Health Information Management                | MVW | Applied Music: Woodwinds                    |
| HIS | General History and Historiography           | NGR | Nursing: Graduate                           |
|     |                                              | OSE | Optical Science and Engineering             |

|     |                                                   |
|-----|---------------------------------------------------|
| PAD | Public Administration                             |
| PAF | Public Affairs                                    |
| PAZ | Parks and Zoos                                    |
| PCB | Process Biology (Cell/Molecular/etc.)             |
| PEM | Phys. Edu. Acts. (Gen): Perform. Centered, Land   |
| PEO | Phys. Edu. Acts. (Prof.): Object Centered, Land   |
| PET | Physical Education Theory                         |
| PGY | Photography                                       |
| PHC | Public Health Concentration                       |
| PHI | Philosophy                                        |
| PHM | Philosophy of Man and Society                     |
| PHT | Physical Therapy                                  |
| PHY | Physics                                           |
| PHZ | Physics (Continued)                               |
| PLA | Paralegal/Legal Assistant/Legal Administration    |
| POS | Political Science                                 |
| POT | Political Theory                                  |
| PPE | Personality                                       |
| PSB | Psychobiology                                     |
| PSY | Psychology                                        |
| PUP | Public Policy                                     |
| PUR | Public Relations                                  |
| QMB | Quantitative Methods in Business                  |
| RED | Reading Education                                 |
| RET | Respiratory Care                                  |
| SCE | Science Education                                 |
| SDS | Student Development Services                      |
| SOP | Social Psychology                                 |
| SOW | Social Work                                       |
| SPA | Speech Pathology and Audiology                    |
| SPB | Sport Business                                    |
| SPC | Speech Communication                              |
| SPM | Sports Management                                 |
| SPN | Spanish Language                                  |
| SPS | School Psychology                                 |
| SPW | Spanish Literature (Writings)                     |
| SSE | Social Studies Education                          |
| STA | Statistics                                        |
| SYA | Sociological Analysis                             |
| SYD | Sociology: Demography / Area Studies / Minorities |
| SYO | Social Organization                               |
| SYP | Social Processes                                  |
| TAX | Taxation                                          |
| THE | Theatre Studies and General Resources             |

|     |                                              |
|-----|----------------------------------------------|
| TPA | Theatre Production and Administration        |
| TPP | Theatre Performance and Performance Training |
| TSL | Teaching English as a Second Language        |
| TTE | Transportation Engineering                   |
| WST | Women's Studies                              |
| ZOO | Zoology                                      |

## Authority for Acceptance of Equivalent Courses

Section 1007.24(7), Florida Statutes, states:

“Any student who transfers among postsecondary institutions that are fully accredited by a regional or national accrediting agency recognized by the United States Department of Education and that participate in the statewide course numbering system shall be awarded credit by the receiving institution for courses satisfactorily completed by the student at the previous institutions. Credit shall be awarded if the courses are judged by the appropriate statewide course numbering system faculty committees representing school districts, public postsecondary educational institutions, and participating nonpublic postsecondary educational institutions to be academically equivalent to courses offered at the receiving institution, including equivalency of faculty credentials, regardless of the public or nonpublic control of the previous institution. The Department of Education shall ensure that credits to be accepted by a receiving institution are generated in courses for which the faculty possesses credentials that are comparable to those required by the accrediting association of the receiving institution. The award of credit may be limited to courses that are entered in the statewide course numbering system. Credits awarded pursuant to this subsection shall satisfy institutional requirements on the same basis as credits awarded to native students.”

## Exceptions to the General Rule for Equivalency

The following courses are exceptions to the general rule for course equivalencies and may not transfer. Transferability is at the discretion of the receiving institution:

- A. Courses in the 900-999 series (e.g., ART 2905)
- B. Internships, practica, clinical experiences, and study abroad courses

- C. Performance or studio courses in Art, Dance, Theater, and Music
- D. Skills courses in Criminal Justice
- E. Graduate courses
- F. Courses not offered by the receiving institution

College preparatory and vocational preparatory courses may not be used to meet degree requirements and are not transferable.

Questions about the Statewide Course Numbering System and appeals regarding course credit transfer decisions should be directed to Dr. David R. Dees in Office of Undergraduate Studies, Millican Hall 210, Phone (407) 823-2691, or the Florida Department of Education, Statewide Course Numbering System, 1401 Turlington Building, Tallahassee, Florida 32399-0400. Special reports and technical information may be requested by calling the Statewide Course Numbering System office at (850) 245-0427 or SunCom 205-0427.

**Special Courses**

In addition to the regular courses listed in this catalog, special courses may be available. Consult an academic adviser for details. Only admitted graduate students may take special courses except the Special Topics/Seminars (5937 and 6938), which are open to eligible students with instructor permission.

In order to register for any of the special numbers below, a student must present a signed Registration Agreement form obtained from the Department or College/School.

|                                          | Special Grad | Grad and Prof |
|------------------------------------------|--------------|---------------|
| Directed Independent Studies             | 5907         | 6908          |
| Directed Research                        | 5917         | 6918          |
| Special Topics/Seminars                  | 5937         | 6938          |
| Internships, Practica, Clinical Practice | 5944         | 6946          |
| Study Abroad                             | 5957         | 6958          |

|                                      | Special Grad | Grad and Prof |
|--------------------------------------|--------------|---------------|
| Research Report                      |              | 6909          |
| Treatise (Thesis or Research Report) | 6971         |               |
| Thesis Specialist                    |              | 6973          |
| Doctoral Research                    |              | 7919          |
| Doctoral Special Topics/Seminars     |              | 7939          |
| Doctoral Dissertation                |              | 7980          |

These courses may be assigned variable credit. Some may be repeated upon approval.

**Abbreviations in Course Descriptions**

- **PR** - Denotes a PREREQUISITE course that must be taken and passed prior to enrollment in the listed course.
- **CR** - Denotes a COREQUISITE course that must be taken concurrently with or prior to the listed course.
- **C.I.** - Denotes that registration is contingent upon the CONSENT OF THE INSTRUCTOR.

**Hours Code**

Each course listed is followed by a code that shows hours of credit and contact hours.

**Example**

ECI 5215C ECS-CEE 3(2,3)

ECI 5215C is offered by the College of Engineering and Computer Science (ECS) in the Civil and Environmental Engineering (CEE) Department, carries 3 hours of credit, but requires 5 contact hours, which consist of 2 hours in class and 3 hours laboratory or field work.

**College/Department Indicator**

|     |        |                          |
|-----|--------|--------------------------|
| BA  | ACCT   | Accounting               |
| CAH | AAS    | African American Studies |
| COS | ANTHRO | Anthropology             |
| CAH | ART    | Art                      |
| COS | BIOL   | Biology                  |

|      |            |                              |      |      |                           |
|------|------------|------------------------------|------|------|---------------------------|
| COS  | CHEM       | Chemistry                    | CAH  | THEA | Theatre                   |
| ED   | CFCS       | Child, Family & Comm Sci     | RCHM | TEA  | Tourism, Events & Attract |
| ECS  | CEE        | Civil & Environmental        | CAH  | WOM  | Women's Studies           |
| BA   | BUS        | College-BA                   |      |      |                           |
| ECS  | ECS        | College-ECS                  |      |      |                           |
| HPA  | HPA        | College-HPA                  |      |      |                           |
| HPA  | COM SC&DIS | Commun Sci & Disorders       |      |      |                           |
| COS  | COMM       | Communication                |      |      |                           |
| ECS  | CS         | Computer Science             |      |      |                           |
| HPA  | CJ/LS      | Criminal Justice/Legal St    |      |      |                           |
| CAH  | DIG        | Digital Media                |      |      |                           |
| BA   | ECON       | Economics                    |      |      |                           |
| ED   | ERTL       | Ed Research, Tech & Lead     |      |      |                           |
| ED   | ES         | Educational Studies          |      |      |                           |
| ECS  | ECE        | Electrical & Computer Eng    |      |      |                           |
| ECS  | ENT        | Engineering Technology       |      |      |                           |
| CAH  | ENG        | English                      |      |      |                           |
| CAH  | FILM       | Film Program                 |      |      |                           |
| BA   | FIN        | Finance                      |      |      |                           |
| HPA  | HIM        | Health Information Managt    |      |      |                           |
| HPA  | HP         | Health Professions           |      |      |                           |
| CAH  | HIST       | History                      |      |      |                           |
| RCHM | HOS        | Hospitality Operations       |      |      |                           |
| RCHM | HSP SERV   | Hospitality Services         |      |      |                           |
| ECS  | IEMS       | Industrial & Management      |      |      |                           |
| CAH  | IDS        | Interdisciplinary            |      |      |                           |
| UGST | INTERDISC  | Interdisciplinary Studies    |      |      |                           |
| BA   | MAN        | Management                   |      |      |                           |
| BA   | MIS        | Management Inform.<br>System |      |      |                           |
| BA   | MAR        | Marketing                    |      |      |                           |
| COS  | MATH       | Mathematics                  |      |      |                           |
| ECS  | MMAE       | Mechanical/Matrls/Aerosp     |      |      |                           |
| CAH  | LANG       | Modern Languages             |      |      |                           |
| COM  | M&M        | Molecular & Microbiology     |      |      |                           |
| CAH  | MUSIC      | Music                        |      |      |                           |
| CON  | NURS       | Nursing                      |      |      |                           |
| OPT  | OPT        | Optics                       |      |      |                           |
| CAH  | PHIL       | Philosophy                   |      |      |                           |
| COS  | PHYS       | Physics                      |      |      |                           |
| COS  | POLS       | Political Science            |      |      |                           |
| COS  | PSYCH      | Psychology                   |      |      |                           |
| HPA  | PUB        | Public Administration        |      |      |                           |
| HPA  | PUB AFF    | Public Affairs               |      |      |                           |
| HPA  | SOWK       | Social Work                  |      |      |                           |
| COS  | SOC        | Sociology                    |      |      |                           |
| COS  | STAT       | Statistics & Actuarial Sc    |      |      |                           |
| ED   | TLP        | Teaching & Learning Princ    |      |      |                           |



## COURSES

### **ACG 5206. Seminar in Financial Reporting**

3(3,0). PR: Acceptance for graduate study and all accounting foundation courses. An in-depth study of advanced financial reports.

*BA-Accounting*

### **ACG 5346. Advanced Managerial Accounting**

3(3,0). PR: Acceptance in the graduate program, or Accounting major or minor in term of graduation, and ACG 3361 with a grade of "C" or better and ECO 3411. Advanced and current techniques for generation and use of accounting information in managerial decision-making.

*BA-Accounting*

### **ACG 5405. Advanced Accounting Information Systems**

3(3,0). PR: Acceptance in the graduate program, or Accounting major or minor in term of graduation, and ACG 4401C. Design, analysis and evaluation of accounting information systems.

*BA-Accounting*

### **ACG 5517. Financial Accounting and Auditing for Governmental and Nonprofit Organizations**

3(3,0). PR: Acceptance in the graduate program, or Accounting major or minor in term of graduation, and ACG 3501 or consent of Graduate Program Adviser. Financial accounting and reporting for funds and activities of governments and nonprofit organizations; financial audit of government and nonprofit organizations.

*BA-Accounting*

### **ACG 5625. Auditing and EDP**

3(3,0). PR: Acceptance for graduate study, ACG 4401C, and ACG 4651. An examination of auditing procedures followed when a company uses a computer to process financial records.

*BA-Accounting*

### **ACG 6065. Accounting Foundations**

3(3,0). PR: Graduate standing. To provide students with a basic understanding of accounting information used for investor and managerial decision making.

*BA-Accounting*

### **ACG 6255. International and Multinational Accounting**

3(3,0). PR: Graduate standing and ACG 3141 or equivalent. An examination of the environmental factors affecting international accounting concepts and standards. Cross-country differences in accounting treatments are compared.

*BA-Accounting*

### **ACG 6356. Seminar in Cost Accounting**

3(3,0). PR: ACG 5346, graduate standing, and all foundation courses for the accounting program or equivalents. A study of current selected topics in cost and management accounting.

*BA-Accounting*

### **ACG 6415. Seminar in Accounting Information Systems**

3(3,0). PR: ACG 5405 and ACG 6636. Study, audit, and control of enabling technologies affecting the accounting profession.

*BA-Accounting*

### **ACG 6425. Managerial Accounting Analysis**

3(3,0). PR: CBA Master's Program of Study Foundation Core (not open to Accounting majors). Accounting as an information measurement system for internal planning and control.

*BA-Accounting*

### **ACG 6519. Seminar in Governmental and Nonbusiness Accounting and Auditing**

3(3,0). PR: Graduate standing and all foundation courses for the accounting program or equivalents. Examination of current issues and topics with emphasis on current and future developments.

*BA-Accounting*

### **ACG 6636. Advanced Auditing Topics**

3(3,0). PR: Graduate standing and ACG 4651, STA 2023. Special topics relative to the standards, practices, and procedures followed in the audit function. Includes statistical sampling, advanced computer systems, advanced applications, and reporting problems.

*BA-Accounting*

### **ACG 6675. Operational Auditing**

3(3,0). PR: Graduate standing and ACG 4651 or ACG 4671. In depth study of the standards, principles, practices, and procedures followed in the internal audit function.

*BA-Accounting*

### **ACG 6685. Seminar in Fraud Auditing**

3(3,0). PR: ACG 4651 and graduate standing. Theory and techniques relating to fraud auditing and fraud examination.

*BA-Accounting*

### **ACG 6696. Seminar in Auditing**

3(3,0). PR: ACG 6636, Graduate standing, and all foundation courses for the accounting program or equivalents. A study of current auditing topics.

*BA-Accounting*

### **ACG 6805. Seminar in Accounting Theory**

3(3,0). PR: Graduate standing and all foundation courses for the accounting program or equivalents. An examination of the evolution of contemporary accounting theory with emphasis on current and future developments.

*BA-Accounting*

### **ACG 6835. Seminar in Ethics and Professionalism in Accounting and Auditing**

3(3,0). PR: CBA Master's Program of Study Foundation Core Courses. This course focuses on why and how theories of the professions and theories of individual ethical decision-making are applicable to the practice of accounting.

*BA-Accounting*

### **ACG 7157. Seminar in Archival Research in Accounting**

3(3,0). PR: Approval of instructor and PhD program coordinator. Extensive coverage of archival literature dealing with auditing, financial accounting, accounting regulation, and related accounting research.

*BA-Accounting*

**ACG 7399. Seminar in Behavioral Accounting Research**  
3(3,0). PR: Admission to doctoral program, ACG 7157, and C.I. Extensive study of the theoretical aspects and empirical literature related to accounting-based judgement/decision processes and the behavioral implications of accounting.  
*BA-Accounting*

**ACG 7826. Seminar in the Social and Organizational Context of Accounting**  
3(3,0). PR: Instructor and PhD program coordinator consent. This course provides the student with an appreciation for the body of accounting knowledge that investigates accounting as a practice carried out within social and organizational contexts.  
*BA-Accounting*

**ACG 7885. Research Foundations in Accounting**  
3(3,0). PR: Instructor and PhD program coordinator consent. This course provides doctoral students with an intellectual foundation in research and research methods that are applicable in the study of accounting.  
*BA-Accounting*

**ACG 7887. Accounting Research Forum**  
1(1,0). PR: Admission to doctoral program. Research and pedagogical issues in accounting, including research presentations by faculty, doctoral students, and invited scholars. May be taken for 4 hours credit.  
*BA-Accounting*

**ACG 7888. Seminar in Critical Accounting and AIS**  
3(3,0). PR: Instructor and PhD program coordinator consent. This course provides an in-depth understanding of the critical accounting and AIS literature and the knowledge and skills necessary to undertake scholarly research in the area.  
*BA-Accounting*

**ACG 7915. Directed Research in Accounting**  
3(3,0). PR: GEB 7910 and C.I. Advanced study in specialized areas of accounting research. Study designed to lead toward publishable research or student's dissertation. By definition, topical areas will vary.  
*BA-Accounting*

**ACG 7917. Advanced Research Methods in Accounting and Accounting Information Systems Rch**  
3(3,0). PR: Approval of instructor and PhD program coordinator. Advanced study in specialized areas of accounting and AIS research. By definition, topical areas will vary.  
*BA-Accounting*

**ADV 6209. Advertising and Society**  
3(3,0). A study of the social and ethical impact of advertising focusing on the development and presentation of advertising messages.  
*COS-Communication*

**AFA 5930. Topics in African American Studies**  
3(3,0). PR: Graduate status or senior standing or C.I. This interdisciplinary seminar uses primary texts to examine the impact of black culture, aesthetic and philosophical ideas on 20th century American society.  
*CAH-African American Studies*

**AFH 5806. The Historiography of Slavery in Africa**  
3(3,0). PR: Graduate status or senior standing or C.I. Course covers the central issues and controversies in the historiography of slavery in Africa.  
*CAH-History*

**AMH 5116. Colloquium in U.S. Colonial History**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and discussion of the literature on selected topics in colonial American history.  
*CAH-History*

**AMH 5137. Colloquium in U.S. Revolutionary Period**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in the Revolutionary Era, 1763-1789.  
*CAH-History*

**AMH 5149. Colloquium in Early U.S. History, 1789-1815**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics of the early national period.  
*CAH-History*

**AMH 5169. Colloquium in Age of Jackson**  
3(3,0). PR: Graduate status or senior standing or C.I. Intensive reading and class discussion on selected topics of the Jacksonian age.  
*CAH-History*

**AMH 5176. Colloquium in Civil War and Reconstruction**  
3(3,0). PR: Graduate status or senior standing or C.I. Intensive reading and class discussion on selected topics of the Civil War and Reconstruction era.  
*CAH-History*

**AMH 5219. Colloquium in Late 19th Century U.S.**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics of late 19th century U.S.  
*CAH-History*

**AMH 5296. Colloquium in 20th Century U.S.**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion on selected topics in 20th century U.S. May be used in the degree program a maximum of four times only when course content is different.  
*CAH-History*

**AMH 5391. Colloquium in U.S. Cultural History**  
3(3,0). PR: Graduate status or senior standing or C.I. Students will read and discuss a common or diverse body of the significant literature in the field.  
*CAH-History*

**AMH 5406. Colloquium in American South**  
3(3,0). PR: Graduate status or senior standing or C.I. Intensive reading and class discussion on selected topics of Southern history from colonial origins to the present.  
*CAH-History*

**AMH 5446. Colloquium in U.S. Frontier**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics of frontier history.  
*CAH-History*

**AMH 5515. Colloquium in U.S. Diplomatic History**  
3(3,0). PR: Graduate status or senior standing or C.I. A survey of the historical literature of American foreign policy. May be repeated for credit only when course content is different.

*CAH-History*

**AMH 5566. Colloquium: Women in American History**  
3(3,0). PR: Graduate status or senior standing or C.I. Intensive reading and class discussion on selected topics of Women in American History from colonial time to the present.

*CAH-History*

**AMH 5937. AP American History**

3(3,0). PR: Graduate status or senior standing or C.I. Participants will enhance their knowledge of weighing evidence and interpretations presented in historical scholarship with respect to the social, cultural, intellectual, economic, and political-diplomatic history of the U.S.

*CAH-History*

**AMH 6429. Seminar in Community and Local History**  
3(3,0). PR: Graduate standing. This seminar will introduce students to historiography, methodology and first hand experience on conducting a community history based on local and church archives.

*CAH-History*

**AMH 6591. Seminar in Documentary Editing**

3(3,0). PR: Graduate standing. This course provides an introduction to the theory and practical skills involved in documentary editing.

*CAH-History*

**AMH 6592. Seminar in Oral History**

3(3,0). PR: Graduate standing. This course is designed to expose students to the use of oral history as a research technique and to provide experience in conducting professional oral history interviews.

*CAH-History*

**AMH 6939. Seminar in U.S. History**

3(3,0). Research seminar on selected topics in U.S. history. May be repeated for credit only when course content is different.

*CAH-History*

**AML 5076. American Literature: Colonial to Contemporary**

3(3,0). PR: Graduate status or senior standing or C.I. Intended for graduate students and future teachers of America Literature, this course surveys texts produced in America from the colonial period to the present.

*CAH-English*

**AML 5156. Modern American Poetry**

3(3,0). PR: Graduate status or senior standing or C.I. Study of trends, modes, major figures (Eliot, Pound, D.H. Lawrence, Stevens, Hart, Crane, Moore, W.C. Williams, etc.) within the Modernist movement in American poetry.

*CAH-English*

**ANG 5100. Archeological Sciences**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Field and laboratory methods routinely used in archeology and forensic archeology, including instrumentation.

*COS-Anthropology*

**ANG 5165. Maya Field Research**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Practical application of method and theory during primary in field research in the Maya area.

*COS-Anthropology*

**ANG 5166. Problems in Maya Studies**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. In-depth study of current methodological, theoretical, and/or topical problems in Maya Studies.

*COS-Anthropology*

**ANG 5167. Maya Hieroglyphs**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. The study of Maya writing, the translation of Maya hieroglyphs, and the significance of translations to reconstructions of ancient Maya culture.

*COS-Anthropology*

**ANG 5228. Maya Iconography**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Study and interpretation of ancient Maya iconography as reflected in art, artifacts, and constructed features.

*COS-Anthropology*

**ANG 5272. Culture, Power and Development**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Origins and contemporary ramifications of underdevelopment and disempowerment in the world system from an anthropological perspective.

*COS-Anthropology*

**ANG 5307. Peoples and Cultures of Latin America**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Latin American culture focusing on indigenous history, colonialism, traditional peoples, social change, and modernization.

*COS-Anthropology*

**ANG 5341. Caribbean Cultures**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Historical and contemporary overview of the societies and cultures of the Caribbean region, including effects of colonization by the Dutch, Spanish, British, and French.

*COS-Anthropology*

**ANG 5437. Anthropology of Tourism**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Anthropology of tourism in U.S. and world regions, including impacts on local peoples, cultures, and environments.

*COS-Anthropology*

**ANG 5467. Nutritional Anthropology**

3(3,0). PR: One course in Social Sciences (min 2000 level) and one course in Biological Sciences (min 2000 level) or Consent of Instructor. Graduate status or senior standing or C.I. The biological, social, cultural, psychological, and environmental influences of food consumption and physiological status. Perspectives are cross-cultural, evolutionary, ecological.

*COS-Anthropology*

**ANG 5620. Language and Culture**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Language as an integral part of human culture and behavior, focusing on cross cultural issues that affect cultural competency.

*COS-Anthropology*

**ANG 5622. Language, Culture and Pedagogy**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Linguistic and cultural issues in the learning needs of students from culturally diverse populations.

*COS-Anthropology*

**ANG 5738. Advanced Medical Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Advanced topics in ethnography of medical traditions and anthropological approaches to the study of health and disease.

*COS-Anthropology*

**ANG 5741. Mortuary Archaeology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Funerary customs and human remains; basic data collection, skeletal analysis, and comparative study of mortuary ritual--ancient and modern.

*COS-Anthropology*

**ANG 5742. Problems in Forensic Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Current issues and topics in forensic anthropology.

*COS-Anthropology*

**ANG 6110. Archaeological Theory and Method**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. History and current theory and methods used by archaeologists to interpret past behavior.

*COS-Anthropology*

**ANG 6123. Forensic Archeology Field Methods**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Application of archeological techniques to the search, recovery, excavation and documentation of modern human remains.

*COS-Anthropology*

**ANG 6168. The Ancient Maya**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Overview of the archaeology of the ancient Maya of Mexico, Belize, Guatemala, and upper Mexico.

*COS-Anthropology*

**ANG 6181C. GIS Applications in Archaeology**

3(2,2). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Application of global information systems methodology for the documentation of archeological and forensic sites.

*COS-Anthropology*

**ANG 6324. Contemporary Maya**

3(3,0). PR: Bachelor's degree or C.I. Overview of the cultures and peoples comprising the contemporary Maya of Central America.

*COS-Anthropology*

**ANG 6466C. Advanced Human Osteology**

3(2,2). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Advanced seminar on methods and theory pertaining to the study of the human skeleton.

*COS-Anthropology*

**ANG 6587. Seminar in Biological Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Topics in biological anthropology including focus on human biological variation and adaptation.

*COS-Anthropology*

**ANG 6701. Seminar in Applied Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Anthropological perspectives and methods in the resolution of human problems in a cross-cultural setting, including issues of achieving cultural competence in a globalizing world.

*COS-Anthropology*

**ANG 6740C. Advanced Forensic Anthropology**

3(2,2). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Advanced theory and laboratory methods in forensic anthropology, including forensic skeletal analysis and interpretation.

*COS-Anthropology*

**ANG 6801. Ethnographic Research Methods**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Ethnographic research techniques and praxis: data collection and analysis, writing ethnographies, and research presentation.

*COS-Anthropology*

**ANG 6930. Seminar in Cultural Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Theoretical foundations and contemporary issues in the study of living cultures.

*COS-Anthropology*

**ANG 6931. Proseminar in Anthropology**

3(3,0). PR: Admission to Anthropology MA, Maya Studies GC, or C.I. Central concepts, theories, resources, and methods fundamental to cultural anthropology, human ecology, physical anthropology, and archaeology.

*COS-Anthropology*

**ARE 5251. Art for Exceptionalities**

3(2,1). Concepts, principles, and methods of integrating art processes into the education of the physically, emotionally, and mentally handicapped.

*ED-Teaching & Learning Princ*

**ARE 5255. Arts in Recreation**

3(2,1). Art activities and experiences appropriate for use in playground, leisure services, occupational orientation and other recreational areas.

*ED-Teaching & Learning Princ*

**ARE 5359. Teaching Art K-12**

4(4,0). PR: Admission to MA in Art Education, graduate standing or C.I. Transition from university art practices to public school teaching of art. Organize, design, and analyze art learning for students K-12.

*ED-Teaching & Learning Princ*

**ARE 5454. Studio Experiences in Art Education**

3(3,0). PR: Graduate admission or C.I. Materials available for instruction in public schools will be explored in depth in relation to their appropriateness and productive qualities. May be repeated for credit.

*ED-Teaching & Learning Princ*

**ARE 5648. Contemporary Visual Arts Education**

3(3,0). PR: ARE 4443 or C.I. Continued study of current programs and innovations in public school Visual Arts Programs.

*ED-Teaching & Learning Princ*

**ARE 6195. Teaching Art Appreciation with Interdisciplinary Strategies**

3(2,1). PR: Graduate status and public school teaching experience. Focuses on the examination of art appreciation examples and concepts toward planning curriculum (interdisciplinary for the study of art history, criticism, and aesthetics).

*ED-Teaching & Learning Princ*

**ARE 6450. K-12 Instructional Materials**

3(3,0). PR: Graduate standing or C.I. A historical examination of art education curriculum along with developing learning experiences and visual resources (slides, transparencies, technology) from art works and documentation.

*ED-Teaching & Learning Princ*

**ARE 6666. Arts Advocacy**

3(2,1). The study and development of plans to produce arts advocacy programs for the public school system.

*ED-Teaching & Learning Princ*

**ARE 6905. Research Trends in Art Education**

3(3,0). PR: EDF 6481. This course will further prepare art education graduate students to identify and review landmark research and conduct relevant art education research. May be repeated for credit.

*ED-Teaching & Learning Princ*

**ARH 5897. Advanced Seminar in Art History**

3(3,0). PR: ARH 2050 and ARH 2051 or C.I. Research methods on various topics including: major artist, monument, cultural period or theme.

*CAH-Art*

**ART 5109C. Multi-Cultural Crafts Design**

3(2,4). PR: ART 2201C, ART 2203C, ART 2300C, ART 2301C, graduate status or senior standing, or C.I. The content of this course will include an appreciation for and the production of Western and Non-Western art forms.

*CAH-Art*

**ART 5280C. Serial Content and Classic Form I**

3(3,3). PR: Admission to MFA. Studio course exploring serial imaging history, pictographs, alphabet development, typographic design, and the computer as sequenced design concepts and tools.

*CAH-Art*

**ART 5284. Design Theory and Methods**

3(3,0). PR: Admission to MFA or C.I. Introduction to semiotic theory, communication theory, perceptual codes, human factors and visual rhetoric.

*CAH-Art*

**ART 5670C. Digital Illustration**

3(2,4). CR: ART 6683C. Methods and media effects usually associated with traditional illustration in a digital platform.

*CAH-Art*

**ART 5694. Crosscultural Electronic Art and Design**

3(3,0). PR: Admission to MFA. Explores digital/electronic art and technology from mid 20th century to present. Explores key electronic artists and issues of the "arts electronica" into the present.

*CAH-Art*

**ART 5695. WebArt I**

3(3,0). PR: Admission to MFA. Students will explore the web and experiment with pertinent software, as well as design and implement websites. Projects will be determined at the outset of each semester.

*CAH-Art*

**ART 5696. Art, Design and Human Interactions**

3(3,0). PR: Admission to MFA. Exploration and design of interface interactions systems and technologies in contemporary society and culture including place making, way finding, electronic interface design, and publication design.

*CAH-Art*

**ART 5698. Concourse I**

3(3,0). PR: ART 5910 and ART 5280C and ART 5694, or C.I. Digital reproduction of studio works.

*CAH-Art*

**ART 5745. Physical and Virtual Sculpture**

3(3,0). PR: Acceptance to MFA in Studio Art and the Computer or C.I. A course exploring historical (tactile) and contemporary (virtual) approaches to the creation of 3D sculptural objects.

*CAH-Art*

**ART 5811C. The Professional Practice of Art**

3(3,1). PR: ART 2201C, ART 2203C, ART 2300C, ART 2301C (no graduate level prerequisite), graduate status or senior standing, or C.I. Seminar class on political information pertaining to professional practices in the art world. Overview of inventory processing, accounting, and the marketing of art.

*CAH-Art*

**ART 5910. Studio Concentration I**

3(3,0). PR: Admission to MFA. Course is the primary for production of work in studio. Students will meet periodically with faculty to discuss progress. Professor will meet with the whole class periodically in order to facilitate a group critique of work completed. May be used in the degree program a maximum of three times.

*CAH-Art*

**ART 5934. Concepts of Contemporary Art**

3(3,0). PR: Graduate standing or C.I. Current issues in contemporary international art. Graded S/U.

*CAH-Art*

**ART 5941. Graduate Practicum I**

1(1,0). PR: Web Art I, graduate status, or C.I. Candidates with cross-disciplinary interests will discuss and analyze issues in digital art making via the internet. Students will use this information to develop projects in their specialization.

*CAH-Art*

**ART 6281C. Serial Content and Classic Form II**

3(3,3). PR: Content and Form I. Studio course exploring the book form via digital technology (for book history, essential basic design principles, and typographical designs) and traditional methods.

*CAH-Art*

**ART 6683C. Time Arts**

3(3,0). PR: Admission to MFA program or C.I. Students explore experimental, innovative and simplistic approaches to the visual representation of movement in a wide variety of analog and digital media.

*CAH-Art*

**ART 6687. Research Concentration I**

3(3,0). PR: ART 5910, ART 5698 and ART 5284. Apply artistic techniques from prior courses to produce an interactive body of work delivered on web, DVD, video, etc.

*CAH-Art*

**ART 6689. Research Concentration II**

3(3,0). PR: ART 6687 and PR: or CR: ART 6699. Continuation of Research Concentration I. Produce an interactive body of art work under a unified theme.

*CAH-Art*

**ART 6697. Web Art II**

3(3,0). PR: ART 5695, graduate standing, or C.I. Students explore various programs and pertinent software used in website design and implementation.

*CAH-Art*

**ART 6699. Concourse II**

3(3,0). PR: ART 5698. Continuation of Concourse I. Digital work used to create group web exhibit and interactive portfolio.

*CAH-Art*

**ART 6743C. Intermedia Sculpture**

3(3,3). PR: Admission to MFA. Enhancing material sense and repertoire regarding material selection, combination, and contextualization in static and dynamic projects. Design integration and enhanced structural awareness via media emphasized.

*CAH-Art*

**ART 6911. Studio Concentration II**

3(3,0). PR: Admission to MFA and ART 5910. Continuation of Concentration I. The principle class for studio work production. May be used in the degree program a maximum of two times.

*CAH-Art*

**ART 6930. Graduate Seminar**

1(1,0). PR: Admission to MFA. Lecture and interactive discussion centers upon art, aesthetics, culture, technology, and industry in relation to computer art and design. May be used in the degree program a maximum of three times.

*CAH-Art*

**ART 6942. Graduate Practicum II**

1(1,0). PR: Web Art I, Graduate Practicum I. Candidates with cross-disciplinary interests will discuss and analyze digital art making via the internet. Students will apply principals from Practicum I and Internet projects.

*CAH-Art*

**ASH 5227. The Arab-Israeli Conflict**

3(3,0). PR: Graduate status or senior standing or C.I. This course examines the history of the Arab-Israeli conflict, placing particular emphasis on its origins in 19th century imperialism and Zionism.

*CAH-History*

**ASH 5408. Colloquium in Modern China**

3(3,0). PR: Graduate status or senior standing or C.I. Course explores works of scholarship in modern China including the rise of Communism, Chinese women and Sino-American relations.

*CAH-History*

**AST 5165. Planetary Atmospheres**

3(3,0). PR: Mechanics PHY 3220 and Modern Physics 3101, graduate status or senior standing, or C.I. This course will examine the physical and chemical processes that govern the behavior of the atmosphere of Earth and the other planets.

*COS-Physics*

**AST 5765. Advanced Astronomical Data Analysis**

3(3,0). PR: MAC 2313, a 3000-level or higher course in astronomy or planetary science, or C.I. Advanced astronomical data formation and acquisition, detector physics, measurement extraction, error analysis, modeling, computer programming, statistics, interpretation, and written and oral presentation of results.

*COS-Physics*

**BCH 6740. Advanced Biochemistry**

3(3,0). PR: BCH 4053 and BCH 4054 or C.I. Biochemistry focusing on enzymology, regulation of the activity of enzymes and cellular chemical activity, and biochemical methods to study proteins.

*COS-Chemistry*

**BME 5572. Biomedical Nanotechnology**

3(3,0). PR: EEE 3350 or C.I. Human Physiology, Bioelectric Phenomena and Neurons, Nanoelectronics for fabrication of biochips for human biomedical applications, self-assembly, bioelectronics, moral and ethical issues.  
*ECS-Electrical & Computer Eng*

**BOT 5485C. Terrestrial Cryptogams**

3(2,3). PR: BOT 4303C, graduate status or senior standing, or C.I. A lecture-laboratory survey course on the biodiversity and classification of terrestrial-cryptogams (bryophytes, ferns, and fern allies) with special emphasis on those found in Florida.  
*COS-Biology*

**BOT 6623C. Plant Ecology**

4(3,3). PR: PCB 3044, and graduate standing or C.I. The study of the abiotic and biotic processes that control the distribution of terrestrial flora at local, landscape, and global scales.  
*COS-Biology*

**BSC 5258L. Tropical Biology Research and Conservation**

3(0,3). PR: Graduate standing or C.I. Research and conservation in New World tropics, including a field trip to Belize. Tropical biodiversity and forest ecology, integrating conservation strategies in research and communication.  
*COS-Biology*

**BSC 5408L. Advanced Biology Laboratory Techniques**

3(0,9). PR: BS degree, C.I. This course will emphasize those biological techniques and resources necessary for students about to begin thesis research. Individual and small group instruction in current laboratory techniques, literature searches, and hands-on practice of techniques will be stressed. May not be repeated for credit.  
*COS-Biology*

**BSC 5418. Tissue Engineering**

3(3,0). PR: Graduate standing. Introduction to Tissue Engineering with a special emphasis on the current status of the field, on novel methods and on cell biomaterial interactions.  
*COM-Molecular & Microbiology*

**BSC 5817. Biology for AP Teachers**

3(3,0). PR: Graduate status or senior standing or C.I. Participants will perform and evaluate the 12 required labs, analyze the design and grading of the exam, and develop a representative program.  
*COS-Biology*

**BSC 5821. Biogeography**

4(4,0). PR: Graduate standing or C.I. Study of geographic variation in nature, ranging from past to present and from genes to ecosystems.  
*COS-Biology*

**BSC 6407C. Laboratory Methods in Molecular Biology**

4(2,4). PR: Graduate standing, PCB 4524 or C.I. Experimental techniques and design in laboratory biological research.  
*COM-Molecular & Microbiology*

**BSC 6431. Practice of Biomolecular Science**

2(2,0). PR: Graduate standing. Introduces students to the practice of biomolecular science. Graded S/U.  
*COM-Molecular & Microbiology*

**BSC 6432. Structure-Function-Relationships of Biomolecular Science I**

5(5,0). PR: 1) Acceptance in the Molecular Biology and Microbiology master's program, and 2) Biochem I, or Molecular Biology 1 and 2, or Cell Biology. First semester of a two semester sequence with lectures and literature discussion of structures, functions and relationships of action and functions of biomolecules.  
*COM-Molecular & Microbiology*

**BSC 6433. Structure-Function-Relationships of Biomolecular Science II**

5(5,0). PR: PCB 3522, and PCB 4524 or BCH 4053 or PCB 3023. Graduate standing. Second semester of a two semester sequence with lectures, literature discussion of structure - function - relationships of action and functions of biomolecules.  
*COM-Molecular & Microbiology*

**BSC 6614. Advanced Topics in Systematics**

1(1,0). PR: An evolution course, C.I. admission to graduate program. Discussion of new cutting edge topics in Systematics and hands on learning of computer data analysis in this field.  
*COS-Biology*

**BSC 6950. Biological Research Resources**

3(3,0). PR: Graduate status. Research methodology including literature resources, problem conceptualization, research proposals, data collection, and analysis and presentation of findings.  
*COS-Biology*

**BTE 6935. Seminar in Business Education**

3(3,0). PR: Graduate standing or C.I. Current problems, issues, and trends in business education.  
*ED-Teaching & Learning Princ*

**BUL 5332. Advanced Business Law Topics**

3(3,0). PR: Admission to graduate program, or Management major or minor in term of graduation, BUL 3130. Advanced business law topics including coverage of the Uniform Commercial Code, torts, commercial paper, and secured transactions.  
*BA-Accounting*

**BUL 5810. Legal and Social Environment of Business**

3(3,0). PR: Admission to graduate program. Analysis of the legal and ethical environment of business, the effects of legislation and regulation on business activity, and the role of law and ethics in the decision-making process.  
*BA-Accounting*

**BUL 6444. Law and Ethics**

3(3,0). PR: Accepted for graduate study in College of Business Administration. Legal and ethical issues inherent in business decision making, including the effects of legislation, regulation, diversity, harassment, and other workplace issues on business activity.  
*BA-Accounting*

**CAP 5015. Multimedia Compression on the Internet**  
3(3,0). PR: Seniors and graduate students with interest in internet technology. Multimedia data; internet technology; entropy; compression methods; lossy compression; vector quantization; transform coding; wavelet video compression; model based compression.  
*ECS-Computer Science*

**CAP 5055. AI for Game Programming**  
3(3,0). PR: CS Foundation Exam or EEL 4851C or C.I. Surveys cutting-edge AI techniques for video games and board games and contrasts them with more traditional approaches.  
*ECS-Computer Science*

**CAP 5415. Computer Vision**  
3(3,0). PR: COP 3503C, MAC 2312 and COT 3960. Image formation, binary vision, region growing and edge detection, shape representation, dynamic scene analysis, texture, stereo and range images, and knowledge representation.  
*ECS-Computer Science*

**CAP 5419. 3D Computer Vision**  
3(3,0). PR: C.I. 2D/3D Projective Geometry, Projective Transformation Estimation, Camera Calibration, Single View Modeling, Bi-focal Modeling, Fundamental Matrix, Stratified Structure, Homography, Tri-focal Tensor, Auto-Calibration, Chirality.  
*ECS-Computer Science*

**CAP 5510. Bioinformatics**  
3(3,0). PR: Background in programming language or molecular biology. This course introduces problems, concepts, algorithms, and applications in Bioinformatics. It covers essential topics such as sequence alignment and prediction of gene and protein structure.  
*ECS-Computer Science*

**CAP 5512. Evolutionary Computation**  
3(3,0). This course covers the field of evolutionary computation, focusing on the theory and application of genetic algorithms.  
*ECS-Computer Science*

**CAP 5610. Machine Learning**  
3(3,0). PR: CAP 4630 or C.I. Origin/evaluation of machine intelligence; machine learning concepts and their applications in problem solving, planning and "expert systems" symbolic role of human and computers.  
*ECS-Computer Science*

**CAP 5636. Advanced Artificial Intelligence**  
3(3,0). PR: CAP 4630. AI theory of knowledge representation, "expert systems", memory organization, problem solving, learning, planning, vision, and natural language.  
*ECS-Computer Science*

**CAP 5725. Computer Graphics I**  
3(3,0). Architecture of graphics processors; display hardware; principles of programming and display software; problems and applications of graphic systems.  
*ECS-Computer Science*

**CAP 6133. Advanced Topics in Computer Security and Computer Forensics**  
3(3,0). PR: COP 5611, COT 5405, CNT 5008. Advanced topics in computer security and forensics such as cryptography; automatic intrusion detection, advanced pattern matching, statistical techniques, firewalls, and vulnerability scanning.  
*ECS-Computer Science*

**CAP 6135. Malware and Software Vulnerability Analysis**  
3(3,0). PR: CNT 4704 or equivalent and CGS 5131, or C.I. Analyzes computer malicious codes, such as virus, worm, trojan, spyware, and software vulnerabilities, such as buffer-overflow.  
*ECS-Computer Science*

**CAP 6411. Computer Vision Systems**  
3(3,0). PR: CAP 5415. Recent systems contributing toward recognition, reasoning, knowledge representation, navigation, and dynamic scene analysis. Comparisons, enhancements, and integrations of such systems.  
*ECS-Computer Science*

**CAP 6412. Advanced Computer Vision**  
3(3,0). PR: CAP 5415. Computational theories of perception, shape from IX' techniques, multi-resolution image analysis, 3-D model based vision, perceptual organization, spatiotemporal model, knowledge-based vision systems.  
*ECS-Computer Science*

**CAP 6545. Machine Learning Methods for Bioinformatics**  
3(3,0). PR: CAP 5510 or C.I. Machine learning methods and their applications in Bioinformatics.  
*ECS-Computer Science*

**CAP 6616. Neuroevolution and Generative and Developmental Systems**  
3(3,0). PR: COP 3503C or C.I. Focuses on evolving neural networks for difficult sequential decision and control tasks and associated issues in efficient encoding and representation.  
*ECS-Computer Science*

**CAP 6637. Affective Computing with Artificial Intelligence**  
3(3,0). PR: CAP 5636. Improve understanding of functional role of affect. Integrate emotion recognition techniques. Synthesize emotion and expression of emotion for autonomous agents. Understand affective computing social implications.  
*ECS-Computer Science*

**CAP 6640. Computer Understanding of Natural Language**  
3(3,0). PR: CAP 5636. A study of the different approaches to build programs to understand natural language. The theory of parsing, knowledge representation, memory, and inference will be studied.  
*ECS-Computer Science*

**CAP 6671. Intelligent Systems**  
3(3,0). PR: CAP 5610. Study of computer systems exhibiting intelligent attributes, particularly learning; basic concepts related to characteristics, capabilities, design, and principles of operation; discussion of relevant philosophical/social issues.  
*ECS-Computer Science*



**CAP 6675. Complex Adaptive Systems**

3(3,0). PR: Graduate standing or C.I. This course is an introduction to the field of complex adaptive systems and will cover basic definitions, theoretical background, and empirical analyses.

*ECS-Computer Science*

**CAP 6676. Knowledge Representation**

3(3,0). PR: CAP 5636. Topics covered include terminological languages, logicist approaches, ontologies, ontological and conceptual relativity, processes, intangibles, time, building large knowledge bases, and complexity analysis.

*ECS-Computer Science*

**CAP 6701. Real-time Realistic Rendering**

3(3,0). PR: CAP 4720 or CAP 5725. GPU Programming; State-of-the-art algorithms for: Real-time rendering of a lighting effects and realistic materials; Real-time volume rendering; real-time simulation and rendering of smoke.

*ECS-Computer Science*

**CAP 6721. Ray Tracing**

3(3,0). PR: CAP 5725, programming experience. Advanced graphics: Implementation of ray tracing algorithm plus extensions, spatial subdivisions, MC sampling, camera models, texture mapping, instancing.

*ECS-Computer Science*

**CAP 6835. Visual Simulation, Rendering, and Photometry**

3(3,0). PR: CAP 5415. Modeling: SFM, space carving, voxel coloring; image-based rendering: morphing, plenoptic resampling, lumigraph, layered 2.5D representation; Image-based photometry: light, color constancy, BRDF, intrinsic images, invariants.

*ECS-Computer Science*

**CCE 5006. Introduction to Construction Industry**

3(3,0). PR: Post-bac status or C.I. This course introduces students to the construction industry. Topics include project evaluation, project phases, project delivery systems, contracts, estimating and schedule drawing and specifications. Research paper required.

*ECS-Civil & Environmental*

**CCE 5036. Construction Estimation and Scheduling**

3(3,0). PR: C.I. Provides students with an understanding of estimating and scheduling of construction projects. Topics include detailed estimates, scheduling and project control. Research paper required.

*ECS-Civil & Environmental*

**CCE 5205. Construction Methods**

3(3,0). PR: Post-bac status or C.I. This class covers construction project evaluation principles along with construction methods for civil and structural systems.

*ECS-Civil & Environmental*

**CCE 5406. Construction Equipment and Productivity**

3(3,0). PR: C.I. Selection of appropriate equipment based on operational parameters. Principles of construction productivity measurement and analysis. Discrete event simulation.

*ECS-Civil & Environmental*

**CCE 5815. Mechanical and Electrical Systems for Buildings**

4(4,0). PR: C.I. This course covers the design and construction of mechanical and electrical systems for buildings. Research paper required.

*ECS-Civil & Environmental*

**CCJ 5015. The Nature of Crime**

3(3,0). PR: Admission to Criminal Justice Master's program or C.I. This course provides an overview of major dimensions of crime in the U.S.; epidemiology of crime, costs of crime, and typologies of crime and criminals.

*HPA-Criminal Justice/Legal St*

**CCJ 5040. International Perspectives on Law and Justice**

6(6,0). PR: C.I. or graduate standing. Examination of the legal and criminal justice systems of other nations and territories through lecture, seminar, research and field visits.

*HPA-Criminal Justice/Legal St*

**CCJ 5073. Data Management Systems for Crime Analysis**

3(3,0). PR: Graduate standing or C.I. This course is designed to provide the conceptual basis, understanding, and skills necessary for complex crime data manipulation.

*HPA-Criminal Justice/Legal St*

**CCJ 5105. Foundations of Law Enforcement**

3(3,0). PR: C.I. Examines police role in modern society and law enforcement policy.

*HPA-Criminal Justice/Legal St*

**CCJ 5406. Research and Technology Implementation**

3(3,0). Changing roles of social and physical sciences as related to the objectives and administration of public safety agencies.

*HPA-Criminal Justice/Legal St*

**CCJ 5456. The Administration of Justice**

3(3,0). PR: Admission to Criminal Justice Master's program or C.I. This course provides an overview of the criminal justice system and a critical analysis of formal and informal processing of offenders by criminal justice agencies.

*HPA-Criminal Justice/Legal St*

**CCJ 5467. Justice and Safety System Manpower**

3(3,0). Processes essentials to administration to human resources in criminal justice and public safety agencies; structure and processes for acquisition, training, and maintenance of personnel.

*HPA-Criminal Justice/Legal St*

**CCJ 5617. Mental Disorder, Crime, and Criminal Justice**

3(3,0). PR: CCJ 5456, CCJ 5015, or C.I. An overview of the relationship between mental disorder, crime, and the criminal justice system.

*HPA-Criminal Justice/Legal St*

**CCJ 5675. Human Rights and Criminal Justice**

3(3,0). PR: Senior scholar or graduate standing or C.I. Provides in-depth analysis of the human rights movement and its potential impact upon criminal law as well as the juvenile and criminal justice systems.

*HPA-Criminal Justice/Legal St*

**CCJ 5931. Contemporary Criminal Justice Strategies**  
3(3,0). PR: Graduate standing or C.I. Graduate level analysis of contemporary crime issues and the reactions of the criminal justice system to combat those crimes at both the national and international levels. May be used in the degree program a maximum of three times.  
*HPA-Criminal Justice/Legal St*

**CCJ 5934. Criminal Justice Investigative Process**  
1(1,0). PR: Graduate standing or C.I. Advanced seminar providing students with a broad view of how criminal justice investigative processes operate. Focuses on the roles and responsibilities of agents as investigators. May be used in the degree program a maximum of four times.  
*HPA-Criminal Justice/Legal St*

**CCJ 6021. Criminal Justice Responses to Terrorism**  
3(3,0). PR: Graduate standing. Critically examines phenomena of domestic and international terrorism to give students a solid grounding of salient issues in developing crime control strategies to prevent terrorism and mount appropriate responses to incidents.  
*HPA-Criminal Justice/Legal St*

**CCJ 6038. Violent Crimes and Criminals**  
3(3,0). PR: CCJ 5456, CCJ 5015 or C.I. This course provides critical examination of violent crimes and criminals. Students will focus on gathering, reviewing, analyzing and synthesizing evidence-based data on violent crime.  
*HPA-Criminal Justice/Legal St*

**CCJ 6051. Community Justice**  
3(3,0). PR: CCJ 5015. Examines the emergence of community justice as a major perspective in the U.S. punishment system.  
*HPA-Criminal Justice/Legal St*

**CCJ 6067. Perspectives on Genocide**  
3(3,0). PR: CCJ 5456, CCJ 5015, or C.I. This course provides a critical examination of criminal justice perspectives on genocide.  
*HPA-Criminal Justice/Legal St*

**CCJ 6074. Investigative and Intelligence Analysis: Theory and Methods**  
3(3,0). PR: Graduate standing or C.I. This course is designed to familiarize the student with the complex analytical techniques and procedures used to support criminal investigations and criminal intelligence efforts.  
*HPA-Criminal Justice/Legal St*

**CCJ 6077. Advanced Crime Mapping and Analysis in Criminal Justice**  
3(3,0). PR: CCJ 5073 and Crime Mapping and Analysis in Criminal Justice or C.I. Develop advanced mapping and analysis proficiency utilizing sophisticated spatial analysis techniques.  
*HPA-Criminal Justice/Legal St*

**CCJ 6079. Crime Mapping and Analysis in Criminal Justice**  
3(3,0). PR: Graduate standing or C.I. Course provides the conceptual knowledge and practical skills to design and implement GIS based analysis of community crime problems.  
*HPA-Criminal Justice/Legal St*

**CCJ 6106. Policy Analysis in Criminal Justice**  
3(3,0). This course is designed to familiarize students

with the causes and consequences of public policy with an emphasis on criminal justice policy.  
*HPA-Criminal Justice/Legal St*

**CCJ 6118. Criminal Justice Organizations**  
3(3,0). PR: Graduate standing or C.I. Theory and research on complex organizations are applied in criminal justice settings. Alternative organizational goals, structures, staffing patterns, management styles and planning strategies are examined.  
*HPA-Criminal Justice/Legal St*

**CCJ 6205. American Criminal Courts**  
3(3,0). PR: Graduate standing or C.I. Critically study and evaluate day-to-day discretionary decisions of prosecutors, judges and defense attorneys and identify how their decisions shape the broad discretionary power this institution yields.  
*HPA-Criminal Justice/Legal St*

**CCJ 6217. Law and Social Control**  
3(3,0). This course will examine the types of behavior the state has sought to control and the means employed to exert such control.  
*HPA-Criminal Justice/Legal St*

**CCJ 6335. Criminal Justice Sentencing and Punishment Policy**  
3(3,0). PR: Graduate standing or C.I. This course critically examines the impact of sentencing policy on the correctional system, offenders, their families and the communities to which they return upon release.  
*HPA-Criminal Justice/Legal St*

**CCJ 6362. Death Penalty**  
3(3,0). PR: Graduate standing or C.I. Examines death penalty policies throughout the U.S., their administration, and deterrent issues.  
*HPA-Criminal Justice/Legal St*

**CCJ 6366. Criminal Justice Responses to Domestic Violence**  
3(3,0). PR: CCJ 6704 or C.I. This course examines the criminal justice response to domestic violence. Particular emphasis is placed on historical responses, policy as well as an examination of the current role of police, prosecutors, defense attorneys and magistrates in handling domestic assault and battery.  
*HPA-Criminal Justice/Legal St*

**CCJ 6431. Leadership and Ethics in Criminal Justice**  
3(3,0). PR: CCJ 5456 or C.J. Examines the leadership issues faced by decision makers in the criminal justice system.  
*HPA-Criminal Justice/Legal St*

**CCJ 6485. Issues in Justice Policy**  
3(3,0). Examination of selected issues of public policy regarding the functions and roles of criminal justice agencies vis-a-vis other government departments or agencies and public purposes. May be repeated for credit.  
*HPA-Criminal Justice/Legal St*

**CCJ 6669. Race, Crime and Justice**

3(3,0). PR: Graduate standing or C.I. This course is designed to acquaint students of all disciplines with the operational dynamics of race, crime and justice.  
*HPA-Criminal Justice/Legal St*

**CCJ 6704. Research Methods in Criminal Justice**

3(3,0). PR: Admission to Criminal Justice Master's program or C.I. An advanced examination of research methodology in criminal justice settings on such topics as problem conceptualization, sampling designs, research proposals, data collection, and evaluation techniques.  
*HPA-Criminal Justice/Legal St*

**CCJ 6705. Applied Criminal Justice Research**

3(3,0). Upon successful completion of this course the student will gain an understanding of the major philosophical, theoretical, and conceptual approaches to evaluation research.  
*HPA-Criminal Justice/Legal St*

**CCJ 6706. Quantitative Methods and Computer Utilization in Criminal Justice**

3(3,0). PR: Admission to Criminal Justice Master's program or C.I. Application of statistical software to quantitative and qualitative methods in Criminal Justice.  
*HPA-Criminal Justice/Legal St*

**CCJ 6714. Advanced Quantitative Methods in Criminal Justice**

3(3,0). PR: CCJ 6706. Application of multivariate linear and nonlinear statistical techniques to criminal justice issues. Focus is on selecting appropriate procedures, computer-based analysis and interpreting and applying results.  
*HPA-Criminal Justice/Legal St*

**CCJ 6730. Planned Change and Innovation in Criminal Justice**

3(3,0). This course will provide participants with an understanding of planned individual and organizational change so that they may become successful agents of such change  
*HPA-Criminal Justice/Legal St*

**CCJ 6934. Criminal Justice, Crime, and Popular Culture**

3(3,0). PR: Graduate standing or C.I. Explore how Criminal Justice System, criminals, and crime are portrayed in entertainment and news media, and the effects portrayals have on society and criminal justice.  
*HPA-Criminal Justice/Legal St*

**CCJ 6938. Special Topics in Criminal Justice**

Variable. Students are exposed to in-depth coverage of a particular contemporary problem in criminal justice, for example, the death penalty or the influence of the media on crime and punishment.  
*HPA-Criminal Justice/Legal St*

**CCJ 6946. Criminal Justice Practicum**

Variable. Students will undertake a significant research project in a criminal justice agency.  
*HPA-Criminal Justice/Legal St*

**CCJ 7457. Seminar in Criminal Justice Theory**

3(3,0). PR: Admission to PhD program or C.I. Examination of the theoretical basis of criminal justice policies. Focus on retribution, incapacitation, deterrence, rehabilitation, and restoration.  
*HPA-Criminal Justice/Legal St*

**CCJ 7930. Seminar in Criminal Justice Policy Analysis**

3(3,0). PR: Admission to PhD program or C.I. Criminal justice policy formulation, implementation, and evaluation, with special emphasis on problems of conceptualization and methodology.  
*HPA-Criminal Justice/Legal St*

**CDA 5106. Advanced Computer Architecture I**

3(3,0). PR: CDA 4150C. Instruction set architectures, processor implementation, memory hierarchy, pipelining, computer arithmetic, vector processing, and I/O.  
*ECS-Computer Science*

**CDA 5110. Parallel Architecture and Algorithms**

3(3,0). PR: COT 4210, CDA 5106. General-purpose vs. special-purpose parallel computers; arrays, message-passing; shared-memory; taxonomy; parallelization techniques; communication synchronization and granularity; parallel data structures; automatic program restructuring.  
*ECS-Computer Science*

**CDA 5215. Architecture and Design of VLSI**

3(3,0). PR: CDA 4150C or equivalent. Overview of VLSI technology. Logical design of basic subsystems; integrated system design tools; design of a VLSI computer system.  
*ECS-Computer Science*

**CDA 5530. Performance Models of Computers and Networks**

3(3,0). PR: Senior standing or beginning graduate student. Performance Models of Computer Systems and Networks using probability models and discrete event simulations. Queuing Theory and modeling tools.  
*ECS-Computer Science*

**CDA 5532. Network-Centric Computing**

3(3,0). PR: Graduate standing. Concepts in network-centric computing and process coordination in information grids.  
*ECS-Computer Science*

**CDA 6107. Parallel Computer Architecture**

3(3,0). PR: CDA 4150C, recommended: CDA 5106, graduate standing. Principles and trade-offs in the design of parallel architectures, shared-memory, message-passing, dataflow, data-parallel machines, cache coherence protocols, consistence models, and interconnection networks.  
*ECS-Computer Science*

**CDA 6211. VLSI Algorithms and Architecture**

3(3,0). PR: CDA 5215. VLSI algorithms, algorithms on regular geometries, hierarchically organized machines; illustrative algorithms: Matrix, DFT, recurrence evaluation, pattern matching, searching, sorting, graph, etc.; area-time complexity issues.  
*ECS-Computer Science*

**CEG 5015. Geotechnical Engineering II**

3(3,0). PR: CEG 4011C. Continuation of CEG 011C with emphasis on shear strength and design factors for earth pressures, bearing capacity, and slope stability.  
*ECS-Civil & Environmental*

**CEG 5700. Geo-Environmental Engineering**

3(3,0). PR: CEG 4011C. Geotechnical applications to environmental problems, groundwater flow, soil contamination and groundwater contaminate transport, geosynthetics and stability of landfill design, control of contaminated sites.  
*ECS-Civil & Environmental*

**CEG 6065. Soil Dynamics**

3(3,0). PR: CEG 4011C. Comprehensive coverage in calculating the dynamic response of foundations, presenting a variety of contemporary techniques for fields and laboratory.  
*ECS-Civil & Environmental*

**CEG 6115. Foundation Engineering**

3(3,0). PR: CEG 5015. Analysis and design of spread footings, mat foundations, retaining walls, sheeting and bracing systems and pile foundations.  
*ECS-Civil & Environmental*

**CEG 6317. Advanced Geotechnical Engineering**

3(3,0). PR: CEG 5015. Mechanics of soils and models; elasticity and plasticity of soil bodies; strength of soils and stability of soil structures.  
*ECS-Civil & Environmental*

**CEN 5016. Software Engineering**

3(3,0). PR: COP 4331C. Application of formal software processes, engineering methods, and documentation standards to the development of large scale software systems. A team project is required.  
*ECS-Computer Science*

**CEN 6081. Engineering Software Design in Distributed and Parallel Systems**

3(3,0). PR: EEL 4882 and EEL 4884C or EEL 5881. This course will focus on engineering software design, implementation, configuration and performance evaluation of distributed and parallel systems.  
*ECS-Computer Science*

**CES 5144. Matrix Methods for Structural Analysis**

3(3,0). PR: CES 4100C or C.I. Implementation of the matrix methods for structural analysis that are commonly and currently used in practice and in research, special topics such as finite element formulations, special analysis procedures, and use of software packages.  
*ECS-Civil & Environmental*

**CES 5325. Bridge Engineering**

3(3,0). PR: CES 4605 and CES 4702 or C.I. Bridge engineering fundamentals, design philosophies, analysis and design concepts for concrete and steel bridges, AASHTO specifications, Bridge rating, and introduction to Bridge health monitoring.  
*ECS-Civil & Environmental*

**CES 5606. Advanced Steel Structures**

3(3,0). PR: CES 4605. Behavior and design of steel buildings; emphasis on AISC-LRFD building code; complex connections, tension members, stability of compression members, laterally unsupported beams, frames, and beam columns.  
*ECS-Civil & Environmental*

**CES 5706. Advanced Reinforced Concrete**

3(3,0). PR: CES 4702 or C.I. Design of frames, two-way floor systems, shear walls; shear and torsion; compression field theory; inelastic analysis; wind and seismic design; introduction to prestressed concrete.  
*ECS-Civil & Environmental*

**CES 5821. Masonry and Timber Design**

3(3,0). PR: C.I. Structural properties of masonry and timber; design loads-codes and standards; analysis for axial loads, flexure and shear.  
*ECS-Civil & Environmental*

**CES 6010. Structural Reliability**

3(3,0). PR: STA 3032 and CES 4100C or equivalent course or C.I. Application of probability theory to classical and computational reliability methods for civil systems. Topics in component and system reliability, simulation, bounds, sensitivity, and model updating.  
*ECS-Civil & Environmental*

**CES 6116. Finite Element Structural Analysis**

3(3,0). PR: CES 4101 or C.I. Concept, theory, and application of the finite element method; analysis of one-, two-, and three-dimensional structural components and systems; stability and dynamics; applications.  
*ECS-Civil & Environmental*

**CES 6170. Boundary Element Methods in Civil Engineering**

3(3,0). PR: C.I. Green's theorems; integral formulations for two- and three-dimensional and axisymmetric problems of solid mechanics; applications to structural and geomechanics problems; programming.  
*ECS-Civil & Environmental*

**CES 6209. Dynamics of Structures**

3(3,0). PR: C.I. Response analysis of single and multi-degree-of-freedom systems to periodic and non-periodic excitations; continuous systems; response spectra; applications in structural engineering.  
*ECS-Civil & Environmental*

**CES 6218. Structural Stability**

3(3,0). PR: EML 5237 or equivalent. Analysis of structural elements, columns, frameworks, lateral stability. Introduction to the stability of plates. Energy and approximate methods.  
*ECS-Civil & Environmental*

**CES 6220. Wind and Earthquake Engineering**

3(3,0). PR: CES 6209 or C.I. Wind characteristics; wind effects on structures; dynamic analysis for wind loads; nature of earthquake forces; response spectra and seismic design; wind and seismic codes.  
*ECS-Civil & Environmental*

**CES 6230. Advanced Structural Mechanics**

3(3,0). PR: C.I. Review of biaxial bending and torsion; plate bending; theory of elasticity, visco-elasticity and plasticity; anisotropic elasticity and stability.

*ECS-Civil & Environmental*

**CES 6527. Nonlinear Structural Analysis**

3(3,0). PR: CES 4101 or CES 5144 or C.I. Structural nonlinear analysis theory and applications, including material and geometric nonlinearity, numerical methods and solution strategies, inelastic element formulation, and use of software packages.

*ECS-Civil & Environmental*

**CES 6715. Prestressed Concrete Structures**

3(3,0). PR: CES 4702 and CES 5706 or C.I. Prestressed concrete behavior and design; applications in building and bridge design including pre- and post-tensioned girders, floors, roofs, and walls.

*ECS-Civil & Environmental*

**CES 6840. Composite Steel Concrete Structures**

3(3,0). PR: CES 5606 and CES 5706 or C.I. Fundamentals of composite action; high performance materials, design of composite beams, slabs, beam-columns, joints; applications of prestressing; composite buildings and bridges; construction methods.

*ECS-Civil & Environmental*

**CES 6910. Research in Structural Engineering**

3(3,0). PR: C.I. Behavior and design of steel, concrete, or composite structures under cyclic, wind, earthquake, impact, or blast loading.

*ECS-Civil & Environmental*

**CET 5012. Information and Communications Infrastructure**

3(3,0). PR: Graduate standing or C.I. This course provides an overview of information systems in the technology world. Topics include hardware, software, databases and related technologies, and telecommunications systems.

*ECS-Engineering Technology*

**CET 6887. The Practice of Digital Forensics**

3(3,0). PR: CGS 5131 or C.I. Application of digital scientific techniques to solve information assurance, forensic and legal problems.

*ECS-Engineering Technology*

**CGN 5320C. Geographic Information systems**

3(2,2). Programming theory and application of Geographic Information Systems to Civil Engineering projects.

*ECS-Civil & Environmental*

**CGN 5504C. Civil Engineering Materials**

3(2,2). PR: EGN 3365, EGN 3331, or C.I. Structure, properties, and applications of materials used in civil engineering including concrete, steel, asphalt, wood, soils, and composite materials.

*ECS-Civil & Environmental*

**CGN 5506C. Asphalt Concrete Mix Design**

3(2,2). PR: CEG 4011C. Properties of asphalt, aggregate and asphalt mixtures, Marshall mix design, Hveem mix design, pavement rehabilitation.

*ECS-Civil & Environmental*

**CGN 6655. Regional Planning, Design, and Development**

3(3,0). Project course dealing with planning, design, and development of regional systems, including projections, case studies, design alternatives, environmental impact, etc.

*ECS-Civil & Environmental*

**CGS 5131. Computer Forensics I: Seizure and Examination of Computer Systems**

3(3,0). PR: Computer literacy and C.I. Legal issues regarding seizure and chain of custody. Technical issues in acquiring computer evidence. Popular file systems are examined. Reporting issues in the legal system.

*ECS-Computer Science*

**CGS 5132. Computer Forensics II: Network Security, Intrusion Detection, & Forensic Analysis**

3(3,0). PR: CGS 5131. Computer network protocols and security, network intrusion detection and prevention, digital evidence collection and evaluation, and legal issues involved in network forensics analysis.

*ECS-Computer Science*

**CHM 5225. Advanced Organic Chemistry**

3(3,0). PR: CHM 2211, graduate status or senior standing, or C.I. Theoretical and physical organic concepts of organic systems from the perspective of modern structural theory, thermodynamics, and kinetics.

*COS-Chemistry*

**CHM 5235. Applied Molecular Spectroscopy**

3(3,0). PR: CHM 3120 and CHM 2211, and graduate status or senior standing or C.I. Determination of chemical structure through interpretation of UV, IR, NMR and Mass Spectra.

*COS-Chemistry*

**CHM 5305. Applied Biological Chemistry**

3(3,0). PR: CHM 2211, and graduate status or senior standing or C.I. The identification from plants, synthesis, assessment of bioactivity, and design of pharmaceuticals and agrochemicals, as well as the impact of biotechnology in the chemical industry.

*COS-Chemistry*

**CHM 5450. Polymer Chemistry**

3(3,0). PR: CHM 2211, and graduate status or senior standing or C.I. An introduction to the chemistry of synthetic polymers. Synthetic methods, polymerization mechanisms, characterization techniques, and polymer properties will be considered.

*COS-Chemistry*

**CHM 5451C. Techniques in Polymer Science**

3(1,5). PR: CHM 2211 and CHM 3410, graduate status or senior standing, or C.I. A laboratory and lecture course designed to introduce students to the major polymerization mechanisms along with polymer characterization and processing methods using modern instrumentation.

*COS-Chemistry*

**CHM 5580. Advanced Physical Chemistry**

3(3,0). CR: CHM 3411 and PR: MAC 2313, and graduate status or senior standing or C.I. Selected topics of thermodynamics, kinetics, quantum mechanics, and structure.

*COS-Chemistry*

**CHM 5715C. Optical Materials Processing and Characterization Techniques**

3(2,3). PR: CHM 3411 and CHM 4610 or equivalent. Glasses, crystals and polymeric materials will be processed and characterized for their properties. Laboratory will emphasize material structure and physical property relationships.  
*COS-Chemistry*

**CHM 6131. Advanced Instrumental Analysis**

3(3,0). PR: CHM 6710. Advanced instrumental techniques related to luminescence spectroscopy and applications to chemical analysis.  
*COS-Chemistry*

**CHM 6278. The Organic Chemistry of Drug Design**

3(3,0). PR: CHM 2211 (or equivalent) and C.I. Drug design and action using the principles of organic chemistry.  
*COS-Chemistry*

**CHM 6440. Kinetics and Catalysis**

3(3,0). PR: CHM 3411 or equivalent. Classical kinetics with an emphasis on industrial applications and current catalysis methodologies.  
*COS-Chemistry*

**CHM 6449. Photochemistry**

3(3,0). PR: Graduate standing or C.I. Photochemistry with an emphasis on principles, mechanisms, and applications, such as photolithography, photonics, medicine, and environmental remediation.  
*COS-Chemistry*

**CHM 6492. Atomic Spectroscopy**

3(3,0). PR: CHM 3120 or C.I. Includes theory and instrumentation for atomic absorption and emission spectroscopy with focus on their applications in various fields including forensic science.  
*COS-Chemistry*

**CHM 6620. Solid State Inorganic Chemistry**

3(3,0). PR: CHM 4610, or C.I. Structure and chemistry of novel solid-state inorganic materials and their emerging applications.  
*COS-Chemistry*

**CHM 6710. Applied Analytical Chemistry**

3(3,0). PR: CHM 2211, CHM 4130C, and CHM 3411 or equivalent. Concepts in molecular structure that integrate structural, physical, and chemical properties with aspects of industrial and analytical chemistry.  
*COS-Chemistry*

**CHM 6711. Chemistry of Materials**

3(3,0). PR: CHM 2211, CHM 4130C, and CHM 3411, or C.I. Structure and properties of chemical products, with an emphasis on the correlation between molecular form and the functional properties deemed desirable for the product.  
*COS-Chemistry*

**CHM 6936. Graduate Chemistry Seminar**

1(1,0). PR: C.I. A topic of current chemical interest will be presented by students at a regularly scheduled departmental seminar. May be repeated for credit.  
*COS-Chemistry*

**CHS 5502. Principles of Forensic Science**

3(3,0). PR: Admission to Forensic Science MS program or C.I. Principles of forensic science crime scene investigation, concepts in physical and biological evidence, evidence collection and transport, discrimination and individualization of evidence.  
*COS-Chemistry*

**CHS 5503. Topics in Forensic Science**

3(3,0). PR: Graduate status or C.I. Will include the history of Forensic Science and current issues such as Digital Evidence.  
*COS-Chemistry*

**CHS 5518. The Forensic Collection and Examination of Digital Evidence**

3(3,0). PR: Adv topics in Forensic Science, graduate status, or C.I. This course will cover the nature of Digital Evidence collection and examination under the constraints of Law and courtroom procedures.  
*COS-Chemistry*

**CHS 5596. The Forensic Expert in the Courtroom**

3(3,0). PR: CHS 3533C, CHS 6535, CHS 6536, or C.I. A study of the uses of technically and scientifically trained expert witnesses at trial.  
*COS-Chemistry*

**CHS 6240. Chemical Thermodynamics**

3(3,0). PR: CHM 3411 or equivalent. Classical and statistical thermodynamics with emphasis on industrial applications and estimation methods.  
*COS-Chemistry*

**CHS 6251. Applied Organic Synthesis**

3(3,0). PR: CHM 2211 and CHM 3411. A survey of chemical syntheses from both a product-oriented standpoint and a process-oriented standpoint. Relevant examples from the pharmaceutical and agricultural chemical industries.  
*COS-Chemistry*

**CHS 6260. Chemical Unit Operations and Separations**

3(3,0). PR: CHM 3411. A study of the elements and dynamics that are fundamental to industrial separation methods and transport processes.  
*COS-Chemistry*

**CHS 6261. Chemical Process and Product Development**

2(2,0). PR: C.I. Development of chemical products and processes including the determination of technical economic feasibility; use of experiment design in the optimization of variables and scale-up methods.  
*COS-Chemistry*

**CHS 6513. QA & Bioinformation**

3(3,0). PR: C.I. and satisfaction of statistics and biology requirements. Principles of Quality Assurance a description of current industry wide standards and procedures for locating, evaluating, and processing information about DNA.  
*COS-Chemistry*

**CHS 6535. Forensic Molecular Biology**

3(3,0). PR: PCB 4524, C.I.; and must have successfully completed undergraduate courses in statistics and biology. Procedures for recovering and typing DNA from evidentiary materials and the interpretation of data.  
*COS-Chemistry*

**CHS 6535L. Forensic Analysis of Biological Materials**

3(1,6). PR: CHS 6535, PCB 4524, C.I. and satisfaction of biology requirements. A laboratory course for forensic molecular biologists covering the procedures for recovering and typing DNA from evidentiary materials.  
*COS-Chemistry*

**CHS 6536. Population Genetics and Genetic Data**

3(3,0). PR: C.I. and must have successfully completed undergraduate courses in statistics and biology. Analysis of laboratory derived DNA data and how they can be applied in an occupational context.  
*COS-Chemistry*

**CHS 6539C. Forensic Analysis Laboratory**

4(2,3). PR: CHM 5235, CHS 6548, or C.I. Forensic analytical laboratory techniques focusing on spectroscopic and chromatographic methods.  
*COS-Chemistry*

**CHS 6548. Explosives and Accelerants Analysis**

3(3,0). PR: CHM 4130C or C.I. Forensic analysis of explosives and accelerants by mass spectrometric techniques.  
*COS-Chemistry*

**CHS 6613. Current Topics in Environmental Chemistry**

3(3,0). PR: CHM 2045C, CHM 2046, or the equivalent of a BS in biological, molecular, chemical or engineering sciences, or C.I. Advanced principles of environmental chemistry, environmental law, current remediation technologies and industrial practices relating to the environment.  
*COS-Chemistry*

**CIS 6386. Operation Systems and File System Forensics**

3(3,0). PR: CGS 5131 or C.I. In-depth coverage of computer forensics related issues associated with multiple operating systems, multiple file systems, and applications.  
*ECS-Engineering Technology*

**CIS 6395. Incident Response Technologies**

3(3,0). PR: CGS 5131 or C.I. This course covers security incidents and intrusions. Topics include: identifying and categorizing incidents, responding to incidents, log analysis, network traffic analysis, and tools  
*ECS-Engineering Technology*

**CIS 6611. Software Engineering II**

3(3,0).  
*ECS-Computer Science*

**CJC 5020. Foundations of Corrections**

3(3,0). PR: C.I. Provides an overview of correctional process in U.S., including philosophical foundations and contemporary practices.  
*HPA-Criminal Justice/Legal St*

**CJC 7029. Advanced Seminar in Corrections**

3(3,0). PR: Doctoral standing or C.I. Students integrate theory and empirical data to critically analyze issues in corrections practice and policy.  
*HPA-Criminal Justice/Legal St*

**CJE 5688. Cyber Crime and Criminal Justice**

3(3,0). PR: CCJ 5015. Deals with the problem of cyber crime and the criminal use of the Internet. Includes investigation, enforcement and legal issues.  
*HPA-Criminal Justice/Legal St*

**CJE 7029. Advanced Seminar in Law Enforcement**

3(3,0). PR: Doctoral standing or C.I. Students integrate theory and empirical data to critically analyze issues in law enforcement practice and policy.  
*HPA-Criminal Justice/Legal St*

**CJJ 6020. The Juvenile Justice System**

3(3,0). This course will focus on the development and philosophy of the Juvenile Justice System; the measurement of delinquency, theories and correlates of delinquency and prevention.  
*HPA-Criminal Justice/Legal St*

**CJL 7029. Advanced Seminar in Court Processes and Procedures**

3(3,0). PR: Doctoral standing or C.I. Students integrate theory and empirical data to critically analyze issues in court processes and procedures.  
*HPA-Criminal Justice/Legal St*

**CLP 5166. Advanced Abnormal Psychology**

3(3,0). PR: Graduate status or senior standing or C.I. Consideration of classification, causation, management and treatment of emotional disorders. Review of theories and research in the field. Lecture/Laboratory.  
*COS-Psychology*

**CLP 5187. Mental Health and Aging**

3(3,0). PR: Graduate status or senior standing or C.I. Introduction to assessment and intervention issues, practice and research related to problems with cognitive and emotional functioning among older adults. May be repeated for credit.  
*COS-Psychology*

**CLP 6181. Psychological Theories of Substance Abuse Treatment**

3(3,0). PR: Acceptance to Clinical Psychology PhD program or C.I. The mechanisms responsible for, and the treatment of, substance tolerance and dependence. This course is intended for the PhD in Clinical Psychology, in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**CLP 6191. Cross-Cultural Psychotherapy**

3(3,0). PR: Graduate admission and C.I. The theories, issues, and techniques of counseling within a multicultural environment.  
*COS-Psychology*

**CLP 6192C. Group Psychotherapy Experiential Lab**  
1(0,1). PR: Graduate standing in Clinical Psychology MA, C.I. Group process from the client's perspective. Graded S/U.  
*COS-Psychology*

**CLP 6195C. Introduction to Psychotherapy**  
3(2,2). PR: Graduate admission and C.I. Counseling theory with experimental lab component including practice in specific techniques in counseling.  
*COS-Psychology*

**CLP 6197. Applied Group Psychotherapy Theory**  
3(3,0). PR: Graduate admission to Clinical Psychology MA, C.I. Introduction to the theory and practice of the group psychotherapies.  
*COS-Psychology*

**CLP 6321. Psychotherapy in Community Settings**  
3(3,0). PR: Acceptance to Clinical Psychology PhD program or C.I. Survey of the community agencies that deliver mental health/counseling services. Includes on-site visits to local agencies. This course is intended for the PhD in Clinical Psychology; in certain instances graduate students in other programs may enroll. Graded S/U.  
*COS-Psychology*

**CLP 6441C. Individual Psychological Assessment I**  
3(2,2). PR: Graduate admission and C.I. Theory and techniques of psychological assessment with emphasis on intake interviewing, cognitive and personality assessment, and report writing.  
*COS-Psychology*

**CLP 6445C. Individual Psychological Assessment II**  
3(2,2). PR: Graduate admission and C.I. Theories of personality and techniques of personality assessment with primary emphasis on interviewing skills, objective and projective techniques, and report writing.  
*COS-Psychology*

**CLP 6457C. Group Psychotherapy**  
3(2,2). PR: Graduate admission and C.I. Group counseling: theory and practice. Experiential group laboratory.  
*COS-Psychology*

**CLP 6458C. Behavior Therapy**  
3(2,2). PR: C.I. and graduate standing. Introduction to the principles and procedures of behavior therapy as a clinical intervention approach. Includes practice in specific techniques.  
*COS-Psychology*

**CLP 6459C. Human Sexuality, Marriage, and Sex Therapies**  
3(2,2). PR: Graduate admission, and C.I. Human sexuality, theory and practice of specific techniques of marriage and sex therapy.  
*COS-Psychology*

**CLP 6460C. Introduction to Child, Adolescent, and Family Therapies**  
3(2,2). PR: Graduate admission, and C.I. Theories and practices of child, adolescent and family therapies. Includes practice in specific techniques.  
*COS-Psychology*

**CLP 6461. Cognitive-Behavioral Therapy**  
3(3,0). PR: Must be enrolled in the Clinical Psychology PhD Program. Covers theory, outcomes, and methods of cognitive-behavioral therapy. Includes discussion of variations of CBT, as targeted to particular psychiatric disorders.  
*COS-Psychology*

**CLP 6476. Developmental Psychopathology**  
3(3,0). PR: CLP 5166 or PSB 6446. Focus on the symptoms, classification, and diagnosis of emotional and behavioral disorders in infants, children, and adolescents.  
*COS-Psychology*

**CLP 6491C. Treatment Development**  
3(2,2). PR: Acceptance to Clinical Psychology PhD program or C.I. Major preventative treatment approaches, including the appropriate uses of manualized/modular therapy. Students participate in a faculty member's treatment development program. This course is intended for the PhD in Clinical Psychology, in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**CLP 6932. Ethical and Professional Issues in Mental Health Practices**  
3(3,0). PR: Graduate admission, C.I. Examination of codes of ethics, laws, and professional standards in the mental health field. Graded S/U.  
*COS-Psychology*

**CLP 6944. Clinical Supervision Seminar/Practicum**  
3(3,0). PR: Acceptance to Clinical Psychology PhD program or C.I. The concepts and skills needed to be a clinical supervisor. Includes applications, ethics, and professional responsibilities in a multi-cultural context. This course is intended for the PhD in Clinical Psychology, in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**CLP 6949. Predoctoral Internship**  
2(0,40). PR: Acceptance to Clinical Psychology PhD program or C.I. Placement in an approved setting on a full-time basis for one calendar year. Required of all clinical PhD students. This course is intended for the PhD in Clinical Psychology, in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**CLP 7446C. Child Psychological Assessment**  
3(2,2). PR: Admission to Psychology PhD Clinical track and C.I. Emphasis is placed on theories and techniques of psychological assessment with children and adolescents. Primary emphasis on interviewing, observation skills, and administering intelligence tests.  
*COS-Psychology*

**CLP 7447C. Adult Psychological Assessment**  
3(2,2). PR: Admission to Psychology PhD Clinical track and C.I. Theory and techniques of adult psychological assessment with emphasis on intake interviewing, cognitive and personality assessment, and report writing.  
*COS-Psychology*



**CLP 7623. Ethical and Professional Issues in Clinical Psychology**

2(2,0). PR: Graduate admission to the PhD clinical program or C.I. Examination of APA Code of Ethics, relevant laws, and professional standards in clinical psychology.

*COS-Psychology*

**CLP 7943C. Clinical Practicum**

3(3,8). PR: Acceptance to Clinical Psychology PhD program or C.I. Clinical activities performed in an approved university or community setting under faculty / staff supervision. This course is intended for the PhD in Clinical Psychology, in certain instances graduate students in other programs may enroll. May be repeated for credit. Graded S/U.

*COS-Psychology*

**CNT 5008. Computer Communication Networks Architecture**

3(3,0). PR: CDA 4150C. Computer networks, layers, protocols and interfaces, local area networks networking.

*ECS-Computer Science*

**CNT 6519. Wireless Security and Forensics**

3(3,0). PR: CGS 5131 or C.I. Advanced topics in wireless network security, security management, cryptography, wireless forensics and related areas.

*ECS-Computer Science*

**CNT 6707. Computer Networks Design and Distributive Processing**

3(3,0). PR: CNT 5008 and COP 5611. Computer communications networks design considerations, network operating system, distributive processing.

*ECS-Computer Science*

**CO 6705. International Economics**

3(3,0). PR: Graduate standing and ECO 6115 or equivalent, and ECO 6403 or equivalent. An inquiry into the theory of international trade and finance, commercial policy, and economic integration.

*BA-Economics*

**COM 6025. Health Communication**

3(3,0). PR: Graduate standing and C.I. Examines issues of healthcare provider-patient communication, health literacy, public health, health in other cultures, ethics in health communication, and mass media health messages.

*COS-Communication*

**COM 6046. Interpersonal Communication**

3(3,0). PR: Graduate status. Survey of theoretical perspectives in interpersonal communication.

*COS-Communication*

**COM 6047. Interpersonal Support in the Workplace**

3(3,0). PR: Graduate standing. Interpersonal theories relevant to understanding marginalization and building supportive relationships in the workplace.

*COS-Communication*

**COM 6048. Communication in Close Relationships**

3(3,0). PR: Graduate standing or C.I. Classic and contemporary theory of communication in close relationships.

*COS-Communication*

**COM 6121. Communication Management**

3(3,0). Analysis and development with reference to particular media. Organizational theory, structure, and behavior. Management principles and operations.

*COS-Communication*

**COM 6303. Communication Research I**

3(3,0). Analysis of theory and methodology in communication research, with emphasis on persuasion, nonverbal communication, and interpersonal communication.

*COS-Communication*

**COM 6304. Communication Research II**

3(3,0). PR: Statistics and COM 6303. Planning and implementation of research in persuasion, nonverbal communication, and interpersonal communication.

*COS-Communication*

**COM 6463. Studies in Intercultural Communication**

3(3,0). PR: Graduate standing and C.I. Comprehensive survey of methodological and theoretical issues and concepts in intercultural and cross-cultural research.

*COS-Communication*

**COM 6467. Studies in Persuasion**

3(3,0). PR: Graduate status. Analysis of research and major theoretical perspectives in persuasive communication.

*COS-Communication*

**COM 6468. Communication and Conflict**

3(3,0). Research seminar in the study of communication and conflict.

*COS-Communication*

**COM 6525. Communication Strategy and Planning**

3(3,0). PR: C.I. Focus on the creation of communication strategies in conjunction with overall organizational goals, with emphasis on decision making and management.

*COS-Communication*

**COP 5021. Program Analysis**

3(3,0). PR: COP 4020 and COT 4210. Syntactic and Semantic analysis of programs. Theoretical and practical limitations, attribute evaluation, data flow analysis, program optimization, intermediate representations code generation. Tools to automate analysis.

*ECS-Computer Science*

**COP 5537. Network Optimization**

3(3,0). Recent advances in the theory and computational techniques for optimal design and analysis of large networks for computers, communications, transportation, web and other applications.

*ECS-Computer Science*

**COP 5611. Operating Systems Design Principles**

3(3,0). PR: COP 4600. Structure and functions of operating systems, process communication techniques, high-level concurrent programming, virtual memory systems, elementary queuing theory, security, distributed systems, case studies.

*ECS-Computer Science*

**COP 5711. Parallel and Distributed Database Systems**  
3(3,0). PR: COP 4710. Storage manager, implementation techniques for parallel DBMSs, distributed DBMS architectures, distributed database design, query processing, multidatabase systems.  
*ECS-Computer Science*

**COP 6525. Distributed Processing of Digital Evidence**  
3(3,0). PR: CGS 5131 and COP 5611, or C.I. Parallel and distributed processing techniques using MPI in a cluster environment; data mining techniques used in analyzing large quantities of digital data.  
*ECS-Computer Science*

**COP 6614. Operating Systems Techniques**  
3(3,0). PR: COP 5611. Techniques in the design and implementation of operating systems. Case studies of several experimental and commercial operating systems.  
*ECS-Computer Science*

**COP 6615. Operating Systems Theory**  
3(3,0). PR: COP 5611. Scheduling and queuing theory, simulation, and performance evaluation of computer systems.  
*ECS-Computer Science*

**COP 6621. Compiler Construction**  
3(3,0). PR: COP 5021, COT 5310. Techniques in the design and implementation of compilers. Optimization, code generation, error recovery, attributed grammars. A project is required.  
*ECS-Computer Science*

**COP 6730. Transaction Processing**  
3(3,0). PR: COP 4710. Transaction models, transaction monitors, isolation concepts and lock manager implementation, log manager, transaction manager, file and buffer management, client-server computing.  
*ECS-Computer Science*

**COP 6731. Advanced Database Systems**  
3(3,0). PR: COP 5711. Selected topics concerning object-oriented databases, multimedia databases, active databases, temporal databases, spatial databases, and information systems.  
*ECS-Computer Science*

**COT 5310. Formal Languages and Automata Theory**  
3(3,0). PR: COP 4020 and COT 4210. Classes of formal grammars and their relation to automata, normal forms, closure properties, decision problems. LR(K) grammars.  
*ECS-Computer Science*

**COT 5405. Design and Analysis of Algorithms**  
3(3,0). PR: COT 4210. Classification of algorithms, e.g., recursive, divide-and-conquer, greedy, etc. Data Structures and algorithm design and performance. Time and space complexity analysis.  
*ECS-Computer Science*

**COT 5507. Computational Methods/Applications**  
3(3,0). PR: COT 4500. Computational solution techniques for algebraic equations, ODE and PDE Models of applications selected from science, engineering, applied mathematics, and computer science.  
*ECS-Computer Science*

**COT 5510. Computational Methods/Linear Systems**  
3(3,0). PR: COT 4500 and MAS 3106. Mathematical models for linear systems, linear programming, the simplex method, integer and mixed-integer programming, introduction to nonlinear optimization and linearization.  
*ECS-Computer Science*

**COT 5520. Computational Geometry**  
3(3,0). CR: COT 5405. Geometric searching, point location, convex hulls, proximity problems, Voronoi diagrams, spanning trees, triangulation, intersection arrangement applications.  
*ECS-Computer Science*

**COT 6300. The Theory of Parsing and Translation**  
3(3,0). PR: COT 5310. Methods of top-down and bottom-up parsing, LL(k), recursive descent, precedence, bounded-context, SR(s,k), SLR(k), LALR(k), LR(k), parser compression and generation.  
*ECS-Computer Science*

**COT 6410. Computational Complexity**  
3(3,0). PR: COT 5405. Properties of algorithms, computational equivalence of machines, time-space complexity measures, examples of algorithms of different complexity, classification of algorithms, classes P and NP.  
*ECS-Computer Science*

**COT 6415. Complexity of Parallel Computation**  
3(3,0). PR: CDA 5110, COT 6410. Theoretical models justification and buildability inherent parallelism and communication costs. Lower and upper complexity bounds. Parallel computation thesis. NC, SC classes; paradigms of parallel algorithms.  
*ECS-Computer Science*

**COT 6417. Algorithms on Strings and Sequences**  
3(3,0). PR: COT 5405 or C.I. Study of algorithms for exact and approximate string pattern matching, sequence alignment and multiple string alignment.  
*ECS-Computer Science*

**COT 6505. Computational Methods/Analysis I**  
3(3,0). PR: COT 5510. Analysis of direct and iterative solutions of systems of linear equations, eigenvalues and vectors and roots of nonlinear equations, error analysis.  
*ECS-Computer Science*

**COT 6600. Quantum Computing**  
3(3,0). PR: COT 5405. This course introduces basic concepts in quantum circuits and quantum algorithms.  
*ECS-Electrical & Computer Eng*

**COT 6602. Introduction to Quantum Information Theory**  
3(3,0). PR: COT 6600 Quantum Computing. Basic concepts in quantum information theory and quantum error correcting codes.  
*ECS-Computer Science*

**CPO 5334. Contemporary Politics of the Mayan Region**  
3(3,0). PR: Graduate status or senior standing or C.I. Analysis of issues affecting all peoples living in the contemporary Mayan region of southern Mexico, Belize, Guatemala, and El Salvador.  
*COS-Political Science*

**CPO 6036. Political Development**

3(3,0). PR: Graduate standing or C.I. Analyze competing theories of political development and examine alternative conceptualizations. Focus on economic, historical/institutional, international and cultural explanations to understand political development.

*COS-Political Science*

**CPO 6058. Revolution and Political Violence**

3(3,0). PR: Graduate Studies or C.I. Seminar addresses theory and analytical models of political revolutions and insurgencies with cases, especially Third World.

*COS-Political Science*

**CPO 6067. Comparative Courts**

3(3,0). PR: Graduate standing or C.I. Courts in new nations and democracies, and their roles in national politics and issues of human rights.

*COS-Political Science*

**CPO 6075. Comparative Political Economy**

3(3,0). PR: Graduate standing. Seminar in the political economy of advanced industrial societies, dealing with the interplay of citizens, governments, the economy, and political institutions.

*COS-Political Science*

**CPO 6091. Seminar in Comparative Politics**

3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Introduction to the theory and methodology of comparative politics, institutions, and contextual factors of selected political systems such as Canada, European, and third world nations.

*COS-Political Science*

**CPO 6446. Comparative Political Parties**

3(3,0). PR: C.I. Theories of the formation, structure, organization, and behavior of political parties as well as theories of political party systems.

*COS-Political Science*

**CPO 6785. Political and Economic Inequality in Comparative Perspective**

3(3,0). PR: Graduate standing or C.I. Examine economic and political inequality and the nature of the link between the two across the countries with different political and economic institutions.

*COS-Political Science*

**CRW 5020. Graduate Writing Workshop**

3(3,0). PR: Admission to Creative Writing MFA and C.I. Student writers present their own work, receiving detailed analysis of its strengths and weaknesses from their fellow writers and from the teacher. May be used in the degree program a maximum of four times.

*CAH-English*

**CRW 5130. Form and Theory in Creative Writing**

3(3,0). PR: Admission to Creative Writing MFA or C.I. Formal and theoretical study of creative writing of given genre (poetry, short fiction, etc). May be repeated for credit only when course content is different.

*CAH-English*

**CRW 5948C. Creative Writing Service Learning**

3(2,1). PR: Admission to Creative Writing MFA or C.I. On-site experience leading and sharing creative writing in

community settings. May be used in the degree program a maximum of three times.

*CAH-English*

**CRW 6025. Advanced Graduate Writing Workshop**

3(3,0). PR: Admission to the Creative Writing MFA and C.I. Writing and revising in one established form. Advanced Graduate Writing Workshop may be taken three times (for a total of 9 hours) in order to produce a book-length manuscript (fiction, poetry, or other genre). May be used in the degree program a maximum of four times.

*CAH-English*

**CRW 6806C. Teaching Creative Writing**

3(2,1). PR: Graduate standing in MFA in Creative Writing program or C.I. Addresses trends in creative writing pedagogy, workshop alternatives, course design, classroom management, role of creative writing in academia.

*CAH-English*

**CRW 6976. Capstone Course: Scholarship and Publication Models**

3(3,0). PR: Admission to Creative Writing MFA. Overview of thesis-writing process from proposal to defense, and possible subsequent publication.

*CAH-English*

**CWR 5125. Groundwater Hydrology**

3(3,0). PR: CWR 4203C or equivalent. Theories of groundwater movement, geological factors, analysis and design techniques, etc. Emphasis on practical considerations.

*ECS-Civil & Environmental*

**CWR 5205. Hydraulic Engineering**

3(3,0). PR: CWR 4101C and CWR 4203C. Concepts of fluid mechanics and hydrodynamics applied to natural and man-made flow of intent to civil and environmental engineering.

*ECS-Civil & Environmental*

**CWR 5515. Numerical Methods in Civil and Environmental Engineering**

3(3,0). PR: CWR 4101C, CWR 4203C. This course will present intermediate to advanced numerical methods theory and include code development and error assessment, while targeting civil and environmental engineering applications.

*ECS-Civil & Environmental*

**CWR 5545. Water Resources Engineering**

3(3,0). PR: CWR 4101C, CWR 4203C. Systems identification and solution to complex water allocation problems, and other hydraulic engineering designs and operations using economic analysis and operations research techniques.

*ECS-Civil & Environmental*

**CWR 6102. Advanced Hydrology**

3(3,0). PR: CWR 4101C or C.I. Single site and regional frequency analysis; modeling hydrologic systems; lumped and distributed event models for urban and natural drainage basins; continuous simulation; real-time forecasting.

*ECS-Civil & Environmental*

**CWR 6126. Groundwater Modeling**

3(3,0). PR: CWR 5125. Review of contemporary computer-based groundwater flow models and their application to environmental engineering problems.  
*ECS-Civil & Environmental*

**CWR 6235. Open Channel Hydraulics**

3(3,0). PR: CWR 4203C or C.I. Free surface flow studies by empirical and theoretical methods for the design, operation, and management of open channels.  
*ECS-Civil & Environmental*

**CWR 6236. River Engineering and Sediment Transport**

3(3,0). PR: CWR 4203C and CWR 4101C. River morphology and regime with stabilization and modification of river courses. Sediment transport including control methods and modeling.  
*ECS-Civil & Environmental*

**CWR 6532. Modeling of Subsurface Reactive Chemical Transport**

3(3,0). PR: CWR 6126 or ENV 6055 or CI. Mathematical formulations of geochemical equilibrium and kinetics, hydrological transport of chemicals, innovative numerical schemes to solve reactive chemical transport in subsurface media, design, and application of software for numerical solutions.  
*ECS-Civil & Environmental*

**CWR 6535. Modeling Water Resources Systems**

3(3,0). PR: CWR 4101C and CWR 4203C. Contemporary mathematical models for water quality and quantity considerations including computer-based hydraulic and hydrologic models.  
*ECS-Civil & Environmental*

**CWR 6539. Finite Differences/Elements in Surface Water Modeling**

3(3,0). PR: C.I. Theory, applications and error analysis for two commonly employed discretization methods as applied to surface water modeling.  
*ECS-Civil & Environmental*

**CYP 6948C. Psychology Internship**

Variable. PR: Clinical psychology MA students. Supervised placement in community setting for 10-30 hours per week. May be repeated for credit. Graded S/U.  
*COS-Psychology*

**DEP 5057. Developmental Psychology**

3(3,0). PR: Graduate status or senior standing or C.I. Psychological aspects of development including intellectual, social, and personality factors.  
*COS-Psychology*

**DIG 5045C. Principles of Interactive Entertainment I**

3(1,3). PR: Admission to Digital Media MS program or C.I. Interactive digital content creation technologies and development processes.  
*CAH-Digital Media*

**DIG 5046C. Principles of Interactive Entertainment II**

3(1,3). PR: DIG 5045C or C.I. Advanced principles of interactive digital content creation technologies and development processes.  
*CAH-Digital Media*

**DIG 5136C. Design for Media**

3(1,3). PR: Graduate standing and C.I. Theories and practices of interactive design for digital media content.  
*CAH-Digital Media*

**DIG 5366. Creating Interactive Characters**

3(3,0). PR: Admission to Digital Media MS or C.I. Survey of issues related to creating interactive characters. Topics will range from modeling humans to reviewing realistic human capabilities. Graded S/U.  
*CAH-Digital Media*

**DIG 5529C. Production for Media**

3(1,3). PR: Admission to Digital Media MS program or C.I. Theories and practices of production processes for interactive entertainment.  
*CAH-Digital Media*

**DIG 5548C. Rapid Prototype Production I**

3(1,3). PR: Admission to Digital Media MS or C.I. Students engage in interdisciplinary teams to create rapid development projects.  
*CAH-Digital Media*

**DIG 5549C. Rapid Prototype Production II**

3(1,3). PR: DIG 5548C or C.I. Students engage in interdisciplinary teams to create advanced rapid development projects.  
*CAH-Digital Media*

**DIG 5550C. Digital Media Development**

3(1,3). PR: DIG 5136C or C.I. Students will begin developing projects specified by design documents from Design for Media course.  
*CAH-Digital Media*

**DIG 5551C. Interactive Media Design**

3(1,3). PR: DIG 4716L and DIG 3286C or equivalent, or C.I. Interdisciplinary approach to design and construction of advanced interactive media, applying theory, aesthetic, and scientific principles of user interaction. Project and theory-based.  
*CAH-Digital Media*

**DIG 5565C. Digital Asset Management Systems**

3(1,3). PR: Graduate standing or C.I. Structure and use of Digital Asset Management Systems (DAMS). Protection of intellectual property rights by encryption, water marking, steganography. Version and work process flow control systems.  
*CAH-Digital Media*

**DIG 5627. Autonomous Characters**

3(3,0). PR: Graduate status or senior standing or C.I. Interdisciplinary study of autonomous characters-computer programs that mimic human behavior in games, simulations and interactive literature. Formal models of strategy, tactics and actions.  
*CAH-Digital Media*

**DIG 5647C. Science and Technology of Dynamic Media**

3(1,2). PR: Graduate status or C.I. Contemporary media theory and survey of scientific principles behind digital media production, synthesis, and evaluation.  
*CAH-Digital Media*

**DIG 5810. Ways of Seeing: Cultural and Technological Perspectives**

3(3,0). PR: Admission to Film and Digital Media master's program or C.I. Cultural and technological perspectives formed by the intersection of media and cultural studies, art history and criticism, and cinema studies.

*CAH-Digital Media*

**DIG 5835. Digital Forensics**

3(3,0). PR: CGS 5131 (Computer Forensics I) or C.I. Application of digital scientific techniques to solve information assurance, forensic and legal problems.

*CAH-Digital Media*

**DIG 5950. Interactive Entertainment Capstone**

3(3,0). PR: Admission to Digital Media MS Prepare a product design document and technical design document for a production project. Graded S/U.

*CAH-Digital Media*

**DIG 6137. Information Architecture**

3(3,0). PR: School of Film and Digital Media master's student. Exploration of the process of formal design of interactive processes, examining the theories of usability and object oriented design.

*CAH-Digital Media*

**DIG 6165. Principles of Interaction**

3(3,0). PR: Graduate standing in MFA or MA in Film and Digital Media, MS in Digital Media, or C.I. Foundations of interactive media, including its historical evolution, design concepts, performance issues, resource programs and tools for critical analysis.

*CAH-Digital Media*

**DIG 6327. Production Software**

3(3,0). PR: DIG 5810 or C.I. Principles of generating and manipulating digital imagery, and techniques and mechanics of manipulating underlying representations and data.

*CAH-Digital Media*

**DIG 6435. Visual Development**

3(3,0). PR: FIL 5810 or C.I. Principles of visual storytelling and visual development, including the nature and tradition of visual storytelling.

*CAH-Digital Media*

**DIG 6487. Principles of Visual Language**

3(3,0). PR: Graduate standing in MFA or MA in Film and Digital Media or MS in Digital Media, or C.I. Overview of Visual Language, including the nature of perceptions and cognitions of imagery.

*CAH-Digital Media*

**DIG 6546. Previsualization and Concept Development**

3(3,0). PR: DIG 5810 or C.I. Skills and knowledge for planning and developing a new feature length film or digital media project.

*CAH-Digital Media*

**DIG 6547C. Preproduction and Prototyping**

3(1,3). PR: DIG 5529C or C.I. Standard pre-production process in interactive entertainment.

*CAH-Digital Media*

**DIG 6718C. Interactive Entertainment Project**

3(1,3). PR: DIG 5046C or C.I. Students implement a complete game, based on designs pre-produced and prototyped in previous courses.

*CAH-Digital Media*

**DIG 6785C. Advanced Interactive Entertainment**

3(1,3). PR: DIG 6547C or C.I. Advanced techniques and application in programming, production, and development of professional portfolios.

*CAH-Digital Media*

**DIG 6825. Digital Media Research Methods**

3(3,0). PR: Graduate standing and C.I. A review of quantitative research methods needed for digital media professionals.

*CAH-Digital Media*

**DIG 6944C. Game Design Practicum**

6(2,6). PR: DIG 5046C or C.I. Supervised experience supplementing theoretical and practical experiences involving new research developments or partnerships within industry.

*CAH-Digital Media*

**EAB 5765. Applied Behavior Analysis with Children and Youth**

3(3,0). PR: DEP 5057 and EXP 5445, and graduate status or senior standing or C.I. Advanced survey of principles, procedures, and techniques of applied behavior analysis, with special attention to applications with children and youth.

*COS-Psychology*

**EAS 5123. Intermediate Aerodynamics**

3(3,0). PR: EAS 4134; CR: EML 5060. Aerodynamic characteristics of airfoils, finite wings, waves, wing-body combinations, viscous flow and flow instabilities. Airfoil design.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 5157. V/Stol Aerodynamics and Performance**

3(3,0). PR: EAS 4105; CR: EML 5060. Momentum theory, blade element theory, hover and forward flight, stability, aeroelasticity.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 5302. Direct Energy Conversion**

3(3,0). PR: EML 3101 and EML 4142. Direct methods of energy conversion; particular emphasis on fuel cells, thermoelectrics, thermionics, solar energy, photovoltaics and magnetohydrodynamics. Analysis and systems design.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 5315. Rocket Propulsion**

3(3,0). PR: EAS 4134 or EML 4703. Analysis and performance of rocket motors; selection and thermochemistry of chemical propellants: liquid and solid propellant rockets.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 5407. Mechatronic Systems**

3(3,0). PR: EML 4804C or EAS 4404C. Discrete control techniques for aerospace mechatronic systems. Controller design, test and evaluation applications.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 5535. Engineering Design for Aerospace Vehicles**  
3(3,0). PR: EAS 4700C, EAS 4710C, EML 4501C, EML 4502C, or equivalent. Applications of the design process to aerospace vehicles. A system approach will be emphasized. Techniques for optimizing interface requirements will be covered.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6138. Advanced Gas Dynamics**  
3(3,0). PR: EML 5713. CR: EML 5060. Analysis of steady and unsteady transonic, supersonic and hypersonic flows. Shock waves, nozzles, diffusers, and high speed wind tunnels.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6185. Turbulent Flow**  
3(3,0). PR: EML 5060 and EML 5713. Phenomena and methods of characterizing turbulence; spatial and temporal velocity correlation; energy spectra; transition prediction; turbulent boundary layer equations; hot wire and LDV measurement techniques.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6403C. Attitude Determination and Control**  
3(2,3). PR: EAS 6507, EML 5060. Spacecraft attitude dynamics and control. Pointing and stabilization methods. Optimal and learning algorithms applied to perturbation analysis.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6405. Advanced Flight Dynamics**  
3(3,0). PR: EAS 4105 or equivalent. Aerodynamic principles as applied to stability and control of aerospace vehicles. Generalized vehicle performance. Small disturbance dynamic stability and control response.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6415. Guidance, Navigation and Control**  
3(3,0). PR: EML 5060, EAS 6507. Inertial and GPS navigation techniques. Explicit and implicit guidance formulations. Robust control applications to aircraft, missile and space vehicles.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6507. Topics of Astrodynamics**  
3(3,0). PR: EML 5271 or C.I. Spacecraft attitude dynamics and control. Orbital mechanics. Optimal control of aerospace vehicles. Emphasis is on recent developments and applications.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6807. Aerospace Measurements/Instrumentation**  
3(3,0). PR: EML 4312C, EAS 6507, EML 5060, and C.I. Inertial instruments (i.e. gyros, accelerometers), thermal, fluid, optical sensors and actuators, for space and aerodynamic applications. May be repeated for credit.

*ECS-Mechanical/Matrls/Aerosp*

**EAS 6808. Space Environment and Payload Instrumentation**  
3(3,0). PR: EAS 4504, EML 5060 or C.I. Space environment and payload instrumentation. Characterization of space environment and payload instrumentation methods.

*ECS-Mechanical/Matrls/Aerosp*

**EBD 6117. Behavior Disorders in Schools**  
3(3,0). PR: Basic Teacher Certificate or C.I. Assessment analysis of behavior disorders, cause and effects, identification and theories.

*ED-Child, Family & Comm Sci*

**EBD 6226. Theory and Application for Emotionally Handicapped**  
3(3,0). PR: C.I. Study of various approaches to use in teaching emotionally handicapped children interpersonal and cognitive skills with special emphasis on the severe and moderate populations.

*ED-Child, Family & Comm Sci*

**ECM 5135. Engineering Math Analysis I**  
3(3,0). PR: MAP 2302. Topics in advanced engineering mathematics, including systems of differential equations, phase plane, linear algebra, and vector differential calculus.

*ECS-Electrical & Computer Eng*

**ECM 5741C. Microcomputer-based Monitoring and Control Systems**  
3(2,3). PR: EEE 3342C; EEL 4767C or C.I. Machine language programming; software development aids; systems design; interfacing considerations.

*ECS-Electrical & Computer Eng*

**ECM 6235. Engineering Math Analysis II**  
3(3,0). PR: ECM 5135. Advanced engineering math topics including Fourier series, partial differential equations, and complex variables.

*ECS-Electrical & Computer Eng*

**ECM 6308. Current Topics in Parallel Processing**  
3(3,0). PR: C.I. Research topics in parallel architectures, including, but not limited to, systolic architectures, wavefront arrays, interconnection networks, reconfigurable architectures and fast algorithms. May be used in the degree program a maximum of 2 times.

*ECS-Electrical & Computer Eng*

**ECM 6805C. Microcomputer Applications Design**  
3(2,3). PR: C.I. Advanced applications of microcomputer systems. Design of systems and software to implement a case study in microcomputer usage.

*ECS-Electrical & Computer Eng*

**ECO 5005. Economic Concepts**  
3(3,0). PR: Acceptance into the graduate program. Introduction to micro and macro economic analysis.

*BA-Economics*

**ECO 6115. Economic Analysis of the Firm**  
3(3,0). PR: CBA Master's program of Study Foundation Core. Commodity price and output determination; factor price determination and functional income distribution; analysis of different types of markets.

*BA-Economics*

**ECO 6118. Microeconomic Theory I**  
3(3,0). PR: ECO 3101 (or equivalent), ECO 3410 (or equivalent), and ECO 6403 (concurrent enrollment), or C.I. Microeconomic principles governing individual decision-making relative to the theory of the firm and consumer choice.

*BA-Economics*

**ECO 6206. Macroeconomic Theory I**

3(3,0). PR: ECO 3203 (or equivalent) and ECO 6403 (or equivalent), or C.I. An analysis of aggregate economic conditions including the determination of output, employment, and income levels.

*BA-Economics*

**ECO 6226. Seminar in Money, Banking, and Monetary Policy**

3(3,0). PR: Graduate standing and ECO 5005 or equivalent. Study of the structural foundation and policy-making activities of the monetary authorities.

*BA-Economics*

**ECO 6315. Seminar in Contemporary Economic Issues**

3(3,0). PR: ECO 6118 or equivalent and ECO 6403 or equivalent. Discussion and analysis of current economic problems and issues. May be used in the degree program a maximum of three times only when course content is different.

*BA-Economics*

**ECO 6403. Mathematical Economics**

3(3,0). PR: ECO 3101 (or equivalent), ECO 3410 (or equivalent), and ECO 6118 (co-requisite), or C.I. Covers the foundations of economic theory with particular focus on the mathematical methods that are indispensable for proper understanding of the economic literature.

*BA-Economics*

**ECO 6404. Games and Economic Behavior**

3(3,0). PR: Graduate standing and ECO 6118. The study of interactive and strategic behavior relying on Experimental Game Theoretic literature.

*BA-Economics*

**ECO 6405. Business Statistical Concepts and Methods**

3(3,0). PR: Admission to Business Graduate Program. Fundamental statistical methods of data analysis used in business to enable managers to make more informed decisions under uncertainty. Descriptive and inferential concepts and methods, probability and probability distributions, 1- and 2-sample inference, experimental and survey design, analysis of variance, correlation, and regression analysis applied to business cases and actual business data. Statistical assumptions, limitations, ethical reporting issues are explored as well. Students use Excel and statistical software to perform computations and interpret standard output.

*BA-Economics*

**ECO 6416. Applied Business Research Tools**

3(3,0). PR: CBA master's program of study foundation core Courses. Open to students on the BSBA/MAAE Track. Multivariate methods and related tools applied to analyze business and economic data as an aid in decision making.

*BA-Economics*

**ECO 6418. Economic Concepts with Math Applications**

3(3,0). PR: Admission to CBA master's program. Business-based overview of microeconomic price and output determination through analysis of different types of markets with calculus. Algebraic formulation of macro economy, with emphasis on measuring economic activity, determination of macro equilibrium and forecasting using appropriate mathematical models for business decisions.

*BA-Economics*

**ECO 6424. Econometrics I**

3(3,0). PR: ECO 6403 (or equivalent) and ECO 6118 (or equivalent), or C.I. Develops basic statistical methods and provides coverage of the general linear regression model, generalized least squares, generalized methods of moments, and multi-equation models.

*BA-Economics*

**ECO 6433. Business Cycles and Forecasting**

3(3,0). PR: ECO 5005 and ECO 6416 or equivalents, graduate standing. Use of economic tools for measuring changes in aggregate economic activity, changes in production and prices, and the use of statistical techniques.

*BA-Economics*

**ECO 6456. Experimental Economics**

3(3,0). PR: ECO 6118 (or equivalent) and ECO 6403 (or equivalent). Introduction to the use of experimental methods in economics: motivation, design, analysis, and policy implications of this methodology.

*BA-Economics*

**ECO 6505. Public Economics**

3(3,0). PR: ECO 6118 or equivalent. and ECO 6403 or equivalent. Analysis of how government activities influence resource allocation, relative prices, and welfare, including public goods theory, tax incidence, and optimal taxation theory.

*BA-Economics*

**ECO 7116. Microeconomic Theory II**

3(3,0). PR: ECO 6118 (or equivalent) and ECO 6403 (or equivalent). Advanced treatment of demand, production, cost, and market theory under varying competitive conditions.

*BA-Economics*

**ECO 7117. Advanced Topics in Economic Theory**

3(3,0). PR: ECO 7116 and ECO 7205. Advanced topics in economic theory, including comparative statics, atemporal duality theory, comparative dynamics and intertemporal duality theory, differential game theory, and the economics of information.

*BA-Economics*

**ECO 7205. Macroeconomic Theory II**

3(3,0). PR: ECO 6206 (or equivalent), ECO 6403 (or equivalent), and ECO 6118 (or equivalent). The study of classical, neoclassical, and endogenous growth theories and their application to contemporary economic problems.

*BA-Economics*

**ECO 7423. Applied Models I**

3(3,0). PR: Acceptance in the PhD Program, and ECO 6416 or equivalent. Advanced coverage of standard regression methods and models plus nonparametric statistics.

*BA-Economics*

**ECO 7426. Econometrics II**

3(3,0). PR: ECO 6424 (or equivalent) or C.I. Covers estimation of static and dynamic panel data models, and limited dependent variable models as well as sample selection problems.

*BA-Economics*

**ECO 7428. Time Series**

3(3,0). PR: ECO 6424 (or equivalent) or C.I. Advanced treatment of time series analytical techniques including vector autoregression, cointegration and nonstationarity.  
*BA-Economics*

**ECP 6008. Economics of Sport**

3(3,0). PR: Acceptance in the the Sport Business Management Program and CBA Masters Program of Study Foundation Core. Economic understanding of how organized sports operates and affects modern society.  
*BA-Economics*

**ECP 6309. Survey of Environmental and Natural Resource Economics**

3(3,0). PR: ECO 6118 or equivalent and ECO 6403 or equivalent. A survey of the basic theoretical principles and the accompanying empirical work in environmental and natural resource economics.  
*BA-Economics*

**ECP 6405. Industrial Organization**

3(3,0). PR: ECO 6118 (or equivalent) and ECO 6403 (or equivalent). An analysis of firm behavior in imperfectly competitive markets, strategic behavior, and economic policy directed at promoting competitive behavior.  
*BA-Economics*

**ECP 7306. Environmental Economics**

3(3,0). PR: ECP 6309. The application of economic theory and methods to the evaluation of the effects of economic activity on the environment with selected applications.  
*BA-Economics*

**ECP 7307. Research Seminar**

3(3,0). PR: ECO 7426, ECP 7311, ECP 7306, or C.I. Students conduct and evaluate research in their chosen field of specialization. Student projects are prepared with faculty consultation and are presented as part of the seminar.  
*BA-Economics*

**ECP 7311. Natural Resource Economics**

3(3,0). PR: ECP 6309. Advanced treatment of dynamic principles in optimal renewable and nonrenewable resource consumption and the role of natural resources in economic development and international trade.  
*BA-Economics*

**ECS 6015. Economic Development**

3(3,0). PR: Graduate standing and ECO 5005 or equivalent. Analysis of theories and problems of growth and development with special attention to resource scarcity, population growth, and interaction of foreign trade and internal development.  
*BA-Economics*

**EDA 6061. Organization and Administration of Schools**

3(3,0). PR: Basic Teacher Certificate or C.I. Introduction to and overview of educational administration including governance, finance communications and information management, personnel evaluation.  
*ED-Ed Research, Tech & Lead*

**EDA 6106. Trends in Educational Administration**

3(3,0). PR: Master's degree and/or Rank II certification including a course in school organization. Examines exemplary organization patterns in school administration. Study of patterns of functions in selected outstanding school organizations.  
*ED-Ed Research, Tech & Lead*

**EDA 6232. Legal Aspects of School Operation**

3(3,0). PR: Basic Teacher Certificate or C.I. Study of state and federal laws affecting the operation of public schools emphasizing individual rights and responsibilities of students, faculty, and administrators.  
*ED-Ed Research, Tech & Lead*

**EDA 6240. Educational Financial Affairs**

3(3,0). PR: Basic Teacher Certificate or C.I. Theoretical and practical approaches to managing school business affairs at central office and individual school levels.  
*ED-Ed Research, Tech & Lead*

**EDA 6260. Educational Systems Planning and Management**

3(3,0). PR: Basic Teacher Certificate or C.I. Application of current educational management and behavioral theory for systems approaches in schools and educational facilities.  
*ED-Ed Research, Tech & Lead*

**EDA 6300. Community School Administration**

3(3,0). PR: C.I. The relationships between the school and the community with special emphasis on community needs and the development of a total community school program.  
*ED-Ed Research, Tech & Lead*

**EDA 6502. Organization and Administration of Instructional Programs**

3(3,0). PR: Basic Teacher Certificate or C.I. Study of school organization, administration, and management with emphasis toward organizational theory, leadership, evaluation, and change and improvement strategies.  
*ED-Ed Research, Tech & Lead*

**EDA 6540. Organization and Administration of Higher Education**

3(3,0). PR: C.I. Purposes, organizations, and administration of two-year and four-year institutions of higher education in the United States. Public and private colleges are studied.  
*ED-Ed Research, Tech & Lead*

**EDA 6931. Contemporary Issues in Educational Leadership**

3(3,0). A capstone course intended to stimulate inspection, analysis, and dialogue regarding contemporary issues and tensions facing educational leaders and educational systems.  
*ED-Ed Research, Tech & Lead*

**EDA 6939. Seminar in Educational Administration**

3(3,0). PR: C.I. Discussion of problems in school administration, patterns of curriculum organization, and research projects. May be used in the degree program a maximum of four times.  
*ED-Ed Research, Tech & Lead*



**EDA 6946. Internship**

1-6. PR: C.I. Normally, the Educational Leadership internship is completed during the latter part of the degree program. Application must be made in semester prior to internship through the student's adviser.

*ED-Ed Research, Tech & Lead*

**EDA 7101. Organizational Theory in Education**

3(3,0). PR: Advanced graduate status or C.I. Overview of sociological and behavioral theories that are applicable to administration of various educational organizations.

*ED-Ed Research, Tech & Lead*

**EDA 7192. Educational Leadership**

3(3,0). PR: Doctoral standing or C.I. An analysis of the interactive process and functioning of groups; development of skills essential for effective educational leadership; and the change process.

*ED-Ed Research, Tech & Lead*

**EDA 7195. Politics, Governance, and Financing of Educational Organizations**

3(3,0). PR: Doctoral standing or C.I. The study of policy development as a political process; governance issues; and financial issues in education.

*ED-Ed Research, Tech & Lead*

**EDA 7205. Planning, Research, and Evaluation Systems in Educational Administration**

3(3,0). PR: Doctoral standing or C.I. The study of research and evaluation methodologies, system theory, and planning and design strategies in educational administration.

*ED-Ed Research, Tech & Lead*

**EDA 7225. Educational Personnel Administration**

3(3,0). PR: Doctoral standing or C.I. Examination of the personnel function in educational institutions including planning, recruitment, selection, placement, induction, appraisal, collective bargaining and contract administration.

*ED-Ed Research, Tech & Lead*

**EDA 7235. Seminar in School Law**

3(3,0). PR: C.I. Seminar to explore various legal aspects related to the administration and organization of American education and to enable the individual to research in-depth selected legal topics.

*ED-Ed Research, Tech & Lead*

**EDA 7236. Legal Issues in Higher Education**

3(3,0). PR: Advanced graduate status or C.I. Addresses legal framework of public and private institutions of higher education with emphasis on case law related to organization, governance, faculty, students, curriculum, and environment.

*ED-Ed Research, Tech & Lead*

**EDA 7237. Legal Issues in Higher Education II**

3(3,0). PR: EDA 7236. Advanced graduate study of legal aspects specific to public and private post secondary educational institutions.

*ED-Ed Research, Tech & Lead*

**EDA 7274. Seminar: Applications of Technology to Educational Leadership**

3(4,0). PR: EDA 6260 or C.I. Study of administrative and leadership technology applications at the school building or district level.

*ED-Ed Research, Tech & Lead*

**EDA 7943. Field Project**

3(3,0). PR: C.I. Field experience and projects for advanced graduate students. Participation in school plant surveys, accreditation visitation, curriculum studies, administrative analysis, field research. May be repeated for credit.

*ED-Ed Research, Tech & Lead*

**EDE 6205. Elementary School Curriculum**

3(3,0). PR: Basic Teacher Certificate or C.I. Analysis of the forces which shape and contribute to the vertical and horizontal curriculum designs of elementary schools.

*ED-Teaching & Learning Princ*

**EDE 6933. Elementary Education Seminar I**

2(2,0). PR: Admission to graduate program or C.I. Overview of the MEd and MA in Elementary Education programs' policies and expectations, and exploration of the teaching profession (professional organizations, accomplished practices, publications, issues and terminology.

*ED-Teaching & Learning Princ*

**EDE 6935. Elementary Education Seminar II**

1(1,0). PR: EDE 6933 or C.I. As a culminating experience, this seminar provides students with the opportunity to synthesize what they have learned throughout their MEd or MA in Elementary Education program.

*ED-Teaching & Learning Princ*

**EDF 5245. Preparation and Management of Classroom Instruction**

3(3,0). PR: C.I. Study of strategies for instructional planning and classroom management that result in optimum learning.

*ED-Educational Studies*

**EDF 5607. Language, Culture and Pedagogy: Impact and Implications**

3(3,0). PR: C.I. Explores in-depth issues surrounding learning needs of students from linguistically and culturally diverse populations. Research on language, culture and pedagogy will be highlighted.

*ED-Educational Studies*

**EDF 6141. Human Intelligence**

3(3,0). PR: Graduate standing and a course in learning. An examination of theory and research on human intelligence and its relation to learning and cognitive performance with emphasis on implications for educational and workplace settings.

*ED-Educational Studies*

**EDF 6155. Lifespan Human Development and Learning**

3(3,0). Research in childhood, adolescent, and adult development relevant to contemporary American education. Emphasis on application of theory to educational practice.

*ED-Educational Studies*

**EDF 6206. Challenges of Classroom Diversity**

3(3,0). PR: Graduate standing, EDF 6886 or C.I. An examination of factors which shape the curriculum in diverse classrooms with specific attention to learning, assessment and best practices appropriate for minority students.

*ED-Educational Studies*

**EDF 6216. Motivation in Learning and Performance**

3(3,0). PR: Graduate standing. An examination of theory and research in learning and performance with an emphasis on practical applications for educational and work place settings.

*ED-Educational Studies*

**EDF 6233. Analysis of Classroom Teaching**

3(3,0). PR: EDF 6481 or C.I. Analyses of effective teaching practices and their effect on classroom instruction and learning.

*ED-Educational Studies*

**EDF 6237. Principles of Learning and Introduction to Classroom Assessment**

3(3,0). PR: Graduate standing. Students will examine prominent developmental and learning theories in depth and their implications for instruction and assessment. Key issues in educational psychology will be explored.

*ED-Educational Studies*

**EDF 6259. Learning Theories Applied to Classroom Instruction and Management**

3(3,0). PR: Graduate standing. Study of strategies of classroom management that result in optimum learning and a minimum of behavior problems.

*ED-Educational Studies*

**EDF 6401. Statistics for Educational Data**

3(3,0). PR: EDF 6481 or C.I. Design of educational evaluation; analysis of data, descriptive and inferential statistics, interpretation of results.

*ED-Ed Research, Tech & Lead*

**EDF 6432. Measurement and Evaluation in Education**

3(3,0). PR: Graduate standing. Concepts of measurement and evaluation, classroom test construction, creation and use of derived scores, selection and use of published measurement instruments, current issues.

*ED-Ed Research, Tech & Lead*

**EDF 6446. Assessment of Learning**

3(3,0). PR: Graduate standing, knowledge of measure or C.I. Alternative assessment procedures in educational settings (i.e., performance, portfolio, and affective) as well as traditional testing will be discussed. Emphasis will be placed on use of appropriate procedures to answer the evaluation questions.

*ED-Educational Studies*

**EDF 6447. Development and Validation of Educational Tests and Measures**

3(3,0). PR: EDF 6401, EDF 6432. Criterion and norm-referenced test development for educational agencies: specifications, item development and trial, scaling, passing scores, and test norms.

*ED-Ed Research, Tech & Lead*

**EDF 6467. Mixed Methods for Evaluation in Educational Settings**

3(3,0). PR: EDF 6401 and EDF 6481 or C.I. This service learning course will examine component and integrated mixed method designs toward developing a proposal for a program evaluation for a local nonprofit organization.

*ED-Ed Research, Tech & Lead*

**EDF 6481. Fundamentals of Graduate Research in Education**

3(3,0). PR: Graduate standing. Review and critique of research literature, use of library resources for educational research, and introduction to the concepts of research design and data analysis.

*ED-Ed Research, Tech & Lead*

**EDF 6486. Research Design in Education**

3(3,0). PR: EDF 7403 or C.I. An examination of methodological techniques for specific educational problems. Intended for students in the process of designing independent research studies.

*ED-Ed Research, Tech & Lead*

**EDF 6517. Perspectives on Education**

3(3,0). PR: Graduate standing. A critical analysis of the conceptual and operative educational systems developed in the United States.

*ED-Educational Studies*

**EDF 6608. Social Factors in American Education**

3(3,0). Analysis of general and specific aspects of American education as they relate to social and behavioral sciences.

*ED-Educational Studies*

**EDF 6707. Gender and Education: Cross-Cultural Perspectives**

3(3,0). PR: BA in Education or C.I. Cross-cultural analysis of the historical, political, and social causes and outcomes of education vis-a-vis gender as a cultural category.

*ED-Educational Studies*

**EDF 6725. Critical Issues in Urban Education**

3(3,0). PR: C.I. Explores issues of social, political, and economic conditions, and their impacts on schools and communities serving urban students and their families.

*ED-Educational Studies*

**EDF 6727. Critical Analysis of Social, Ethical, Legal, and Safety Issues Related to Educ**

3(3,0). PR: Graduate standing. Analysis of critical issues in education including social, ethical, legal, and safety concerns which impact the quality of education.

*ED-Educational Studies*

**EDF 6809. Introduction to Comparative and International Education**

3(3,0). PR: Graduate standing. Surveys the salient issues, perspectives and paradigms of comparative and international education, while introducing students to cross-national comparative research design.

*ED-Educational Studies*

**EDF 6865. Policy and Practice of Language in International Education**

3(3,0). PR: BA in Education or C.I. How social and political forces influence language use and how language professionals address the challenge of reconciling linguistic diversity in classroom and policy arenas.

*ED-Educational Studies*

**EDF 6884. Education as A Cultural Process**

3(3,0). PR: Graduate standing, EDF 6886, or C.I. An analysis of the theoretical underpinnings of multicultural education with special emphasis on the cultural context of American education for minority groups.

*ED-Educational Studies*

**EDF 6886. Multicultural Education**

3(3,0). A survey of multicultural education; analysis of the relationship between cultural transmission, cultural pluralism, and the learning process within American schools.

*ED-Educational Studies*

**EDF 6936. Seminar in Improving Teaching and Learning in Urban Settings**

1(1,0). PR: C.I. Seminar designed to develop action research to improve teaching and learning in urban settings. May be repeated for credit. Graded S/U.

*ED-Educational Studies*

**EDF 7232. Analysis of Learning Theories in Instruction**

3(3,0). PR: Advanced graduate standing or C.I. Analysis of theories and research relevant to understanding learning in educational settings.

*ED-Educational Studies*

**EDF 7403. Quantitative Foundations of Educational Research**

3(3,0). PR: EDF 6401 or C.I. Examination of appropriate methods in applied educational contexts. Consideration of analysis strategies for educational data, emphasis on identification and interpretation of findings.

*ED-Ed Research, Tech & Lead*

**EDF 7405. Quantitative Methods II**

3(3,0). PR: EDF 7403 and EDF 7463 or C.I. Correlation, regression, path analysis, and structural equation modeling in educational studies. Use of path analysis and structural equation modeling to test theory.

*ED-Ed Research, Tech & Lead*

**EDF 7406. Multivariate Statistics in Education**

3(3,0). PR: EDF 7403 and EDF 7463 or C.I. Statistical methods that simultaneously analyze multiple measurements on an individual or object under investigation.

*ED-Ed Research, Tech & Lead*

**EDF 7410. Application of Nonparametric and Categorical Data Analysis in Education**

3(3,0). PR: EDF 7403 or comparable doctoral level statistics course. Application of nonparametric and categorical data analysis procedures to education. Topics: nonparametrics for single samples, paired samples, independent samples, logistic regression, contingency tables, and logit models.

*ED-Ed Research, Tech & Lead*

**EDF 7415. Latent Variable Modeling In Education**

3(3,0). PR: EDF 7403 or its equivalent at the doctoral level. This course introduces students to the propriety, fit, parsimony, interpretation and power analysis of latent variable measurement and causal models.

*ED-Ed Research, Tech & Lead*

**EDF 7463. Analysis of Survey, Record, and Other Qualitative Data**

3(3,0). PR: EDF 6401 and EDF 7403 or C.I. Examination of the major elements involved in planning, conducting, and reporting survey research; emphasis is on the design, instrumentation, data analysis and data; interpretation for survey research.

*ED-Ed Research, Tech & Lead*

**EDF 7473. Ethnography in Educational Settings**

3(3,0). PR: Admission to Doctoral program. Exploration and integration of theories and practices of naturalistic, field-based studies of educational settings, proceeding from conceptualization, through data collection and analysis, to results presentation.

*ED-Ed Research, Tech & Lead*

**EDF 7474. Multilevel Data Analysis In Education**

3(3,0). PR: EDF 7403 or comparable doctoral level statistics course. The course will consider the statistical foundations of multilevel linear models, also known as hierarchical linear models (HLMs), and focuses on their application in education and behavioral sciences.

*ED-Ed Research, Tech & Lead*

**EDF 7475. Qualitative Research in Education**

3(3,0). PR: EDF 7463 or C.I. Introduction to the philosophical and conceptual basis of qualitative research methods, strategies for gathering, analyzing, and interpreting qualitative data, emerging issues.

*ED-Ed Research, Tech & Lead*

**EDF 7479. Applications of Technology in Qualitative Resrch: Data, Organztn, & Analysis**

3(3,0). PR: EDF 7475 or C.I. Course includes use of video and audio to collect data, two leading data analysis software packages, and requires students demonstrate competencies in lab-based assignments.

*ED-Ed Research, Tech & Lead*

**EDF 7487. Monte Carlo Simulation Research in Education**

3(3,0). PR: EDF 7403 or C.I. Students are taught how to generate univariate and multivariate data under various parametric conditions for the purpose of exploring the limits of analytical procedures.

*ED-Ed Research, Tech & Lead*

**EDF 7919. Analysis and Synthesis of Educational Literature**

3(3,0). PR: Doctoral standing or C.I. Students will learn to find, select, critically analyze, and synthesize educational research and scholarship.

*ED-Educational Studies*

**EDG 5745. Teaching the Non-English Student**

3(3,0). PR: C.I. Bilingual and non-linguistic instruction in curriculum areas in English as a second language.

*ED-Teaching & Learning Princ*

**EDG 5941. Clinical Practice**

2-8(0,11). PR: Admission to STEP II, III or IV. Clinical Internship in an appropriate educational setting under the direction of a university supervisor or peer teacher.  
*ED-Educational Studies*

**EDG 6042. Character Education in the Schools**

3(3,0). PR: C.I. An examination of issues in the field of character education.  
*ED-Educational Studies*

**EDG 6047. Contemporary Issues in Education**

3(3,0). An analysis of current trends in education and their impact on educational programs.  
*ED-Educational Studies*

**EDG 6223. Curriculum Theory and Organization**

3(3,0). An exploration and examination of the foundations, design, development, and organization of curriculum in K-plus settings and professionals' roles in curriculum decision making.  
*ED-Educational Studies*

**EDG 6224. Curriculum Policy Analysis**

3(3,0). PR: Graduate standing. Overview and synthesis of major components of policy involving curriculum. Exploration of the relationship between curriculum policy and curriculum evaluation as parts of analysis.  
*ED-Educational Studies*

**EDG 6236. Principles of Instruction**

3(3,0). PR: C.I. The analysis and application of selected concepts and theories of learning in relation to curriculum design, classroom strategies, and instructional techniques.  
*ED-Educational Studies*

**EDG 6253. Curriculum Inquiry**

3(3,0). Provides participants with the knowledge and skills necessary to understand, plan, and implement effective curriculum practices and change in K-plus and other instructional settings.  
*ED-Educational Studies*

**EDG 6285. Evaluation of School Programs**

3(3,0). PR: Graduate standing. History of program evaluation, systems approaches to program evaluation, concepts of stakeholder and qualitative approaches to program evaluation, the role of evaluator and administrator.  
*ED-Ed Research, Tech & Lead*

**EDG 6326. Assessment of Quality Teaching**

3(3,0). PR: Valid teaching certificate. Emphasis is placed on methods of assessing teacher quality, particularly as regards content knowledge. Express formal and self-assessment based on state and national standards.  
*ED-Educational Studies*

**EDG 6329. Quality Teaching Practices**

3(3,0). PR: Valid teaching certificate. Focus is on skills and competencies of quality reflective educators. Teaching episodes are videotaped and analyzed against national standards of teaching quality.  
*ED-Educational Studies*

**EDG 6337. Techniques of Game Use in Education**

3(3,0). Analysis, development, and use of educational games as an approach to classroom teaching.  
*ED-Educational Studies*

**EDG 6392. Seminar in Quality Teaching**

3(3,0). PR: Valid teaching certificate. Selected educational issues, policies and learning theories in relation to standards of quality teaching. Emphasizes inquiry resulting in the alignment of teacher beliefs and practices. May be repeated for credit.  
*ED-Educational Studies*

**EDG 6415. Principles of Instruction and Classroom Management**

3(3,0). PR: Graduate standing or consent of department chair. Students are exposed to various methods of delivering instruction, as well as organizational and management skills. Students microteach and view lessons to develop reflective practices.  
*ED-Educational Studies*

**EDG 6940. Graduate Internship**

1-8(0,1-8). PR: Approval of student internship office. Internship in an appropriate educational setting under the direction of a qualified field supervisor and/or a university supervisor. May be repeated for credit.  
*ED-Educational Studies*

**EDG 7221. Advanced Curriculum Theory**

3(3,0). PR: EDG 6223 or C.I. An analysis of the research base which supports the various dimensions of the curriculum field.  
*ED-Educational Studies*

**EDG 7325. Models of Teaching and Instructional Theory**

3(3,0). PR: EDG 6223; EDF 7232 or C.I. Examination of models of teaching. Focus on the roles of the teacher, applicable contexts and learning goals; historical, philosophical, learning, and research basis.  
*ED-Educational Studies*

**EDG 7692. Issues in Curriculum**

3(3,0). PR: EDG 7221; EDG 7325; EDF 7232 or C.I. Examination of the relationships between the research bases of instructional and curriculum theories with emphasis on current issues and concerns.  
*ED-Educational Studies*

**EDH 5306. Teaching Methods in Engineering**

1(1,0). PR: Graduate standing in an engineering discipline. This course will cover basis teaching pedagogy to help engineering students becomes better TA's and help students deliver better technical presentations.  
*ECS-Mechanical/Matrls/Aerosp*

**EDH 6044. Career Exploration in Higher Education**

3(3,0). PR: C.I. Explore the practical application in career decision-making in Higher Education through personal and professional analysis.  
*ED-Ed Research, Tech & Lead*

**EDH 6047. The College Community and the Student**  
3(3,0). PR: C.I. A study of the composition of student populations in American colleges and universities and the factors within the learning environment which support student development.

*ED-Ed Research, Tech & Lead*

**EDH 6053. The Community College in America**  
3(3,0). PR: C.I. Study of the history, philosophy, goals, and mission of the community college. Functions, policies, practices to satisfy local needs.

*ED-Ed Research, Tech & Lead*

**EDH 6065. History and Philosophy of Higher Education**  
3(3,0). PR: C.I. Early European and American universities, both state and private. Also considers small and private junior and senior colleges.

*ED-Ed Research, Tech & Lead*

**EDH 6081. Contemporary Problems in Community Colleges**

3(3,0). PR: EDH 6204 or C.I. Analysis of the critical issues facing community colleges today and in the near future.

*ED-Ed Research, Tech & Lead*

**EDH 6204. Community College Organization, Administration, and Supervision**

3(3,0). PR: C.I. An analysis of the organizational structure and administrative functions of the community college as they relate to instruction and curriculum.

*ED-Ed Research, Tech & Lead*

**EDH 6215. Community College Curriculum**

3(3,0). PR: C.I. Examination of the background, development, function, and goals of the curriculum of the community college.

*ED-Ed Research, Tech & Lead*

**EDH 6305. Teaching and Learning in the Community College**

3(3,0). PR: EDF 7232. Focuses on teaching effectiveness in the community college.

*ED-Ed Research, Tech & Lead*

**EDH 6407. Ethical and Legal Issues in Student Personnel**

3(3,0). PR: C.I. Studies of ethical and legal issues in College Student Personnel.

*ED-Ed Research, Tech & Lead*

**EDH 6504. Institutional Advancement in Higher Education**

3(3,0). PR: Admission to graduate program in Education or C.I. Examination of current issues and trends in Institutional Advancement in Higher Education.

*ED-Ed Research, Tech & Lead*

**EDH 6505. Finance in Higher Education**

3(3,0). PR: Completion of Phase II of Education Professional Preparation or C.I. Fundamental considerations in the finance of institutions of higher education.

*ED-Ed Research, Tech & Lead*

**EDH 6634. Student Personnel Services in Higher Education**

3(3,0). PR: C.I. A basic introduction to student personnel services which covers philosophy, history, functions, theory, and issues.

*ED-Ed Research, Tech & Lead*

**EDH 6935. Capstone Seminar in College Student Personnel**

3(3,0). PR: C.I. A study of current issues in college student personnel with primary emphasis on the role of professionals and the challenges they may encounter.

*ED-Ed Research, Tech & Lead*

**EDH 6936. Seminar for Future Professoriate**

3(3,0). PR: Admission to the Professoriate graduate certificate Program or C.I. Diverse expectations and career trajectories of university faculty, professional portfolios, and critical analysis of strengths and weaknesses. Graded S/U.

*ED-Educational Studies*

**EDH 6947. Practicum in Student Personnel**

3(3,0). PR: Student Personnel in Higher Education, EDH 6040 (revision requested from EDH 6634). Provides supervised learning experience and opportunities for assessments and evaluation.

*ED-Ed Research, Tech & Lead*

**EDH 7051. Educational Leadership in Higher Education**

3(3,0). PR: Doctoral standing or C.I. Examines philosophy of administration, principles of management and their application in colleges and universities through case studies of administrative problems.

*ED-Ed Research, Tech & Lead*

**EDH 7054. Seminar in Community Colleges**

3(3,0). PR: Doctoral standing or C.I. Explores the past, present, and future of the two-year college. Examines history, operations, funding, internal constituents, curricular mission, societal role, and current issues.

*ED-Ed Research, Tech & Lead*

**EDH 7056. Politics/Governance/Finance Higher Education**

3(3,0). PR: Doctoral standing or C.I. Study of policy developmental process, governance issues, and financial issues in higher education.

*ED-Ed Research, Tech & Lead*

**EDH 7365. Supervision/Consultation Processes in Student Affairs**

3(3,0). PR: Doctoral standing or C.I. Examination of the many aspects of consultation, supervision, and organizational development in student personnel.

*ED-Ed Research, Tech & Lead*

**EDH 7366. Assessment Practices in Student Affairs**

3(3,0). PR: Doctoral standing or C.I. Provides strategies for creating and conducting effective assessment programs for activities and services offered by student services.

*ED-Ed Research, Tech & Lead*

**EDH 7408. Educational Personnel and Contract Negotiation**

3(3,0). PR: Doctoral standing or C.I. Examination in higher education settings of the personnel function in institutions including planning, recruitment, selection, placement, induction, collective bargaining, and contract administration.

*ED-Ed Research, Tech & Lead*

**EDH 7638. Advance Seminar in Student Personnel**

3(3,0). PR: Doctoral standing or C.I. Analyses of the concept of leadership in student development using cultural, ethical, sociological, and historical perspectives.

*ED-Ed Research, Tech & Lead*

**EDM 6047. Understanding the Young Adolescent**

3(3,0). PR: Graduate standing. An exploration of the unique characteristics of adolescence: social emotional, intellectual physical and implications for education.

*ED-Educational Studies*

**EDM 6235. Contemporary Issues of Middle Level Education**

3(3,0). PR: Graduate standing or C.I. Critical analysis of the contemporary educational issues that directly impact middle level schools.

*ED-Educational Studies*

**EDM 6321. Middle Level Instruction**

3(3,0). PR: Graduate standing. Examination of new models for teaching including brain research, multiple intelligences, learning styles, cooperative learning appropriate for young adolescents.

*ED-Educational Studies*

**EDM 6401. Principles of Middle Level Education**

3(3,0). PR: graduate standing. Development of a professional understanding of middle schools: rationale, organization, instructional strategies and characteristics of exemplary middle schools.

*ED-Educational Studies*

**EDP 6056. Advanced Educational Psychology**

3(3,0). PR: Graduate admission and C.I. Principles of educational psychology for teaching, intervention, and educational services in schools.

*ED-Child, Family & Comm Sci*

**EDP 6213. Seminar in Applied Learning and Instruction I**

3(3,0). PR: Graduate standing or C.I. An overview of contemporary theories and research related to human learning and instruction with a focus on affective and motivational issues surrounding learning and instruction.

*ED-Educational Studies*

**EDP 6217. Seminar in Applied Learning and Instruction II**

3(3,0). PR: EDP 6213 or C.I. An overview of contemporary theories and research in human learning and instruction. Emphasis on cognition, critical thinking, problem-solving, individual differences, and assessment of learning outcomes.

*ED-Educational Studies*

**EDS 5356. Supervision of Professional Laboratory Experiences**

3(2,1). PR: C.I. Study of the undergraduate professional laboratory experiences program, with emphasis on the role and responsibilities of the Teacher Education Associate or Supervising Teacher.

*ED-Ed Research, Tech & Lead*

**EDS 6053. Trends in Educational Supervision**

3(3,0). PR: Basic supervision course or C.I. Examination and analysis of the trends, issues, and problems in educational supervision.

*ED-Ed Research, Tech & Lead*

**EDS 6100. Leadership**

3(3,0). PR: C.I. Analysis of the interactive process within and between groups, emphasizing the formation and functioning of groups; development of skills essential for effective leadership.

*ED-Ed Research, Tech & Lead*

**EDS 6123. Educational Supervisory Practices I**

3(3,0). PR: Basic Teacher Certificate or C.I. Analysis of effective supervisory behavior as it relates to human relations / communication skills; leadership; motivation; curriculum development; community relations; and service to teaching.

*ED-Ed Research, Tech & Lead*

**EDS 6130. Educational Supervisory Practices II**

3(3,0). PR: Basic Teacher Certificate or C.I. Analysis of effective supervisory behavior as it relates to planning and change; observation and conferencing skills; staff and group development, problem solving; and decision making.

*ED-Ed Research, Tech & Lead*

**EDS 7111. Administration and Supervision of Staff Development**

3(2,1). PR: Basic Teacher Certificate or C.I. Role and procedures for the supervisor or administrator in staff development. Assessment of staff development needs and delivery systems are stressed.

*ED-Ed Research, Tech & Lead*

**EEC 5205. Programs and Trends in Early Childhood Education**

3(3,0). PR: Regular Certificate or C.I. Philosophy, content, facilities, instructional materials, and activities appropriate for children ages 3 to 8 years; current research; issues and trends. Concurrent laboratory experiences.

*ED-Child, Family & Comm Sci*

**EEC 5206. Organization of Instruction in Early Childhood Education**

3(3,0). PR: Regular certificate or C.I. Organization in instruction relating to language arts, social sciences, mathematics, health and physical education, problems relating to reading readiness and cognition (K-3). Concurrent laboratory experiences.

*ED-Child, Family & Comm Sci*

**EEC 5208. Creative Activities in Early Childhood**

3(3,0). PR: Regular certificate or C.I. Organization of instruction and methods for creative activities involving music, art, literature and educational toys, integration of activities, and basic skills curriculum (K-3). Concurrent laboratory experience.

*ED-Child, Family & Comm Sci*

**EEC 6216. Communicative Arts in Early Childhood Education**

3(3,0). PR: Graduate standing or C.I. Study of young children's many forms of linguistic pictorial, and three-dimensional expression and communication.

*ED-Child, Family & Comm Sci*

**EEC 6263. Studies in Curriculum Environments for Early Childhood Education**

3(3,0). PR: Graduate standing or C.I. Innovative curriculum designs in Early Childhood Education, with emphasis given to related research. May be repeated for credit.

*ED-Child, Family & Comm Sci*

**EEC 6269. Play Development, Intervention, and Assessment**

3(3,0). Explores play development, facilitation, intervention, and assessment.

*ED-Child, Family & Comm Sci*

**EEC 6405. Home-School-Community Interaction in Early Childhood Education**

3(3,0). PR: Graduate standing. Explores the knowledge and skills necessary to form partnerships with families and the community to enhance the care and education of young children.

*ED-Child, Family & Comm Sci*

**EEC 6406. Guiding and Facilitating Social Competence**

3(3,0). Provides students with techniques to facilitate and guide the behavior and emotional growth of young children.

*ED-Child, Family & Comm Sci*

**EEC 6525. Early Childhood Program Administration**

3(3,0). PR: Graduate standing. Organizational and administrative theories as they relate to practice in selected early childhood services.

*ED-Child, Family & Comm Sci*

**EEC 6947. Practicum in Family Liaison Building**

3(3,0). PR: Completed 12 semester hours in the M.Ed. Early Childhood degree program. Field-based placement in a social service agency, childcare center, hospital, or school, working with a mentor family liaison to develop skills/ knowledge with diverse families. May be repeated for credit.

*ED-Child, Family & Comm Sci*

**EEE 5332C. Thin Film Technology**

3(2,1). PR: EEE 3350 or equivalent. Presents the various thin film deposition techniques for the fabrication of microelectronic, semiconductor, and optical devices.

*ECS-Electrical & Computer Eng*

**EEE 5352. Semiconductor Material and Device Characterization**

3(3,0). PR: EEE 3350 or C.I. Semiconductor material characterization resistivity, mobility, doping carrier lifetime, device properties, threshold voltage, interface charge of MOS devices, optical and surface characterization of films.

*ECS-Electrical & Computer Eng*

**EEE 5353. Semiconductor Device Modeling and Simulation**

3(3,0). PR: EEE 3307C. Large signal and small signal model development for semiconductor diodes, BJTs, and MOSFETs. Parameter extraction, numerical algorithm, and SPICE simulation are included.

*ECS-Electrical & Computer Eng*

**EEE 5356C. Fabrication of Solid-State Devices**

4(3,3). PR: EEE 3350. Fabrication of microelectronic devices, processing technology, ion implantation and diffusion, device design, and layout. Laboratory includes device processing technology.

*ECS-Electrical & Computer Eng*

**EEE 5370. Operational Amplifiers**

3(3,0). PR: EEE 4309C. Ideal and non-ideal Op-Amps. Linear applications. Active RC and switched-capacitor filters. Non-linear and other functional circuits. Frequency stability and compensation of Op-Amps.

*ECS-Electrical & Computer Eng*

**EEE 5378. CMOS Analog and Digital Circuit Design**

3(3,0). PR: EEE 4309C. Advanced principles and design techniques for CMOS ICs including most recent published results.

*ECS-Electrical & Computer Eng*

**EEE 5390. Full-Custom VLSI Design**

3(3,0). PR: EEE 3342C, EEE 3307C. CMOS VLSI design methodologies; full custom chip design, industrial CAD tools; simulation; verification.

*ECS-Electrical & Computer Eng*

**EEE 6317. Power Semiconductor Devices and Integrated Circuits**

3(3,0). PR: EEE 3350 or equivalent or C.I. Fundamental understanding of modern power semiconductor devices and integrated circuits (ICs) in relation to their applications in power electronics systems.

*ECS-Electrical & Computer Eng*

**EEE 6326C. MEMS Fabrication Laboratory**

3(1,2). PR: CI. Silicon Nitride and Poly-silicon Depositions, Photolithography, Dry and Wet etching processes, Metal depositions and etching, MEMS device design and fabrication.

*ECS-Electrical & Computer Eng*

**EEE 6327. Design of Video Coding Systems**

3(3,0). PR: EEL 4768C and EEL 4750. VLSI architectures and image/video coding algorithms, image/video coding standards, and architectural issues related with area/power/performance.

*ECS-Electrical & Computer Eng*

**EEE 6338. Advanced Topics in Microelectronics**

3(3,0). PR: C.I. Covers advanced topics in microelectronics such as semiconductor device physics, semiconductor device fabrication, and semiconductor device modeling.  
*ECS-Electrical & Computer Eng*

**EEE 6371. Advanced Electronics I**

3(3,0). PR: EEE 5378 or EEE 5370. Models for integrated-circuit active devices. Analysis and design of IC amplifiers. Feedback amplifiers. Frequency response and stability. Compensation of amplifiers.  
*ECS-Electrical & Computer Eng*

**EEE 6372. Advanced Topics in Electronics**

3(3,0). PR: EEE 6371 or C.I. Advanced and current topics in electronics such as power electronics and semiconductor integrated circuits.  
*ECS-Electrical & Computer Eng*

**EEL 5173. Linear Systems Theory**

3(3,0). PR: EEL 3657. Models and properties of linear systems, transformation, controllability and observability, control and observer designs, MFD, and realization theory.  
*ECS-Electrical & Computer Eng*

**EEL 5245C. Power Electronics**

3(2,1). PR: EEE 4309C. Principles of power electronics, power semiconductor devices, inverter topologies, switch-mode and resonant dc-to-dc converters, cyclo-converters, applications.  
*ECS-Electrical & Computer Eng*

**EEL 5272. Biomedical Sensors**

3(3,0). PR: EEL 4750 or EEL 4832 or C.I. Study of engineering concepts behind the various biomedical sensors used to monitor a patient undergoing clinical therapy.  
*ECS-Electrical & Computer Eng*

**EEL 5425C. RF and Microwave Measurement Techniques**

4(3,3). PR: EEL 4436C or EEL 5482 or EEL 5439C. RF and Microwave components in wireless systems, i.e. antennas, passive components, active circuits, as well as noise, modulation are characterized by measurement and designed/verified by EM/circuit software.  
*ECS-Electrical & Computer Eng*

**EEL 5432. Satellite Remote Sensing**

3(3,0). PR: EEL 3470 or PHY 4324. Fundamentals of satellite remote sensing, orbits and geometry, radiative transfer theory, microwave and infrared sensing techniques, ocean, ice and atmosphere geophysical measurements.  
*ECS-Electrical & Computer Eng*

**EEL 5437C. Microwave Engineering**

4(3,3). PR: EEL 3470 or C.I. Transmission line theory, Smith charts, S-parameters, simple impedance matching circuits, wave guides, resonators, basic microwave measurements.  
*ECS-Electrical & Computer Eng*

**EEL 5439C. RF and Microwave Communications**

3(2,1). PR: EEL 4436C or equivalent. RF and microwave active circuits microstrip amplifier, oscillator, and mixer design and fabrication. Receiver design, noise, familiarization with network and spectrum analyzers  
*ECS-Electrical & Computer Eng*

**EEL 5462C. Antenna Analysis and Design**

3(3,1). PR: EEL 3470 or equivalent. Fundamentals of antennas; dipoles, loops, arrays, apertures, and horns. Analysis and design of various antennas.  
*ECS-Electrical & Computer Eng*

**EEL 5482. Electromagnetic Theory I**

3(3,0). PR: Graduate standing or C.I. Maxwell's equations, boundary conditions, propagation and reflection, guided waves.  
*ECS-Electrical & Computer Eng*

**EEL 5513. Digital Signal Processing Applications**

3(3,0). PR: EEL 4750. The design and practical consideration for implementing Digital Signal Processing Algorithms including Fast Fourier Transform techniques, and some useful applications.  
*ECS-Electrical & Computer Eng*

**EEL 5517. Surface Acoustic Wave Devices and Systems**

3(3,0). PR: EEL 3552C. Course discusses SAW technology which includes the physical phenomenon, transducer design and synthesis, filter design and performance parameters. Actual devices and communication systems are presented.  
*ECS-Electrical & Computer Eng*

**EEL 5542. Random Processes I**

3(3,0). PR: EEL 3552C and STA 3032. Elements of probability theory, random variables, and stochastic processes.  
*ECS-Electrical & Computer Eng*

**EEL 5547. Introduction to Radar Systems**

3(3,0). PR: EEL 3552C. Introduction to Pulse and CW Radar Systems. Chirp Radar Systems. Tracking Radar. Noise in Radar Systems.  
*ECS-Electrical & Computer Eng*

**EEL 5625. Applied Control Systems**

3(3,0). PR: C.I. Designed to develop basic understanding of advanced control methods for nonlinear systems described by ordinary and partial differential equations and to expose recent results and ongoing research issues in the area of MEMS.  
*ECS-Electrical & Computer Eng*

**EEL 5630. Digital Control Systems**

3(3,0). PR: EEL 3657. Real-time digital control system analysis and design, Z-transforms, sampling and reconstruction, time and frequency response, stability analysis, digital controller design.  
*ECS-Electrical & Computer Eng*

**EEL 5704. Computer Aided Logical Design**

3(3,0). PR: EEL 4767C. Design, analysis and synthesis of sequential logic circuits and systems. Data path and controller design using a hardware description language.  
*ECS-Electrical & Computer Eng*



**EEL 5708. High Performance Computer Architecture**  
3(3,0). PR: EEL 4767C. Engineering of high performance computer systems. Memory, processor and control sub-systems design tradeoffs. Virtual and cache memory. Pipelining, vector computing.  
*ECS-Electrical & Computer Eng*

**EEL 5722C. Field-Programmable Gate Array (FPGA) Design**  
3(3,1). PR: EEE 3342C or C.I. FPGA architectures, design flow, technology mapping, placement, routing, reconfigurable computing applications, and evolvable hardware.  
*ECS-Electrical & Computer Eng*

**EEL 5762. Performance Analysis of Computer and Communication Systems**  
3(3,0). PR: EEL 4767C, STA 3032. Stochastic modeling and discrete-event simulation; Markov chains; networks of queues; SemiMarkov models; application to multiprocessor systems, switching and multi-user communications.  
*ECS-Electrical & Computer Eng*

**EEL 5771C. Engineering Applications of Computer Graphics**  
3(2,3). PR: EGN 3420 or C.I. Computer graphics in engineering applications. Laboratory assignments.  
*ECS-Electrical & Computer Eng*

**EEL 5780. Wireless Networks**  
3(3,0). PR: EEL 4781 or C.I. The wireless networking topics include: cellular networks, multiple access protocols, channel assignment and resource allocation, mobility and location management, handoffs, routing, authentication, call admission control and QoS provisioning, network layer issues, wireless data networking (WAP, GSM, GPRS, CDMA, WCDMA.)  
*ECS-Electrical & Computer Eng*

**EEL 5820. Image Processing**  
3(3,0). PR: MAP 2302, EGN 3420, EEL 4750 or C.I. Two-dimensional signal processing techniques; pictorial image representation; spatial filtering; image enhancement and encoding; segmentation and feature extraction; introduction to image understanding techniques.  
*ECS-Electrical & Computer Eng*

**EEL 5825. Pattern Recognition**  
3(3,0). PR: MAP 2302, EGN 3420. Graph-theoretic and syntactic methods of pattern analysis. Decision functions; optimum decision criteria; training algorithms; feature extraction; unsupervised learning; data reduction and potential functions.  
*ECS-Electrical & Computer Eng*

**EEL 5860. Software Requirements Engineering**  
3(3,0). PR: Graduate standing or C.I. Excellent oral and written communication skills. Excellent problem solving skills. In-depth study of software requirements engineering within a process centered framework. Methods for requirements elicitation, analysis, description, and validation. Formal and informal specification.  
*ECS-Electrical & Computer Eng*

**EEL 5874. Expert Systems and Knowledge Engineering**  
3(3,0). PR: EEL 4872 or C.I. Introduction to expert systems in engineering. Expert systems tools and interviewing techniques. This course is hands-on and project oriented.  
*ECS-Electrical & Computer Eng*

**EEL 5881. Software Engineering I**  
3(3,0). PR: EGN 3420, EEL 4851C or C.I. Design, implementation, and testing of computer software for Engineering applications.  
*ECS-Electrical & Computer Eng*

**EEL 5892. Continuous System Simulation II**  
3(3,0). PR: EEL 4890. Introduction to Simulink. Numerical integration including one-step and multi-step methods. Stiff systems and numerical stability. Simulink projects.  
*ECS-Electrical & Computer Eng*

**EEL 5936. Current Topics in EECS**  
0(1,0). PR: Open to all ECE graduate students. Lectures presented by ECE and national lectures will provide our students a broad view of the state of the art EE and CE fields. Graded S/U.  
*ECS-Electrical & Computer Eng*

**EEL 6065. Formal Approaches to Specification of Software-Intensive Systems**  
3(3,0). PR: Graduate standing or C.I.; and discrete math and matrix algebra (equivalent to STA 3032, EGN 3420, and EEL 4832); and EEL 5881 or EEL 5860. Issues and current research in formal specification and verification of software-intensive systems. mathematical models and formalisms. Projects, presentations, analysis of literature.  
*ECS-Electrical & Computer Eng*

**EEL 6208. Advanced Machines**  
3(3,0). PR: EEL 4205. Theory of electric machines using reference frame transformations: Basic principles of dc and ac machines, including induction and synchronous, are included. Simulation techniques for steady state and dynamic performance analysis will be used to analyze operation of electric machines with solid state drives.  
*ECS-Electrical & Computer Eng*

**EEL 6246. Power Electronics II**  
3(3,0). PR: EEL 5245C. Advanced topics in power electronics, soft-switching techniques, small-signal modeling of PWM and resonant converters, control techniques, power factor correction circuits.  
*ECS-Electrical & Computer Eng*

**EEL 6255. Advanced Power Systems Analysis**  
3(3,0). PR: EEL 4216 or C.I. Continuation of EEL 4216. Topics to include symmetrical and unsymmetrical fault analysis, power system estimation and control and power system stability.  
*ECS-Electrical & Computer Eng*

**EEL 6269. Advanced Topics in Power Engineering**  
3(3,0). PR: EEL 6255. A current topic will be discussed such as power system transients, system protection, T&D, and dielectric engineering.  
*ECS-Electrical & Computer Eng*

**EEL 6358. Advanced Semiconductor Device I**

3(3,0). PR: EEE 3350. First course in advanced semiconductor device physics and modeling. Main stream devices including junctions diode, bipolar transistor, and metal-oxide field-effect transistor.

*ECS-Electrical & Computer Eng*

**EEL 6463. Antenna Analysis and Design II**

3(3,0). PR: EEL 5462C. Aperture antennas, reflectors, and microstrip antennas.

*ECS-Electrical & Computer Eng*

**EEL 6481. Numerical Techniques in Electromagnetics**

3(3,0). PR: EEL 6488 or C.I. Applications of finite difference methods (FDTD), finite element method, integral equation method (method of moments) to electromagnetics.

*ECS-Electrical & Computer Eng*

**EEL 6488. Electromagnetic Theory II**

3(3,0). PR: EEL 5482 or C.I. Scattering, diffraction, Green's function, and method of moments.

*ECS-Electrical & Computer Eng*

**EEL 6489. Advanced Topics in Electromagnetics and Microwaves**

3(3,0). PR: C.I. Advanced and current topics in EM fields, antennas, and microwaves.

*ECS-Electrical & Computer Eng*

**EEL 6502. Adaptive Digital Signal Processing**

3(3,0). PR: EEL 5513 or C.I. Wiener filtering, Least Mean Square and Recursive Least Squares based algorithms, adaptive prediction and identification with applications such as echo cancellation, etc.

*ECS-Electrical & Computer Eng*

**EEL 6504. Communications Systems Design**

3(3,0). PR: EEL 6530. Information and coding theory. Modem design. Binary and M-ary modulations. Intersymbol interference and pulse shaping. DS and FS spread-spectrum systems.

*ECS-Electrical & Computer Eng*

**EEL 6505. Multidimensional Digital Processing**

3(3,0). PR: EEL 5513 or C.I. Multidimensional signals and systems. Two-dimensional transforms and filters. Image processing applications.

*ECS-Electrical & Computer Eng*

**EEL 6530. Communication Theory**

3(3,0). PR: EEL 5542 or C.I. Communication in the presence of noise; analog and pulse modulation; use of phase-locked loops, synthesizers, VCOs, system implementations.

*ECS-Electrical & Computer Eng*

**EEL 6537. Detection and Estimation**

3(3,0). PR: EEL 6543. Use of hypothesis testing (Bayes, Minimax, Neyman-Pearson) and estimation theory (Bayes, Maximum-likelihood) for detecting or estimating signals in noise. Application in communications and radar.

*ECS-Electrical & Computer Eng*

| <b>Example of Course Identifier</b> |                                          |                                     |                               |                              |                                              |
|-------------------------------------|------------------------------------------|-------------------------------------|-------------------------------|------------------------------|----------------------------------------------|
| Prefix                              | Level Code<br>(first digit)              | Century Digit<br>(second digit)     | Decade Digit<br>(third digit) | Unit Digit<br>(fourth digit) | Lab Code                                     |
| SYG                                 | 1                                        | 0                                   | 1                             | 0                            |                                              |
| Sociology,<br>General               | Freshman<br>level at this<br>institution | Entry-level<br>General<br>Sociology | Survey<br>Course              | Social<br>Problems           | No laboratory<br>component<br>in this course |

**EEL 6543. Random Processes II**

3(3,0). PR: EEL 5542. Stochastic processes. Mean-squared estimation. Queueing theory. Spectral estimation. Applications to communications and radar systems.  
*ECS-Electrical & Computer Eng*

**EEL 6558. Advanced Topics in Digital Signal Processing**

3(3,0). PR: C.I. Advanced and current topics in digital signal processing, such as neural network, spectral analysis, and speech processing.  
*ECS-Electrical & Computer Eng*

**EEL 6564. Statistical Optics with Applications**

3(3,0). PR: OSE 5041 and EEL 5542, or C.I. Characterization of random optical waves with applications in communications, turbulence scattering, and imaging.  
*ECS-Electrical & Computer Eng*

**EEL 6590. Advanced Topics in Communications**

3(3,0). PR: C.I. Advanced and current topics in communications, such as coding theory, information theory, spread spectrum, etc.  
*ECS-Electrical & Computer Eng*

**EEL 6616. Adaptive Control**

3(3,0). PR: EEL 5173. System identification and adaptive control design, including identification algorithms, MRAC, STR, and stochastic adaptive control. Lyapunov stability and input-output stability.  
*ECS-Electrical & Computer Eng*

**EEL 6617. Fundamentals of Modern Multivariable Control**

3(3,0). PR: EEL 4657, EEL 5173, or C.I. Emphasis on stability and performance analysis in time and frequency domains and on design tools for optimal performance and robustness.  
*ECS-Electrical & Computer Eng*

**EEL 6619. Nonlinear Robust Control and Applications**

3(3,0). PR: EEL 5173 and EEL 6621. Stability, performance and robustness of nonlinear systems with uncertainties, Lyapunov-based designs, recursive designs and nonlinear optimal designs.  
*ECS-Electrical & Computer Eng*

**EEL 6621. Nonlinear Control Systems**

3(3,0). PR: EEL 5173. Phase plane descriptions of nonlinear phenomena, limit cycles, jump conditions, stability, describing functions, Liapunov and Popov theory, time and frequency domain analysis for nonlinear systems.  
*ECS-Electrical & Computer Eng*

**EEL 6662. Design of Robot Control Systems**

3(3,0). PR: EEL 5173. Coordinate transformation, differential equation of motion, trajectory planning, trajectory control, classical controls, advanced controls, force control, constrained motions, and redundancy.  
*ECS-Electrical & Computer Eng*

**EEL 6667. Planning and Control for Mobile Robotic Systems**

3(3,0). PR: EEL 5173 or EEL 5630. Non-holonomic systems, kinematics and dynamics, trajectory planning and obstacle avoidance, canonical terms, control design, stability, performance, and robustness.  
*ECS-Electrical & Computer Eng*

**EEL 6671. Modern and Optimal Control Systems**

3(3,0). PR: EEL 5173. The optimal control problem. Necessary conditions for constrained minimums in finite dimensional space. Application to discrete time control problems. Pontryagin conditions and Hamilton-Jacobi equations. Computational considerations.  
*ECS-Electrical & Computer Eng*

**EEL 6674. Optimal Estimation for Control**

3(3,0). PR: EEL 5173 or C.I. Optimal filtering, smoothing, and prediction methods are analyzed with applications to a number of linear and nonlinear dynamic systems.  
*ECS-Electrical & Computer Eng*

**EEL 6680. Advanced Topics in Modern Control Systems**

3(3,0). PR: C.I. Introduces students to present-day issues in control systems analysis, design, and implementation.  
*ECS-Electrical & Computer Eng*

**EEL 6683. Cooperative Control of Networked Autonomous Systems**

3(3,0). PR: EEL 5173 or C.I. Fundamentals of cooperative control theory for autonomous vehicles and agents, with emphasis on consensus, effects of intermittent and delayed communication/sensing network, and cooperative control designs.  
*ECS-Electrical & Computer Eng*

**EEL 6707. Parallel Processing**

3(3,0). PR: EEL 5708. Systems with one or more central I/O processors. Types of parallelism granularity and memory organization. Processor/memory message passing systems. Shared memory multiprocessors.  
*ECS-Electrical & Computer Eng*

**EEL 6769. Parallel Knowledge Processing Systems**

3(3,0). PR: EEL 5762 and EEL 5874 and EEL 6707 or C.I. Design and performance of computer architectures supporting parallel reasoning techniques, including concurrency in search algorithms, genetic algorithms, semantic networks, marker-propagation, and rule-based systems.  
*ECS-Electrical & Computer Eng*

**EEL 6785. Computer Network Design**

3(3,0). PR: EEL 4768C or C.I. Network types and network protocols. Design of networks and analysis of their performance.  
*ECS-Electrical & Computer Eng*

**EEL 6786. Advanced Networking Hardware Design**

3(3,0). PR: EEL 4781, EEL 4768C, or C.I. Advanced design techniques, specifically for packet-switched networks (wired, wireless, or optical).  
*ECS-Electrical & Computer Eng*

**EEL 6788. Advanced Topics in Computer Networks**

3(3,0). PR: EEL 4781 or C.I. Advanced topics in the networking field, driven by the latest research and technology developments.  
*ECS-Electrical & Computer Eng*

**EEL 6812. Introduction to Neural Networks**

3(3,0). PR: EEL 5825 or C.I. Artificial neural network theory, models, and architectures. Neurobiological basis, learning theory, applications, and hardware implementation issues.

*ECS-Electrical & Computer Eng*

**EEL 6823. Image Processing II**

3(3,0). PR: EEL 5820 or C.I. Advance topics in image processing: nonlinear and adaptive filtering morphological processing, color image processing, texture analysis, and image encoding.

*ECS-Electrical & Computer Eng*

**EEL 6843. Machine Perception**

3(3,0). PR: EEL 5820 or EEL 5825 or C.I. Advanced methods of machine understanding; simulation of intelligent machine systems; automatic recognition systems; visual tracking systems; multispectral feature analysis.

*ECS-Electrical & Computer Eng*

**EEL 6845. Intelligent Control**

3(3,0). PR: C.I. Design and development of intelligent machine systems; decision theory; intelligence modeling; neural models; advanced techniques in intelligent control.

*ECS-Electrical & Computer Eng*

**EEL 6865. Architecture and Design of Software Intensive Systems**

3(3,0). PR: Graduate standing or C.I.; and EEL 4851C or equivalent; and EEL 4884C or EEL 5881. In depth study of software architecture and design of engineering complex software-intensive systems. Theory and practice.

*ECS-Electrical & Computer Eng*

**EEL 6875. Engineering of Artificial Intelligence Systems**

3(3,0). PR: EEL 5874 or C.I. Introduction to the engineering of knowledge-based automated reasoning systems including the use of representation languages and object-oriented techniques. It is based on LISP.

*ECS-Electrical & Computer Eng*

**EEL 6876. Current Topics in Artificial Intelligence in Engineering Systems**

3(3,0). PR: EEL 6875 or C.I. Research in current topics including artificial intelligence, relevant to engineering systems including causal modeling, qualitative reasoning, temporal reasoning, and inductive reasoning. Review of current literature.

*ECS-Electrical & Computer Eng*

**EEL 6878. Modeling and Artificial Intelligence**

3(3,0). PR: EEL 6875 or C.I. Introduction to various applications of artificial intelligence techniques as they affect the engineering aspects of computer-based simulation, modeling, and training. The course will be taught as a seminar, making significant use of the current research literature. Topics include Intelligent Tutoring Systems, Situational Awareness, Intelligent Instructor Support, and Qualitative Modeling .

*ECS-Electrical & Computer Eng*

**EEL 6883. Software Engineering II**

3(3,0). PR: EEL 5881 or equivalent; C.I. Continuation of EEL 5881. Emphasis on term projects and case studies.

*ECS-Electrical & Computer Eng*

**EEL 6885. Software Engineering Quality Assurance Methods**

3(3,0). PR: EEL 5881, EEL 6883. Methods for verification and validation of software quality, including software engineering metrics and models.

*ECS-Electrical & Computer Eng*

**EEL 6886. Software Testing Theory**

3(3,0). PR: Graduate standing or C.I.; and Probability and Statistics; Calculus through Differential Equations; Numerical Methods and Matrix Algebra; Data Structures and Algorithms; C or C++ programming. Issues and current research in testing software-intensive systems. Application of mathematics, statistics, and operations research to software test; test automation; projects and analysis of literature.

*ECS-Electrical & Computer Eng*

**EEL 6887. Software Engineering Life-Cycle Control**

3(3,0). PR: EEL 5881, EEL 6883. Issues in software development life-cycle control including project cost and time estimation, methods and models, manpower allocation, and system configuration management.

*ECS-Electrical & Computer Eng*

**EEL 6893. Advanced Topics in Continuous Simulation**

3(3,0). PR: EEL 5892. In-depth treatment of dynamic errors (characteristic root and frequency response) using numerical integration, stability boundaries, real time simulation.

*ECS-Electrical & Computer Eng*

**EEL 6895. Current Issues in Real-Time Simulation**

3(3,0). PR: EEL 5771C, EEL 5892. Design considerations in real-time, computer-based, training simulator systems. Laboratory assignments.

*ECS-Electrical & Computer Eng*

**EEL 6897. Software Development for Real-Time Engineering Systems**

3(3,0). PR: EEL 5881, EEL 6883. Issues associated with developing software for real-time systems, including parallel processing, task synchronization, and task scheduling.

*ECS-Electrical & Computer Eng*

**EES 5318. Industrial Ecology**

3(3,0). PR: ENV 3001, ENV 4341. Discussion of similarities between ecological systems and industrial systems with the emphasis on material cycles, energy flow, pollution prevention, organizational structures, and environmental management.

*ECS-Civil & Environmental*

**EES 5605. Outdoor Noise Control**

3(3,0). PR: C.I. Community noise evaluation and control, legislative standards, instrumentation and measurement, abatement methods, and noise modeling.

*ECS-Civil & Environmental*

**EEX 5051. Exceptional Children in the Schools**

3(3,0). PR: Senior standing or C.I. Characteristics, definitions, educational problems, and appropriate educational programs for the exceptional children in schools.

*ED-Child, Family & Comm Sci*

**EEX 5702. Planning Curriculum for Pre-Kindergarten Children with Disabilities**

3(3,0). Focus on curriculum planning; developmentally appropriate practices and implementation of individualized instruction for pre-kindergarten children with disabilities.

*ED-Child, Family & Comm Sci*

**EEX 5750. Communication with Parents and Agencies**

3(3,0). Presentation of methods of interacting with community agencies, supporting and collaborating with families, developing a case management system, and facilitating program transition.

*ED-Child, Family & Comm Sci*

**EEX 6017. Typical and Atypical Applied Child Development**

3(3,0). Focus on the stages and sequence of development and the impact of disabilities and biomedical risk factors on learning and development.

*ED-Child, Family & Comm Sci*

**EEX 6028. Challenges of Poverty in Special Education**

3(3,0). PR: C.I. Examines the impact of poverty on students with disabilities in high poverty schools and the challenges this impact has on teaching these students.

*ED-Child, Family & Comm Sci*

**EEX 6061. Instructional Strategies Pre-K-6**

3(3,0). A varying exceptionalities strategies (SLD, EH, MH) course using a cross-categorical model. The course is concerned with the pre-k handicapped child through grade 6. A required field experience must be completed with the class depending on prior experience

*ED-Child, Family & Comm Sci*

**EEX 6065. Programming for Students with Disabilities at the Secondary Level**

3(3,0). PR: Graduate standing or C.I. and EEX 5051. Addresses instructional needs of secondary students with disabilities. It provides information on instruction, academic and social-personal skills, and transition planning.

*ED-Child, Family & Comm Sci*

**EEX 6107. Teaching Spoken and Written Language**

3(3,0). Diagnosis and remediation of spoken and written language problems found in the exceptional populations. Overview of alternative methods of communication.

*ED-Child, Family & Comm Sci*

**EEX 6222. Observation and Assessment of Young Children**

3(3,0). Study of formal and informal observation and assessment.

*ED-Child, Family & Comm Sci*

**EEX 6246. Nature of Autism: Theory and Educational Practice**

3(3,0). Theory and teaching applications for students with autism spectrum disorders includes 20 hour field-based experience. Designed for application towards requirements for State Endorsement in Autism.

*ED-Child, Family & Comm Sci*

**EEX 6295. Assessment and Curriculum Prescriptions for the Exceptional Population**

3(3,0). Addresses contemporary assessments and models for assessing exceptional children. Also addresses curriculum and prescription.

*ED-Child, Family & Comm Sci*

**EEX 6297. Assessment, Diagnosis, and Curriculum Prescriptions for Students with Autism**

3(3,0). Contemporary assessments and models for assessing exceptional children to address curriculum and prescription. Specific emphasis is placed on assessment of students with autism spectrum disorders.

*ED-Child, Family & Comm Sci*

**EEX 6342. Seminar-Critical Issues in Special Education**

3(3,0). PR: EEX 5051. An examination of research and current literature dealing with some of the critical issues in all areas of special education.

*ED-Child, Family & Comm Sci*

**EEX 6524. Organization and Collaboration in Special Ed**

3(3,0). PR: C.I. Addresses evaluation, assessment, personnel resource, grant writing, and other administrative issues. Presents collaborative models of intervention and service delivery.

*ED-Child, Family & Comm Sci*

**EEX 6612. Methods of Behavioral Management**

3(3,0). Analysis of the principles of behavior management and precision teaching and application of these principles to the solving of classroom management problems.

*ED-Child, Family & Comm Sci*

**EEX 6708. Teaming and Systems in Early Childhood Special Education**

3(3,0). PR: Graduate standing or C.I. The process of teaming and collaboration in planning and delivering developmental intervention services in natural environments for infants, toddlers and young children with disabilities.

*ED-Child, Family & Comm Sci*

**EEX 6759. Transition Planning and Interdisciplinary Teaming for Students with Disabilities**

3(3,0). PR: Graduate standing or C.I. Interdisciplinary teaming to include available resources, the recognition of the role of parents, teachers, and other professionals; functional community-based curriculum; employability skills; and transition planning.

*ED-Child, Family & Comm Sci*

**EEX 6863. Supervised Teaching Practicum with Exceptional Children**

2-7(12-40). PR: Bachelor's degree, approved program, and C.I. Supervised observation and teaching of an exceptional student.

*ED-Child, Family & Comm Sci*

**EEX 7320. Program Evaluation and Planning in Special Education**

3(3,0). PR: Admission to Education PhD program. Focus on evaluation models and summative program evaluations. Students are required to demonstrate knowledge of systemic program planning, models of program funding and program change.

*ED-Child, Family & Comm Sci*

**EEX 7428. Personnel Preparation: Special Education**

3(3,0). PR: Admission to Education PhD program. Focus on issues and strategies in preparation of teachers for students with disabilities; course development, implementation, adaptations/ modifications for pre-service personnel with disabilities.  
*ED-Child, Family & Comm Sci*

**EEX 7527. Professional Writing/Grant Writing in Special Education**

3(3,0). PR: Admission to Education PhD program. Writing for professional publication in special education; review and edit works of others; grant writing and review for private foundations and state and federal agencies.  
*ED-Child, Family & Comm Sci*

**EEX 7766. Technology Research/Training in Special Education**

3(3,0). PR: Admission to Education PhD program. Computer-assisted instruction and technology with special needs populations, demonstrates emerging technologies and provides instruction in personal productivity tools for special educators in higher education.  
*ED-Child, Family & Comm Sci*

**EEX 7865. Internship in College Instruction in Special Education**

3(3,0). PR: Admission to Education PhD program. Supervised experience in design, delivery, and evaluation of a college course in special education or disability services.  
*ED-Child, Family & Comm Sci*

**EEX 7866. Internship in Practicum Supervision in Special Education**

3(3,0). PR: Admission to Education PhD program. Supervised experience in observing, supervising, and evaluating student teacher performance in a practicum setting in special education or disability services.  
*ED-Child, Family & Comm Sci*

**EEX 7936. Current Issues/Trends in Special Education**

3(3,0). PR: Admission to PhD Education program. Analysis and review of contemporary issues and trends in special education, selecting and; defending a position on efficacy, legal, ethical, social, and policy issues.  
*ED-Child, Family & Comm Sci*

**EGC 6431. Guiding Human Relationships I**

3(3,0). PR: C.I. Human relationship skills that will enhance intrapersonal and interpersonal relationship skills in classrooms.  
*ED-Child, Family & Comm Sci*

**EGC 6432. Guiding Human Relationships II**

3(3,0). PR: C.I. Advanced human relationship skills that will enhance intrapersonal and interpersonal relationship skills in classrooms.  
*ED-Child, Family & Comm Sci*

**EGI 6051. Understanding the Gifted/Talented Student**

3(3,0). A study of characteristics of the gifted/talented students; theories and research; identification procedures; special problems; educational forces.  
*ED-Child, Family & Comm Sci*

**EGI 6245. Program Planning and Methodology for Gifted/Talented Students**

3(3,0). PR: Graduate standing or C.I. A study of organization, curriculum, strategies, and activities for the gifted/talented student; diagnostic teaching; learning-teaching styles; instructional materials; individualized instruction.  
*ED-Child, Family & Comm Sci*

**EGI 6246. Education of Special Populations of Gifted Students**

3(3,0). Focuses on needs of gifted subgroups, including females, minorities, handicapped, and students with learning and emotional problems. S.E.  
*ED-Child, Family & Comm Sci*

**EGI 6305. Theory and Development of Creativity**

3(3,0). This course focuses on the concept of creativity and explores various means of integrating creative strategies and instructional content areas.  
*ED-Child, Family & Comm Sci*

**EGI 6305. The Nature and Development of Creativity**

3(3,0). PR: Graduate standing or C.I. Explores theories and research about the concept and development of creativity.  
*ED-Child, Family & Comm Sci*

**EGM 6653. Theory of Elasticity**

3(3,0). PR: EML 5237. Review of stress and strain; solution by tensor stress and potential functions, axisymmetric problems; wave propagation.  
*ECS-Mechanical/Matrls/Aerosp*

**EGN 5035. Topics in Technological Development**

3(3,0). PR: C.I. Selected topics in the technological development of western civilization including the weight-driven clock, steam engine, electric light, etc.  
*ECS-College-ECS*

**EGN 5720. Internal Combustion Engine Analysis and Optimization**

3(2,3). PR: EGN 3343 or EGN 3358 or C.I. Internal combustion engine operating principles. Topics covered include engine design and operating parameters, combustion, thermodynamics, induction flow, and basic mathematical models.  
*ECS-Industrial & Management*

**EGN 5840. Small Rocket Applications for Teachers**

3(3,0). PR: Admission to Lockheed Martin/UCF Teaching Academy. Earth and space environments, rocket propulsion, meteorological and environmental measurements, payload launch procedures, orbits and trajectories, safety, model rocket experiments, field trips, student science experiments.  
*ECS-Mechanical/Matrls/Aerosp*

**EGN 5855C. Metrology**

3(2,2). PR: EIN 4391C or C.I. Advanced topics in inspection and measurement with applications in engineering and manufacturing.  
*ECS-Industrial & Management*

**EGN 5858C. Prototyping and Product Realization**

3(2,1). PR: Basic knowledge and/or experience in CAD/CAM technology or C.I. Product design and development cycle including design for functionality and manufacturability. Fundamentals, applications and practice of rapid prototyping and reverse engineering technologies.

*ECS-Industrial & Management*

**EGN 6721C. Experimental Methods for High Performance Engine Manufacturing**

3(2,3). PR: EGN 5270C; ESI 6247; STA 5205 OR STA 6207; or C.I. This course examines the unique problems encountered when one-off manufacturing of high performance engines due to the high level of component interaction.

*ECS-Industrial & Management*

**EIN 5108. The Environment of Technical Organizations**

3(3,0). PR: Graduate status or CI; EGN 4624 recommended. Presentation and investigation into the principles required to transform technologists into managers focusing on engineers, scientists, and other professionals providing services in technically-oriented organizations.

*ECS-Industrial & Management*

**EIN 5117. Management Information Systems I**

3(3,0). PR: C.I. The design and implementation of computer-based Management Information Systems. Consideration is given to the organizational, managerial, and economic aspects of MIS.

*ECS-Industrial & Management*

**EIN 5140. Project Engineering**

3(3,0). PR: Graduate standing or C.I. Role of engineer in project management with emphasis on project life cycle, quantitative and qualitative methods of cost, schedule, and performance control.

*ECS-Industrial & Management*

**EIN 5248C. Ergonomics**

3(2,2). PR: C.I. Applications of anthropometry, functional anatomy, mechanics, and physiology of musculoskeletal system concepts in the engineering design of industrial tools, equipments, and workstations.

*ECS-Industrial & Management*

**EIN 5251. Usability Engineering**

3(3,0). PR: STA 3032 or equivalent. Usability paradigms/principles; cognitive walk-throughs; heuristic, review-based, model-based, empirical and storyboard evaluation; techniques; query techniques; laboratory techniques; and field study approaches.

*ECS-Industrial & Management*

**EIN 5255C. Interactive Simulation**

3(2,2). PR: Graduate standing or C.I. Introduction to significant topics relative to the development and use of simulators for knowledge transfer in the technical environment.

*ECS-Industrial & Management*

**EIN 5317. Training System Design**

3(3,0). PR: Seniors, post bac or graduate standing or CI. How human performance deficiencies should be addressed from a systems design point of view. Manpower, personnel, and training considerations will be examined.

*ECS-Industrial & Management*

**EIN 5346. Engineering Logistics**

3(3,0). Study of the logistics life cycle involving planning, analysis and design, testing, production, distribution, and support.

*ECS-Industrial & Management*

**EIN 5356. Cost Engineering**

3(3,0). Cost estimation and control of engineering systems throughout the product life cycle.

*ECS-Industrial & Management*

**EIN 5368C. Integrated Factory Automation Systems**

3(2,2). PR: EIN 4391C or C.I. Automated material handling systems, industrial robots, automated guided vehicles, automated storage and retrieval systems, economics, justification.

*ECS-Industrial & Management*

**EIN 5388. Forecasting**

3(3,0). PR: ESI 5219. Industrial applications of forecasting methods with emphasis on microcomputer-based packages.

*ECS-Industrial & Management*

**EIN 5392C. Manufacturing Systems Engineering**

3(2,2). PR: EIN 4391C or C.I. The integration of manufacturing technologies and information processing concepts into a system for controlling the manufacturing enterprise.

*ECS-Industrial & Management*

**EIN 5607C. Computer Control of Manufacturing Systems**

3(2,2). PR: EIN 4391C, and EIN 4621C or EML 4535C; or C.I. Automated systems for manufacturing, numerical control (NC) machines, NC programming, robot control and programming, machine and system control.

*ECS-Industrial & Management*

**EIN 5936. Seminar in Industrial Engineering: Doctoral Research**

1(1,0). PR: C.I. Essential topics for doctoral research including research areas, skills, funding, proposals, ethics, mentors, seminars, societies, conferences, presentations, interviewing, grants, and publishing.

*ECS-Industrial & Management*

**EIN 6182. Engineering Management**

3(3,0). PR: EIN 5117, EIN 5356 or EIN 6357, and EIN 5140. Capstone investigation and analysis of topics for improving engineering enterprises in national and international competitive environments. Quantitative engineering tools/methods will be used.

*ECS-Industrial & Management*

**EIN 6215. System Safety Engineering and Management**

3(3,0). PR: C.I. Occupational injury and accident statistic. Accident investigation and prevention methods. Hazard analysis. Occupational safety and health standards and regulations. Product safety and liability.

*ECS-Industrial & Management*

**EIN 6258. Human Computer Interaction**

3(2,2). Computer task analysis, human-computer design guidelines and history, usability testing, next generation user interfaces, human-virtual environment interaction  
*ECS-Industrial & Management*

**EIN 6264C. Industrial Hygiene**

3(2,2). PR: EIN 5248C or C.I. Evaluation and control of occupational hazards including heat, cold, noise, vibration, radiation, solid waste, air contaminants, illumination, ventilation, and other work environments.  
*ECS-Industrial & Management*

**EIN 6270C. Work Physiology**

3(2,2). PR: EIN 5248C or C.I. Applications of the concepts of endurance fatigue, recovery and the energy cost of work in the determination of work capacity, job design, personnel assignment, and work/rest scheduling.  
*ECS-Industrial & Management*

**EIN 6279C. Biomechanics**

3(2,2). PR: EIN 5248C or C.I. Applications of body link system, kinematic aspect of body movement and mechanics of the human body concepts in the engineering design of work-systems.  
*ECS-Industrial & Management*

**EIN 6326. Technology Strategy**

3(3,0). PR: Graduate status. This course is designed to expose engineering management students to cutting edge tools and concepts for managing technology and product strategy. May be repeated for credit.  
*ECS-Industrial & Management*

**EIN 6336. Production and Inventory Control**

3(3,0). PR: EIN 4333C or equivalent. Review of models and techniques used in forecasting, production control and inventory control. Includes aggregate planning, production scheduling, inventory management, models, etc.  
*ECS-Industrial & Management*

**EIN 6339. Operations Engineering**

3(3,0). PR: EIN 6357, ESI 5306, or C.I. Methods and models for design, management, and control of operational processes in engineering and technical organizations. Includes considerations of quality, productivity, performance, benchmarking, constraints, and strategy.  
*ECS-Industrial & Management*

**EIN 6357. Advanced Engineering Economic Analysis**

3(3,0). PR: EGN 3613; STA 3032 or equivalent. Topics include measuring economic worth, economic optimization under constraints. Analysis of economic risk and uncertainty, foundations of utility functions.  
*ECS-Industrial & Management*

**EIN 6425. Scheduling and Sequencing**

3(3,0). Basic problems, models and techniques of scheduling. Emphasis on general job-shop scheduling problems. Analytical, graphical and heuristic methods are examined.  
*ECS-Industrial & Management*

**EIN 6459. Concurrent Engineering**

3(3,0). Elements of concurrent engineering and its applications. Topics include quality function deployment, design for manufacturability, and design for assembly  
*ECS-Industrial & Management*

**EIN 6528. Simulation Based Life Cycle Engineering**

3(3,0). PR: EIN 5255C or IDS 5717C or EIN 5117. This course examines the phenomenon of simulation based life cycle engineering. Case studies illustrate infrastructure and organization change necessary to gain operational and strategic advantage.  
*ECS-Industrial & Management*

**EIN 6645. Real-Time Simulation Agents**

3(3,0). PR: EIN 5255C. Mathematical modeling and computer simulation of engineering and scientific systems as agents within a simulation. Examination of hardware, software, and solution methods for real-time systems.  
*ECS-Industrial & Management*

**EIN 6647. Intelligent Simulation**

3(2,2). PR: EIN 6645 and EIN 6649C. The range of architectures and technologies relative to the simulation of intelligent processes.  
*ECS-Industrial & Management*

**EIN 6649C. Intelligent Tutoring Training System Design**

3(2,2). PR: EIN 5317. A systems approach to building intelligent tutoring within training systems. Emphasis on removing the human instructor from the content training.  
*ECS-Industrial & Management*

**EIN 6897. Space Industry Capstone Experience I**

3(3,0). PR: EIN 5140, EIN 5117. This course is designed to provide engineering students with knowledge and understanding of current topics pertinent to systems engineering and management.  
*ECS-Industrial & Management*

**EIN 6898. Space Industry Capstone Experience II**

3(3,0). PR: EIN 6897. This course is designed to provide engineering students with knowledge and understanding of current topics pertinent to systems engineering and management.  
*ECS-Industrial & Management*

**EIN 6930. Manufacturing Engineering Seminar**

3(3,0). PR: C.I. Presentation of latest manufacturing engineering technological advancements and related topics.  
*ECS-Industrial & Management*

**EIN 6933. Systems Acquisition**

3(3,0). What the engineer needs to know about the systems acquisition process when dealing with government contracting agencies  
*ECS-Industrial & Management*

**EIN 6934. Contract Negotiations**

3(3,0). PR: EIN 6933. A seminar on the contract negotiation phase of systems acquisition for the United States government; contract formulation and acquisition process management is emphasized.  
*ECS-Industrial & Management*



**EIN 6935. Advanced Ergonomics Topics**

3(3,0). PR: C.I. Seminar treatment of selected advanced topics in ergonomics.

*ECS-Industrial & Management*

**EIN 6936. Seminar in Advanced Industrial Engineering**

3(3,0). Topical seminar. Potential topic areas include quality function deployment, axiomatic design, design quality, benchmarking, re-engineering processes.

*ECS-Industrial & Management*

**ELD 6146. Instructional Strategies for Students with Learning Disabilities**

3(3,0). Instructional strategies for students with specific learning disabilities to include development, implementation, and evaluation of individualized educational plans and adaptation of curriculum and materials.

*ED-Child, Family & Comm Sci*

**ELD 6944. Diagnostic Learning-Disabilities Laboratory**

1(0,1). CR: ELD 6112 (Foundations and Diagnosis of LD). A laboratory designed for individual competence measurement of testing evaluation skills.

*ED-Child, Family & Comm Sci*

**EMA 5060. Polymer Science and Engineering**

3(3,0). PR: EGN 3365. Structure and properties of polymers, preparation and processing of polymers, mechanical properties, use in manufacturing and high tech applications.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5104. Intermediate Structure and Properties of Materials**

3(3,0). PR: EGN 3365. Fundamentals of dislocation theory, metallurgical thermodynamics and diffusion. Phase transformations, strengthening mechanisms and fracture. Introduction to engineering polymers, ceramics, and composites.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5106. Metallurgical Thermodynamics**

3(3,0). PR: EGN 3365. Laws of thermodynamics, phase equilibria, reactions between condensed and gaseous phases, reaction equilibria in condensed solution and phase diagrams.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5108. Surface Science**

3(3,0). PR: PHY 2049 and C.I. Methods of chemical and physical analysis of surfaces, with emphasis on ultra-high vacuum spectroscopies utilizing electron, ion and photon probes.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5140. Introduction to Ceramic Materials**

3(3,0). PR: EGN 3365. Uses, structure, physical and chemical properties, and processing of ceramic materials. Discussions will include recent developments for high technology applications.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5317. Materials Kinetics**

3(3,0). PR: C.I. Mass and thermal transport, phase transformations and Arrhenius rate processes.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5326. Corrosion Science and Engineering**

3(3,0). PR: EGN 3365. Electrochemical principles and applications to detecting and monitoring corrosion processes. Various forms of corrosion, their causes and control. Techniques of corrosion protection.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5415. Electronic Principles of Materials Properties**

3(3,0). PR: EGN 3365 or C.I. This course will cover electron theory and band structure; electrical, optical, magnetic, and thermal properties of metals, semiconductors and insulators, including device examples.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5504. Modern Characterization of Materials**

3(2,2). PR: EMA 5104 or C.I. Techniques and operation of instrumentation (light, scanning, transmission, and auger microscopy) for the characterization of structure, defects, composition, and surfaces.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5505. Scanning Electron Microscopy**

3(2,2). PR: EMA 5104 or C.I. A review of electron optics, beam/specimen interactions, image formation, X-ray analysis, specimen preparation, microelectronic applications and crystallography in the SEM.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5517. Advanced Materials Characterization by Ion Beam Analysis**

3(2,2). PR: EMA 5504 or C.I. Principle of interactions between ion beam and solid materials; sputtering and scattering theories; fundamentals and applications of secondary ion mass and Rutherford Backscattering spectrometric. May be repeated for credit.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5584. Biomaterials**

3(3,0). PR: EGN 3365. Properties of natural biological materials and their relation to microstructure, biocompatibility, specific applications in orthopedic, cardiovascular, visual, neural, and reconstruction implants.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5585. Materials Science of Thin Films**

3(3,0). PR: Graduate standing or C.I. Interaction of thin film processing techniques with the structure and properties of the materials deposited.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5586. Photovoltaic Solar Energy Materials**

3(3,0). PR: EGN 3365. Materials properties basic to photovoltaics, structures, homojunction, heterojunction, and surface barrier solar cells, AMDS-1D modeling of c-Si, GaAs bulk and a-Si:H, CIGS, and CdTe thin film solar cells. May be repeated for credit.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5587C. Characterization and Reliability of PV Cells**

3(2,2). PR: EGN 3365. Photovoltaic characterization of solar cells, dark and light I-V, C-V, and quantum efficiency, physics of failure of microelectronic devices, solder bonds, encapsulation, PV module reliability.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5588. Biocompatibility of Materials**

3(3,0). PR: EGN 3365 or C.I. Biocompatibility and bioactivity; cell-biomaterials interactions; engineering bone and cartilage; soft-tissue replacements; total hip replacements; nanostructured biomaterials, imaging techniques, preservation techniques for biomaterials, MSDS and FDA compatibility data.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5610. Laser Materials Processing**

3(3,0). PR: EGN 3343 or EMA 5106 or C.I. Laser beam optics; laser-material interactions; laser heating, melting, vaporization. Plasma formation; laser surface treatment, welding, machining; laser material synthesis. Thin film deposition, crystal growth.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 5705. High Temperature Materials**

3(3,0). PR: EMA 5104 or CI. Desired material properties for high temperature applications, physical metallurgy of such materials, corrosion, hot corrosion and oxidation properties, aero- and land-based gas turbine requirements.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6126. Physical Metallurgy**

3(3,0). PR: EMA 5104 or EMA 3124. Analytical methods in crystallography, dislocation theory, annealing, solid solutions, phases and phase diagrams, ferrous and non-ferrous alloy systems.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6129. Solidification and Microstructure Evolution**

3(3,0). PR: EML 4142, EMA 5104, or C.I. Cooling process, nucleation, spinodal decomposition, interface instability, cells, dendrites, eutectic and peritectic microstructures, solute segregation, modeling project.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6130. Phase Transformation in Metals and Alloys**

3(3,0). PR: EMA 5104 and EMA 5106 or C.I. Principles of thermodynamics, kinetics, and phase diagrams for the understanding of diffusion and diffusionless phase transformations in ferrous and non-ferrous alloys.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6136. Diffusion in Solids**

3(3,0). PR: EMA 5104 and EML 5060 or C.I. Fundamental equations and mechanisms of diffusion. Diffusion in metallic, ionic, and semiconducting materials with emphasis on measurement techniques.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6149. Imperfections in Crystals**

3(3,0). PR: EMA 5104 or C.I. Describes point, line, and planar defects in crystalline materials. Discusses vacancy formation, dislocation theory, plasticity, grain boundary modeling, and the interaction between defects.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6515. X-ray and Auger Electron Spectroscopic Techniques**

3(3,0). PR: EMA 5108 or EMA 5504. A hands on course on X-ray and auger spectroscopy. Topics will include theory on XPS, AES, instrumentation, vacuum science, data interpretation and analysis charge referencing.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6516. X-ray Diffraction and Crystallography**

3(3,0). PR: EMA 5104 or C.I. Theory and experimental techniques of X-ray diffraction of materials. Topics include the structure of crystalline solids, including lattices, point group and space group theory.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6518. Transmission Electron Microscopy**

3(3,0). PR: EMA 5104 or C.I. An introduction to the theory and operation of a transmission electron microscope. Electron diffraction techniques, contrast from images, analytical microscopy, and specimen preparation.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6605. Materials Processing Techniques**

3(3,0). PR: EMA 5104 or C.I. Phase transformation; grain size; surface, powder, and composite processing; shape forming; polymer processes; liquid and vapor phase synthesis; radiation-induced processes, mathematical analysis, project.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6611C. Optoelectronic Materials Processing**

3(2,2). PR: EMA 5317, Graduate standing or C.I. Techniques for materials preparation, doping, metallization, effect of materials properties on device (e.g., solar cells, lasers and transistors) performances, electronic and optical characterization of device materials.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6626. Mechanical Behavior of Materials**

3(3,0). PR: EMA 5104 or EMA 4223. Fundamentals of the mechanical behavior of materials; advanced treatment of elasticity, plasticity, viscoelasticity, creep, fracture and fatigue in a variety of material classes.

*ECS-Mechanical/Matrls/Aerosp*

**EMA 6628. Materials Failure Analysis**

3(3,0). PR: EMA 5104. Comprehensive overview of the general procedures for failure analysis, failure theories, causes of failure, fractography of different failures, and modern analytical tools.

*ECS-Mechanical/Matrls/Aerosp*

**EME 5050. Fundamentals of Technology for Educators**

3(3,0). PR: Post bac or C.I. Designed to provide participants with an introduction to the field of educational technology content with emphasis on using and integrating technology in K-12 to improve the teaching and learning process.

*ED-Ed Research, Tech & Lead*

**EME 5051. Technologies of Instruction and Information Management**

3(3,0). PR: Acceptance into Ed Media program or C.I. Theories and practices in utilizing instructional media and information technologies. Emphasis on new and emerging technologies and their effects on the school and media program.

*ED-Ed Research, Tech & Lead*

**EME 5053. Electronic Resources for Education**

3(3,0). PR: Graduate standing or C.I. Study and application of electronic resources available for education including techniques for locating, evaluating, and integrating them into the classroom.

*ED-Ed Research, Tech & Lead*

**EME 5057. Communication for Instructional Systems-Application**

3(3,0). Applications of technology, communications theory, platform skills, and instructional design to the effective presentation of training programs and instruction.  
*ED-Ed Research, Tech & Lead*

**EME 5208. Production Techniques for Instructional Settings**

3(3,0). PR: Acceptance into Ed Media Program or C.I. Skills in producing instructional materials. Emphasis on graphic, audio, video, and photographic skills and the application of instructional and communication theories.  
*ED-Ed Research, Tech & Lead*

**EME 5225. Media for Children and Young Adults**

3(3,0). PR: Acceptance into Ed Media Program or C.I. Survey of materials for children's and young adults' informational and recreational needs; analysis, evaluation, and utilization of print and non-print materials.  
*ED-Ed Research, Tech & Lead*

**EME 5810. Teaching and Learning with Technology**

1(1,0). Overview of technologies for teaching and for learning. Practical strategies for using technology in the classroom. May be used in the degree program a maximum of four times.  
*ED-Ed Research, Tech & Lead*

**EME 6053. Current Trends in Instructional Technology**

3(3,0). Survey of current trends and issues of importance to the field of instructional technology.  
*ED-Ed Research, Tech & Lead*

**EME 6058. Current Trends in Educational Media**

3(3,0). PR: C.I. Survey of current trends and issues of importance to the field of educational media.  
*ED-Ed Research, Tech & Lead*

**EME 6062. Research in Instructional Technology**

3(3,0). PR: EDF 6481 and PR or CR: EME 6053 or EME 6613. Critical review and evaluation of landmark research in the areas of educational media, instructional design, and instructional systems.  
*ED-Ed Research, Tech & Lead*

**EME 6105. Collection Development Policies and Procedures**

3(3,0). PR: Acceptance into Ed Media program or C.I. Principles of collection development for the school library media center. Acquisition, weeding, inventory, and maintenance procedures. Emphasis on intellectual freedom and evaluation of the collection.  
*ED-Ed Research, Tech & Lead*

**EME 6207. Multimedia Instructional Systems I**

3(3,0). PR: Basic computer literacy. Creation of interactive web-based multimedia instructional content using graphic, audio, video, and authoring tools. Discussion of copyright, cost, media attributes, and other relevant issues.  
*ED-Ed Research, Tech & Lead*

**EME 6209. Multimedia Instructional Systems II**

3(3,0). PR: EME 6207 or EME 6613, or C.I. Advanced techniques in delivery and management of web-based multimedia instructional content. Integration of media into web-based instruction. Discussion of delivery and management issues.  
*ED-Ed Research, Tech & Lead*

**EME 6405. Application Software for Educational Settings**

3(3,0). PR: EME 5050 or EME 5053 or C.I. Use of software applications in instructional settings by students and teachers. Includes integrated packages (word processing, database, spreadsheet, telecommunications) graphics software, presentation software, and desktop publishing software as they relate to the K-12 curriculum, students, and teacher productivity.  
*ED-Ed Research, Tech & Lead*

**EME 6457. Distance Education: Technology Process Product**

3(3,0). PR: EME 6207 (or equivalent) and EME 6613 or C.I. Instruction and how it is delivered at a distance. Examines technologies, processes, and products of distance education with emphasis on e-learning.  
*ED-Ed Research, Tech & Lead*

**EME 6507. Multimedia in the Classroom**

3(3,0). PR: EME 6405 or C.I. Emphasis on the elements and applications of multimedia programs for use by K-12 students and teachers. Includes authoring, design, delivery systems, hardware, software.  
*ED-Ed Research, Tech & Lead*

**EME 6601. Instructional Simulation Design for Training and Education**

3(3,0). PR: EME 6613. Integration of ISD methods with simulation systems design, including analysis, design, development and formative evaluation of leading-edge training and educational simulation technologies.  
*ED-Ed Research, Tech & Lead*

**EME 6602. Integration of Technology into the Curriculum**

3(3,0). PR: EME 5050, EME 5053, EME 6405, EME 6507 or C.I. Resources, materials, and strategies for systemic achievement of curriculum goals; investigation of innovative and effective technological advances and practices for use in teaching and learning.  
*ED-Ed Research, Tech & Lead*

**EME 6605. Role of the Media Specialist in Curriculum and Instruction**

3(3,0). PR: Acceptance into Ed Media Program or C.I. Development of skills in instruction and instructional design. Emphasis on teaching, consultation, and media skills and curricular involvement of the media specialist.  
*ED-Ed Research, Tech & Lead*

**EME 6607. Planned Change in Instructional Technology**

3(3,0). In-depth study of the processes of planned change and adoption/rejection of innovations in educational settings.  
*ED-Ed Research, Tech & Lead*

**EME 6613. Instructional System Design**

3(3,0). PR: Graduate standing or C.I. Systematic design of instruction including task analysis, learner analysis, needs assessment, content analysis, specification of objectives, media selection, evaluation and revision. Analysis of ID models.

*ED-Ed Research, Tech & Lead*

**EME 6614. Instructional Game Design for Training and Education**

3(3,0). PR: EME 6613. Integration of instructional design and game development processes, analysis of existing instructional games and game engines and the design of an instructional game.

*ED-Ed Research, Tech & Lead*

**EME 6705. Administration of Instructional Systems**

3(3,0). PR: EME 6613. Provides opportunities for students to examine parameters, problems, and areas of importance in the management of instructional systems.

*ED-Ed Research, Tech & Lead*

**EME 6706. Administrative Principles in Media Centers**

3(3,0). PR: Acceptance in Ed Media program or C.I. Principles of planning, evaluating, budgeting, staffing, and marketing the school media program. Development of policies and procedures for the school media center, legislation technology, professionalism.

*ED-Ed Research, Tech & Lead*

**EME 6707. Technology Leadership and Coordination in the Schools**

3(3,0). PR: EME 5050 or EME 5053 or C.I. A graduate course in educational technology designed to provide a context for the role of a school-based professional with skills in educational technology. Includes planning, administration, training, leadership, budgeting, ethics, evaluation, and grant writing.

*ED-Ed Research, Tech & Lead*

**EME 6805. Organization of Media and Information**

3(3,0). PR: Acceptance into Ed Media program or C.I. Methods for organizing print and non-print media, with instruction in cataloging and classification, using standard bibliographic tools and procedures. May be repeated for credit.

*ED-Ed Research, Tech & Lead*

**EME 6807. Information Sources and Services**

3(3,0). PR: Acceptance into Ed Media program or C.I. Development of skills in identifying appropriate information sources for school media centers, providing reference services, and teaching research skills and search strategies.

*ED-Ed Research, Tech & Lead*

**EME 6940. Theory into Practice in Educational Technology**

3(3,0). PR: Completion of all core courses in educational technology. Practicum in facilitating the utilization of instructional media and information technologies.

*ED-Ed Research, Tech & Lead*

**EME 7634. Advanced Instructional Systems Design**

3(3,0). PR: EME 6613. Analysis of fundamental concepts of theoretical and procedural instructional systems design models with an emphasis on their cognitive origins, pedagogical bases, current and future values.

*ED-Ed Research, Tech & Lead*

**EME 7942. Doctoral Internship in Educational Technology**

3(3,0). PR: Completion of PhD core and 75 percent specialization. Higher education teaching assignment as an intern under a senior faculty mentor in Educational Technology or Instructional Systems.

*ED-Ed Research, Tech & Lead*

**EML 5060. Mathematical Methods in Mechanical, Materials and Aerospace Engineering**

3(3,0). PR: MAP 2302. Vector field theory, generalized coordinates, complex variables, contour integration and Laplace and Fourier transforms and inversions, variable coefficient ODEs and solution of PDEs for governing equations of heat transfer, ideal fluid flow, and mechanics.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5066. Computational Methods in Mechanical, Materials and Aerospace Engineering**

3(3,0). PR: EML 3034C. Error Norms, interpolation and extrapolation, quadratures and adaptive quadratures, solutions of linear and nonlinear systems of equations, functional approximation, solution of ODE's and MWR.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5105. Gas Kinetics and Statistical Thermodynamics**

3(3,0). PR: EAS 4134 or EML 4703. Molecular and statistical viewpoint of gases and thermodynamics; Boltzmann collision integral, partition functions, non-equilibrium flows. Applications in thermo-fluid systems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5131. Combustion Phenomena**

3(3,0). PR: EML 4703, EML 3101. Physical and chemical aspects of combustion phenomena. Rate processes, chemical kinetics, structure, propagation and stability of premixed and diffusion flames.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5152. Intermediate Heat Transfer**

3(3,0). PR: EML 4142, EML 5060. An intermediate-level course dealing with heat and mass diffusion, boundary layer problems, and radiation from real bodies. Emphasis on combined modes, numerical methods.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5211. Continuum Mechanics**

3(3,0). PR: EML 3500 or EML 4703 or EAS 4200 or C.I. Introduction to tensors; deformation and strain; stress; balance laws, applications in Newtonian fluid dynamics and isotropic linear elasticity.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5224. Acoustics**

3(3,0). PR: EML 4220. CR: EML 5060. Elements of vibration theory and wave motion; radiation, reflection, absorption, and transmission of acoustic waves; architectural acoustics; control and abatement of environmental noise pollution; transducers.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5228C. Modal Analysis**

3(3,0). PR: EML 3303C, EML 4220, and EML 5060. Theoretical basis. Measurement techniques, excitation, transducers, data acquisition. Detailed data analysis, modal parameter extraction, curve-fitting procedures. Modeling.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5237. Intermediate Mechanics of Materials**

3(3,0). PR: EML 3500, EML 5060. Elements of elasticity. Failure theories. Bending and torsion. Thin plates. Energy principles. Thick-walled cylinders. Applications to design.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5245. Tribology**

3(3,0). PR: EGN 3365, EGN 3331 and EML 3701. Principles of fluid film lubrication (liquid and gas, journal and thrust bearings), contact mechanics (rolling element bearings), design of bearings and load bearing surfaces, friction and wear of materials, tribotesting.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5271. Intermediate Dynamics**

3(3,0). PR: EML 3321. Dynamics of particles, rigid bodies, and distributed mass systems. Hamilton's principle. Lagrange's equations. Numerical methods. Mechanisms.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5290. Introduction to MEMS and Micromachining**

3(3,0). PR: Graduate standing or C.I. Introduction of Micro-Electro-Mechanical-Systems (MEMS) and micromachining (microfabrication) methods. Etching and etching mask. Basics of silicon macromachining processing. Fundamentals of bulk micromachining. Thin film formation and surface micromachining. Microplating and LIGA process. Nonlithographic micromachining process including laser. May be repeated for credit.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5291. MEMS Materials**

3(3,0). PR: EML 5060, EML 5211, or C.I. Introduction of materials that are frequently used for MEMS applications such as silicon, metal, ceramics and polymers. The course will focus on fundamental principles involved in structures and properties of the materials, and their applications in MEMS.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5292. Fundamental Phenomenon and Scaling laws in Miniature Engineering Systems**

3(3,0). PR: EML 5060, EML 5211, or C.I. Introduction to meso-, micro-, and nano-scales, and related terminology, constitutive relationships at these scales and how these relationships affect the behavior and performance of systems. Effect of miniaturization on a few common engineering systems.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5311. System Control**

3(3,0). PR: EML 4312C; CR: EML 5060. Modern control theory for linear and non-linear systems; controllability and observability. Linear state feedback and state estimators, compensator design.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5402. Turbomachinery**

3(3,0). PR: EML 3101, EML 4703 or EAS 4134. Application

of the principles of fluid mechanics, thermodynamics, and aerodynamics to the design and analysis of steam and gas turbines, compressors, and pumps.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5532C. Computer-Aided Design for Manufacture**

3(2,3). PR: EGN 4535C. Builds on introductory material covered in EML 4535C. Topics include computer modeling for the synthesis, simulation, design and manufacture of mechanical, thermal, and aerospace systems.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5546. Engineering Design with Composite Materials**

3(3,0). PR: EML 5237. Mechanics of structural components of composite materials under static, thermal, vibratory loads. Instability. Lamina and laminate theory, energy methods, failure theories, and structural joining methods.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5572. Probabilistic Methods in Mechanical Design**

3(3,0). PR: EML 3500, STA 3032. Uncertainty modeling in design. Use of probabilistic mathematics to assess strength, stiffness, toughness, and stability. Applications.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5587C. Mechanics of Biostructures I**

3(2,3). PR: Graduate standing or C.I. Part I of a two semester course. Mechanical analysis of hard (bone) and soft (organs, connective tissues, etc.) biostructures and the analysis includes preparation and experimental testing for constitutive equations for predictive modeling.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5588C. Mechanics of Biostructures II**

3(2,3). PR: EML 5587C. Part II of a two semester course. Mechanical analysis of hard (bone) and soft (organs, connective tissues, etc) biostructures and the analysis includes preparation and experimental testing for constitutive equations for predictive modeling.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5605. Applied HVAC Engineering**

3(3,0). PR: EML 4600. Applications of HVAC systems design with the objective of optimizing energy efficiency, humidity control, ventilation and indoor air quality. May be repeated for credit.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5606. HVAC Systems Engineering**

3(3,0). PR: EML 3101, EML 4142, EML 3034C. Heating, ventilation, air conditions and refrigeration principles, system design and analysis. May be repeated for credit.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5713. Intermediate Fluid Mechanics**

3(3,0). PR: EML 4703. CR: EML 5060. Fluid kinematics; conservation equations; Navier-Stokes equations; boundary layer flow, inviscid flow, circulation and vorticity; low Reynolds number flow; turbulence.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 5760. Biofluid Mechanics**

3(3,0). PR: MAP 2302, EML 3701, EML 4703. Analysis of biomedical and bioengineering systems using principles of transport phenomena. Governing equations of fluid flow, circulatory systems blood flow, macro and microcirculation, and blood rheology.

*ECS-Mechanical/Matrls/Aerosp*

**EML 5936. Mechanical, Materials, and Aerospace Engineering Graduate Seminar**

1(1,0). MMAE graduate student seminar. Graded S/U.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6062. Boundary Element Methods in Engineering**

3(3,0). PR: EML 5237 or EML 5713 or C.I. Integral (numerical) solution of potential, Poisson and diffusion equations; applications to heat transfer and fluid flow; complex variable boundary element methods.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6067. Finite Elements in Mechanical, Materials, and Aerospace Engineering I**

3(3,0). PR: EML 5237 or EML 5713. Finite element analysis of thermomechanical response of aerospace and mechanical components and structures. Plates and shells. Vibrations. Composite materials. Minimum weight design. CAD interface. Introduction to codes.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6068. Finite Elements in Mechanical, Materials, and Aerospace Engineering II**

3(3,0). PR: EML 6067 or C.I. Advanced finite element applications to aerospace and mechanical components and structures. Rotating systems. Fracture mechanics. Aeroelasticity. Buckling. Impact. Use of codes.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6085. Research Methods in MMAE**

3(3,0). PR: EML 5060 and EML 5211. Research project is a MMAE option under supervision of an adviser. A project report is due at the end of the semester. May be repeated for credit.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6104. Classical Thermodynamics**

3(3,0). PR: EML 3101 or C.I. A general postulative approach to classical macroscopic thermodynamics featuring states as fundamental constructs. Conditions of equilibrium, stability criteria, thermodynamic potentials. Maxwell relations and phase transitions.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6124. Two-Phase Flow**

3(3,0). PR: EML 5152. Introduction to two-phase flow and boiling heat transfer. General transport equations and models for analyzing two-phase systems. Emphasis placed on liquid-vapor systems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6144. Boiling and Condensation Heat Transfer**

3(3,0). PR: EML 4142 or C.I. Phase changes heat transfer including boiling and condensation. Phenomenological treatment of pool boiling, two-phase flow, and convective boiling. Filmwise and dropwise condensation. Applications.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6154. Conduction Heat Transfer**

3(3,0). PR: EML 5152 or C.I. Classical and numerical techniques applied to the solution of steady and transient conduction problems. Applications to the design of thermal systems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6155. Convection Heat Transfer**

3(3,0). PR: EML 5152, EML 5713, or C.I. Convection heat, mass and momentum transfer in laminar and turbulent flows. Applications to the design of thermal systems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6157. Radiation Heat Transfer**

3(3,0). PR: EML 5152 or C.I. Radiation properties of surfaces and analysis of radiative heat transfer between black, gray, non-gray and non-diffuse surfaces. Multimode problems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6158. Gaseous Radiation Heat Transfer**

3(3,0). PR: EML 6157. Development of Radiative Transfer Equation, radiative properties of gases, and solutions to gaseous radiation problems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6223. Advanced Vibrational Systems**

3(3,0). PR: EML 4220, EML 5271 or C.I. Discrete and distributed parameter systems. Introduction to nonlinear and random vibrations. Concepts of modern dynamic analysis.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6226. Analytical Dynamics**

3(3,0). PR: EML 5271. Kane method for kinematics and dynamics of particle and rigid bodies is developed and contrasted with Newton and Lagrange methods. Multibody dynamics.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6227. Nonlinear Vibration**

3(3,0). PR: EML 5060 and EML 5271. Robust, reliable algorithms for simulation of nonlinear phenomena; phase planes; limit cycles; stability; period-multiplying bifurcations; strange attractors; Poincare maps; Floquet theory; Lyapunov exponents; applications to mechanical and aerospace systems.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6233. Fundamentals of Fatigue Analysis**

3(3,0). PR: EML 5211 or C.I. A review of classical and modern methods of fatigue life prediction and the physical process therein. Primary emphasis relates to metallic materials.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6238. Plates and Shells**

3(3,0). PR: EGM 3601, EML 5211, EML 5060. This course introduces the reduction of 3D elasticity to an equivalent 2D counterpart; basic assumptions; field equations of the theory of plates and shells; linear and nonlinear theories; buckling and vibrations; refined plate and shell theories.

*ECS-Mechanical/Matrls/Aerosp*

**EML 6295. Sensors and Actuators for Micro Mechanical Systems**

3(3,0). PR: EML 5060, EML 5211, or C.I. Introduction of smart materials and functional structures used for sensors and actuators in micromechanical systems. Classification of sensors and actuators. Physics of sensing and actuation. Evaluation of sensors and actuators. Philosophy of selection of sensors and actuators for specific engineering requirements. Introduction of development of sensors and actuators in micromechanical systems.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6296. MEMS Mechanism and Design**

3(3,0). PR: EML 3500, EGM 3601, EML 4142. Miniature Electro Mechanical Systems (MEMS) working mechanisms (mechanical, thermal, electric, piezoelectric, magnetic, etc.). Design rules. May be repeated for credit.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6297. MEMS Characterization**

3(3,0). PR: EML 5060, EML 5211, or C.I. Introduction of methods, techniques and philosophies being used to characterize MEMS for engineering applications. Materials characterization, systems characterization (mechanical, electrical, optical, etc). Test methods and sample preparation. Test results analysis.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6299. Advanced Topics on Miniaturization**

3(3,0). PR: EML 5060, EML 5211, or C.I. Advanced sensor and actuator devices, advanced micro-thermal systems, advanced topics on materials for MEMS, advanced topics on tribology for MEMS/NEMS, advanced topics on miniature power generation systems.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6305C. Experimental Mechanics**

3(2,2). PR: EML 4304C, EML 5237. Selected topics in strain measurements, photoelasticity, holographic interferometry; laser speckle measurement; acoustic emission, measurement of correlation and coherence functions.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6547. Engineering Fracture Mechanics in Design**

3(3,0). PR: EML 5237 or C.I. General understanding of elementary concepts. Practical application enabling useful prediction of fracture safety and characteristics. Some general knowledge of fracture mechanisms and fracture criteria.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6712. Mechanics of Viscous Flow**

3(3,0). PR: EML 5060, EML 5713. Principal concepts and methods for viscous fluid motion. Incompressible and compressible boundary layer analysis for laminar and turbulent flows.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6725. Computational Fluid Dynamics and Heat Transfer I**

3(3,0). PR: EML 5152 or C.I. Finite Difference methods; error and stability analysis; applications to model equations and further developments; matrix methods.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6726. Computational Fluid Dynamics and Heat Transfer II**

3(3,0). PR: EML 6725. Development of governing equations; turbulence modeling; numerical solution of Euler and potential equations, Navier-Stokes equations, and boundary layer equations; grid generation.  
*ECS-Mechanical/Matrls/Aerosp*

**EML 6808. Analysis and Control of Robot Manipulators**

3(3,0). PR: EML 4312C, EML 5271, or C.I. Kinematics and dynamics of multibody systems, especially robot manipulators. Design and control of robot manipulators.  
*ECS-Mechanical/Matrls/Aerosp*

**EMR 6235. Nature of Severe and Profound Disabilities: Theory and Educational Practice**

3(3,0). PR: Graduate standing. Overview of theory and teaching applications for students with severe and profound disabilities including major theories and trends, appropriate learning goals, teaching approaches, and environmental arrangements.  
*ED-Child, Family & Comm Sci*

**EMR 6365. Teaching Students with Mental Disabilities**

3(3,0). Strategies for teaching students with mental disabilities: development, implementation, and evaluation of individualized plans; special approaches to teaching functional skills; developmental programming; data-based management.  
*ED-Child, Family & Comm Sci*

**ENC 5216. Editing Professional Writing**

3(3,0). PR: Graduate status or senior standing or C.I. The study of major issues in editing, including levels of edit, grammar and mechanics, visuals, style, and the impact of technology.  
*CAH-English*

**ENC 5225. Theory and Practice of Document Usability**

3(3,0). PR: Graduate status or senior standing or C.I. Presents theory and practice of how document usability is assessed and improved.  
*CAH-English*

**ENC 5237. Writing for the Business Professional**

3(3,0). PR: Graduate status or senior standing or C.I. A study of the major document designs for professionals in business, focusing on audience, purpose, style, arrangements, and content.  
*CAH-English*

**ENC 5245. Teaching Professional Writing**

3(3,0). PR: Graduate status or senior standing or C.I. Prepares students to determine writing needs of professional discourse communities, analyze those needs, and design in-house or freelance writing programs to address those needs.  
*CAH-English*

**ENC 5276. Writing/Consulting: Theory and Practice**

3(3,0). PR: Graduate status or senior standing or C.I. The theory and practice of assessing and responding to writing as a collaborator (as opposed to evaluator).  
*CAH-English*

**ENC 5291. Developing Professional Writing Projects**  
3(3,0). PR: Graduate status or C.I. Developing Professional Writing is a course in which students learn the basics of planning writing projects, including scheduling, budgeting, collaborative writing, production, and problem solving  
*CAH-English*

**ENC 5337. Modern Rhetorical Theory**  
3(3,0). PR: Graduate status or senior standing or C.I. With special attention to the rhetor-audience relationship, the course studies history and practice of modern rhetorical theory.  
*CAH-English*

**ENC 5705. Theory and Practice in Composition**  
3(2,1). PR: Graduate status or senior standing or C.I. Intensive study of theories of composition, with practical experience in the writing laboratory and in composition classes.  
*CAH-English*

**ENC 5745. Teaching Practicum**  
3(3,0). PR: ENC 5705, graduate status or senior standing, or C.I. To supplement and deepen theoretical and practical experiences during their first teaching semester, GTA's will participate in staff development and individual conferences with their mentors.  
*CAH-English*

**ENC 5930. Current Topics in Professional Writing**  
3(3,0). PR: Graduate status or C.I. Students will learn how to produce texts for specialized fields of discourse, including the medical and legal profession, as well as for general publication.  
*CAH-English*

**ENC 6217. Technical Editing**  
3(3,0). PR: Graduate standing in English, or C.I. A study of the strategies for editing the prose, design, and illustrations of print and online technical documents.  
*CAH-English*

**ENC 6244. Teaching Technical Writing**  
3(3,0). The techniques and theories of teaching technical writing.  
*CAH-English*

**ENC 6247. Proposal Writing**  
3(3,0). PR: Graduate standing in English or C.I. Theory and practice of writing proposals.  
*CAH-English*

**ENC 6257. Graphics in Technical Writing**  
3(3,0). PR: Graduate standing in English or C.I. Creation and editing of graphics in technical documents.  
*CAH-English*

**ENC 6261. Technical Writing, Theory and Practice**  
3(3,0). A study of major trends in technical communication theory and the practices this theory generates.  
*CAH-English*

**ENC 6292. Project Management for Technical Writers.**  
3(3,0). Managing a writing project from inception to production; planning, budgeting, personnel, writing, and editing.  
*CAH-English*

**ENC 6296. Computer Documentation**  
3(3,0). The theory and practice of producing software documentation from planning through production.  
*CAH-English*

**ENC 6297. Production and Publication Methods**  
3(3,0). PR: Graduate standing in English or C.I. Production of technical documents including typography, visual rhetoric, layout and design, and planning and managing documentation projects.  
*CAH-English*

**ENC 6306. Persuasive Writing**  
3(3,0). PR: Graduate standing in English or C.I. Theory and practice of writing persuasively.  
*CAH-English*

**ENC 6332. Gendered Rhetoric**  
3(3,0). PR: Graduate standing in English or C.I. Questions women's and men's linguistic choices, the influence of medium and discipline of discourse, and consequences of status, power, and oppression.  
*CAH-English*

**ENC 6333. Contemporary Rhetoric and Composition Theory**  
3(3,0). PR: Graduate standing or C.I. Instruction on politics of basic writing programs, rhetoric, ideology and cultural production, poststructuralism and rhetoric or feminist pedagogies. May be repeated for credit.  
*CAH-English*

**ENC 6335. Rhetorical Traditions**  
3(3,0). PR: Graduate standing in English or C.I. Philosophy and techniques of classical rhetoricians such as Isocrates, Aristotle, and Cicero with special attention to their application to contemporary rhetorical situations.  
*CAH-English*

**ENC 6338. The Rhetorics of Public Debate**  
3(3,0). PR: Graduate standing in English or C.I. How rhetorical theories further community goals, including activist, political, legislative, and other significant public debates.  
*CAH-English*

**ENC 6339. Rhetorical Movements**  
3(3,0). PR: Graduate standing or C.I. To study the principal rhetorical theories of the classical period and rhetoric of the eighteenth and nineteenth centuries. May be repeated for credit.  
*CAH-English*

**ENC 6425. Hypertext Theory and Design**  
3(3,0). PR: Graduate standing in English or C.I. Theoretical and practical study of the uses and premises of hypertext.  
*CAH-English*



**ENC 6426. Visual Texts and Technology**

3(3,0). PR: Graduate Standing. Studies visual dimensions of the texts of digital discourse.

*CAH-English*

**ENC 6428. Rhetoric of Digital Literacy**

3(3,0). PR: Graduate Standing or C.I. Graduate Standing or permission. Studies Rhetorical dimensions of digital discourse.

*CAH-English*

**ENC 6429. Teaching Writing With Computers**

3(3,0). PR: Graduate standing in English or C.I. Immersion in the theories and practices of writing in electronic spaces including current discourse conventions from speech and print media.

*CAH-English*

**ENC 6702. Issues in Writing Assessment**

3(3,0). PR: Graduate standing or C.I. To gain experience with the theory and practice of writing assessment, is more than testing; it involves a wide range of issues in rhetoric and composition.

*CAH-English*

**ENC 6945. Community Literacy Practicum**

3(3,0). PR: Graduate standing in English or C.I. Designed to deepen theoretical understanding of literacy through participation in a community literacy project.

*CAH-English*

**ENC 6X712. Studies in Literacy and Writing**

3(3,0). PR: Graduate standing in English or C.I. Theories of cultural and critical literacy, definitions of literacy, and current political issues in literacy studies.

*CAH-English*

**ENG 5009. Methods of Bibliography and Research**

3(3,0). PR: Graduate status or senior standing or C.I. Bibliographical, library and systematic approaches to research at the graduate level in language and literature.

*CAH-English*

**ENG 5018. Literary Criticism**

3(3,0). PR: Graduate status or senior standing or C.I. Historical survey of major critics from classical antiquity to the modern era.

*CAH-English*

**ENG 6800. Introduction to Texts and Technology**

3(3,0). PR: Graduate standing or C.I. Basic concepts of graduate study in Texts and Technology.

*CAH-English*

**ENG 6801. Texts and Technology in History**

3(3,0). PR: Acceptance into the Texts and Technology program, graduate standing, or C.I. Explores the history of relations between the Texts and Technology. We examine how various technologies have influenced the nature of texts they produce.

*CAH-English*

**ENG 6806. Digital Editing and Databases**

3(3,0). PR: Enrollment in Texts and Technology PhD program or Digital Media master's program. Applied aspects of textual reproduction and editing, including scanning (OCR) and XML coding, as such processes relate to database content and use.

*CAH-English*

**ENG 6810. Theories of Texts and Technology**

3(3,0). PR: Acceptance into the Texts and Technology program, graduate standing, or C.I. Introduces general theoretical concepts as a basis for the advanced study of Texts and Technology.

*CAH-English*

**ENG 6811. Cultural Contexts in Texts and Technology**

3(3,0). PR: Graduate standing or C.I. Selected cultural contexts in which texts and technologies converge and where reciprocal mediation, definition, or transformation occurs. May be used in the degree program a maximum of 2 times.

*CAH-English*

**ENG 6812. Research Methods for Texts and Technology**

3(3,0). PR: Acceptance into the Texts and Technologies program, graduate standing, or C.I. Prepares students to design, conduct, and critique empirical research in textual technologies, broadly conceived.

*CAH-English*

**ENG 6813. Teaching Online in Texts and Technology**

3(3,0). PR: Graduate standing. Theory and practice for designing electronic courses and curricula in texts and technology, strategies, theories, and best practices.

*CAH-English*

**ENG 6814. Gender in Texts and Technology**

3(3,0). PR: Graduate standing. Relationships among text, science, technology and gender.

*CAH-English*

**ENG 6939. Topics in Text and Technology**

3(3,0). PR: Graduate standing or C.I. Experimental methods of writing and research, possibly including photography, cinema, Internet, and other transformations of narrative form. May be used in the degree program a maximum of three times.

*CAH-English*

**ENG 6947. Internship in Texts and Technology**

3(3,0). PR: Admission to Texts and Technology PhD program. Internship in opportunity to integrate practical experience with theory and content from Texts and Technology program. Graded S/U.

*CAH-English*

**ENG 6948. Teaching Practicum in Texts and Technology**

3(3,0). PR: Admission to Texts and Technology PhD program. Provides instructor and peer support for first teaching of an online course. Online courses include Web-based, Media-enhanced, Web-enhanced, and computer lab-based courses. Graded S/U.

*CAH-English*

**ENL 5006. British Literature: Medieval to Modern**  
3(3,0). PR: Graduate status or senior standing or C.I. Survey of British Literature from beginnings to present, with instruction in the fundamentals of prose, poetry, and drama. Emphasis on Literature's social and historical contexts.  
*CAH-English*

**ENL 5237. Eighteenth Century Studies**  
3(3,0). PR: Graduate status or senior standing or C.I. Reading, analysis, and discussion of literature in English:1660-1880.  
*CAH-English*

**ENL 5250. The Victorian Age: Poetry**  
3(3,0). PR: Graduate status or senior standing or C.I. Poets of the Victorian period, including Tennyson, the Brownings, Arnold, Hopkins, Hardy, the Rossettis, Emily Bronte, and others.  
*CAH-English*

**ENL 5256. Victorian Literature**  
3(3,0). PR: Graduate status or senior standing or C.I. A study of the major prose works and selected poetry of British Victorian writers.  
*CAH-English*

**ENL 5335. Studies in Shakespeare**  
3(3,0). PR: Graduate status or senior standing or C.I. A selection of representative plays, with emphasis on Shakespeare's development as an artist: aesthetics of dramatic literature.  
*CAH-English*

**ENL 5347. The Age of Milton**  
3(3,0). PR: Graduate status or senior standing or C.I. Emphasis on the non-dramatic works of John Milton. Selections from the non-dramatic works of other 17th-century figures.  
*CAH-English*

**ENL 6217. Gender and the Medieval Text**  
3(3,0). PR: Graduate status or C.I. Introduction to Medieval studies and gender studies together. Readings in middle and modern English  
*CAH-English*

**ENV 5071. Environmental Analysis of Transportation Systems**  
3(3,0). PR: CWR 3201; ENV 3001. Prediction and abatement of pollution from transportation sources. Analysis techniques and environment laws.  
*ECS-Civil & Environmental*

**ENV 5116C. Air Pollution Monitoring**  
3(2,3). PR: C.I. Air Pollution sampling techniques, equipment, and monitor siting. Emphasis on theory and direct applications in air pollution monitoring.  
*ECS-Civil & Environmental*

**ENV 5334. Characterization of Hazardous Waste Sites**  
3(3,0). PR: CWR 4101C and ENV 4341 or C.I. Practical and comprehensive methods of hazardous waste site characterization to determine site properties, contamination type, magnitude and risk, and remedial actions.  
*ECS-Civil & Environmental*

**ENV 5335. Hazardous Waste Management**  
3(3,0). PR: ENV 3001 or C.I. Engineering planning and analysis associated with the handling, storage, treatment, transportation, and disposal of hazardous wastes.  
*ECS-Civil & Environmental*

**ENV 5356. Solid Waste Management**  
3(3,0). PR: ENV 3001. Engineering design, planning, and analysis problems associated with storage, collection, processing, and disposal of solid wastes.  
*ECS-Civil & Environmental*

**ENV 5410. Drinking Water Treatment**  
3(3,0). PR: ENV 4561. Drinking water treatment using existing and newly developed processes. Fe, Mn, As, NO<sub>3</sub>, DBP<sub>3</sub>, SOCs and other contaminants using oxidation, membranes, ion exchange, precipitation, sorption, and other processes.  
*ECS-Civil & Environmental*

**ENV 5505. Sludge Management Operations in Environmental Engineering**  
3(3,0). PR: ENV 4561. Theory and design of sludge management operations and processes in environmental engineering, including stabilization dewatering and ultimate disposal.  
*ECS-Civil & Environmental*

**ENV 5517. Engineering Chemical and Biological Processes**  
3(3,0). CR: ENV 4561(or equivalent) or C.I. Coverage of equilibrium/aquatic chemistry, softening and coagulation, and disinfection of water. Microbiology and biochemistry as applied to activated sludge system design.  
*ECS-Civil & Environmental*

**ENV 5636. Environmental and Water Resources Systems Analysis**  
3(3,0). PR: ENV 3001 or C.I. Discussion of environmental and water resources systems with the emphasis on cost-effectiveness, pollution prevention, and sustainability to aid in environmental engineering decision-making.  
*ECS-Civil & Environmental*

**ENV 6015. Physical/Chemical Treatment Systems in Environmental Engineering**  
3(3,0). PR: ENV 4561 and EES 4202C or C.I. Theory and design of physical and chemical operations and processes in environmental engineering using latest technologies.  
*ECS-Civil & Environmental*

**ENV 6016. Biological Treatment Systems in Environmental Engineering**  
3(3,0). PR: EES 4111C and ENV 4561 or C.I. Theory and design of biological operations and processes in environmental engineering using the latest technologies.  
*ECS-Civil & Environmental*

**ENV 6046. Membrane Mass Transfer**  
3(3,0). PR: ENV 6015 or C.I. Introduction to modeling of mass transfer in membrane systems; membrane morphology, mathematical development of mass transfer coefficients; fouling mechanisms, system modeling, and applications.  
*ECS-Civil & Environmental*

**ENV 6055. Fate and Transport of Subsurface Contaminants**

3(3,0). PR: EES 4111C, EES 4202C, CWR 5125. Principal concepts and modeling of the physical, chemical, and biological transport and transformation processes for subsurface contaminants.

*ECS-Civil & Environmental*

**ENV 6058. Particle Processes in Aquatic Systems**

3(3,0). PR: EES 4202C or equivalent. Concepts of colloidal and interfacial processes in aquatic systems with their applications to environmental engineering.

*ECS-Civil & Environmental*

**ENV 6106. Theory and Practice of Atmospheric Dispersion Modeling**

3(3,0). PR: C.I. Atmospheric composition and dynamics. Engineering methods of mathematical modeling, both for point source and mobile source. Current computer models will be used.

*ECS-Civil & Environmental*

**ENV 6126. Design of Air Pollution Controls**

3(3,0). Current methods for engineering design and performance analysis of air pollution control equipment to include scrubbers, baghouses, electrostatic precipitators, VOC incinerators, others.

*ECS-Civil & Environmental*

**ENV 6336. Site Remediation and Hazardous Waste Treatment**

3(3,0). PR: EES 4111C, EES 4202C, and ENV 4561 or C.I. Biological and physical/chemical remediation technologies, including theory and application, for groundwater and hazardous wastes.

*ECS-Civil & Environmental*

**ENV 6347. Hazardous Waste Incineration**

3(3,0). Theory and applications of design and operations of hazardous waste incinerators. Includes detailed consideration of air pollution control equipment

*ECS-Civil & Environmental*

**ENV 6504L. Unit Operation and Processes Laboratory**

3(1,6). PR: ENV 6015 or equivalent. Bench and small pilot plant experimentation with sedimentation, coagulation, sorption gas-stripping, oxidation ion-exchange, etc. in water, waste-water industrial waste, or hazardous waste treatment.

*ECS-Civil & Environmental*

**ENV 6515L. Biological Unit Operations and Processes Laboratory**

3(1,6). PR: ENV 6016. Unit operations laboratory for biological processes in wastewater treatment, drinking water and remediation including obtaining biokinetic parameters in treatability studies biostability.

*ECS-Civil & Environmental*

**ENV 6519. Aquatic Chemical Processes**

3(3,0). PR: EES 4202C and EES 4111C or C.I. The applicability of water chemistry and physical chemistry on natural waters and waste-water with emphasis on environmental engineering problems.

*ECS-Civil & Environmental*

**ENV 6558. Industrial Waste Treatment**

3(3,0). PR: ENV 4561. Theories, methods, unit operations of management, reduction, treatment, disposal of industrial wastes.

*ECS-Civil & Environmental*

**ENV 6616. Receiving Water Impacts**

3(3,0). PR: EES 4202C and EES 4111C or C.I. Study of fate and transport of pollutant loadings into receiving waters, based on physical, chemical, and biological interactions in natural systems.

*ECS-Civil & Environmental*

**ENV 5006C. Entomology**

4(2,6). PR: BSC 2010C and BSC 2011C and graduate standing or C.I. Morphology, physiology, ontogeny, behavior, ecology and population biology of insects.

*COS-Biology*

**EPH 5395. Physical and Sociological Implications of Handicapping Conditions**

3(3,0). Overview of physical and sociological factors which may contribute to delayed learning or physical impairments in the exceptional populations. Physical interventions and first-aid practices are examined.

*ED-Child, Family & Comm Sci*

**ESE 5214. Secondary School Curriculum Improvement I**

3(3,0). PR: Regular Certificate or C.I. Secondary School self studies for curriculum projects, accreditation reports, or staff development.

*ED-Teaching & Learning Princ*

**ESE 6217. Curriculum Design**

3(3,0). PR: Basic Teacher Certificate or C.I. Goal analysis, task analysis, needs assessment, and writing performance objectives for developing courses of study.

*ED-Educational Studies*

**ESE 6416. Curriculum Evaluation**

3(3,0). PR: ESE 6217 or an equivalent curriculum course.

*ED-Educational Studies*

**ESI 5219. Engineering Statistics**

3(3,0). PR: C.I. Discrete and continuous probability distributions, hypothesis testing, regression, nonparametric stats and ANOVA.

*ECS-Industrial & Management*

**ESI 5227. Total Quality Improvement**

3(3,0). PR: STA 3032 or equivalent. Quality improvement (QI) tools and techniques, advanced QI techniques, quality improvement systems, total quality management concepts and implementation, planning and management tools, and case studies.

*ECS-Industrial & Management*

**ESI 5236. Reliability Engineering**

3(3,0). PR: ESI 4234 or equivalent, or C.I. Reliability theory and modeling approaches. Topics include: failure data analysis, maintainability, reliability standards (DOD), software reliability, reliability in design, and electronic systems reliability.

*ECS-Industrial & Management*

**ESI 5306. Operations Research**

3(3,0). PR: STA 3032. Methods of operations research, including formulation for models and derivation of solutions; linear programming, network models queueing theory, simulation, and nonlinear optimization techniques.  
*ECS-Industrial & Management*

**ESI 5359. Risk Assessment and Management**

3(3,0). PR: ESI 5219 or STA 3032. Problems and complexities involved in risk assessment and management. Selected methodologies are illustrated through realistic applications in engineering and the sciences.  
*ECS-Industrial & Management*

**ESI 5419C. Engineering Applications of Linear and Nonlinear Optimization**

3(2,2). PR: ESI 4312 or ESI 5306. Course covers linear and nonlinear optimization applications in production planning, staffing, engineering design, distribution networks, and other engineering areas. Focuses on practicing or analysis.  
*ECS-Industrial & Management*

**ESI 5531. Discrete Systems Simulation**

3(3,0). PR: STA 3032. Methods for performing discrete systems simulation, including network modeling, will be treated.  
*ECS-Industrial & Management*

**ESI 6217. Statistical Aspects of Digital Simulation**

3(3,0). PR: ESI 5219 or C.I. Statistical issues in digital simulation including input data analysis, pseudorandom number generation, experimental design, and simulation output analysis.  
*ECS-Industrial & Management*

**ESI 6224. Quality Management**

3(3,0). PR: STA 3032 or equivalent or C.I. Philosophy and concepts of quality management, organization for quality, quality cost, quality audits and corrective actions, tools and techniques for improvement.  
*ECS-Industrial & Management*

**ESI 6225. Quality Design and Control**

3(3,0). PR: STA 3032 or equivalent. Concepts and methods for quality design and control, including statistical process control (SPC), control charts, process capability, product and process design and improvement, Taguchi methods, case studies. May be repeated for credit.  
*ECS-Industrial & Management*

**ESI 6247. Experimental Design and Taguchi Methods**

3(3,0). PR: STA 3032 or ESI 4234. Introduction to Taguchi Concepts and Methodologies, use of design of experiments for quality design and improvement.  
*ECS-Industrial & Management*

**ESI 6336. Queueing Systems**

3(3,0). PR: ESI 5219. Analysis of queueing systems and waiting line problems using analytical and Monte Carlo methods. Laboratory assignments.  
*ECS-Industrial & Management*

**ESI 6358. Decision Analysis**

3(3,0). PR: ESI 4312 or ESI 5306. Classical Bayesian analysis; utility and its measurement; multiattribute utility methods; influence diagrams; Analytic Hierarchy Process; behavioral aspects; simulation.  
*ECS-Industrial & Management*

**ESI 6418. Linear Programming and Extensions**

3(3,0). PR: ESI 4312 or ESI 5306. Simplex and Revised Simplex Method; interior-point methods; duality; large-scale optimization; decomposition algorithms; upper bounds; linearization; parametric LP; goal programming.  
*ECS-Industrial & Management*

**ESI 6437. Nonlinear Mathematical Programming and Dynamic Programming**

3(3,0). PR: ESI 4312 or ESI 5306. Optimal conditions and algorithms for unconstrained and constrained nonlinear problems. Introduction to dynamic programming approach to multistage problems.  
*ECS-Industrial & Management*

**ESI 6448. Network Analysis and Integer Programming**

3(3,0). PR: ESI 6418. Modeling and solution methods for problems that can be formulated in terms of flow in networks and for discrete optimization problems.  
*ECS-Industrial & Management*

**ESI 6529. Advanced Systems Simulation**

3(3,0). PR: ESI 5531. Combined networks discrete and continuous simulation, applications, statistical analysis and comparison of simulation languages.  
*ECS-Industrial & Management*

**ESI 6532. Object-Oriented Simulation**

3(2,2). Object-oriented modeling and development techniques for building large process-based discrete event simulation models. Concurrency in discrete event simulation. Object-oriented simulation environment.  
*ECS-Industrial & Management*

**ESI 6551C. Systems Engineering**

3(2,2). PR: ESI 4312 or ESI 5306. Integration and application of systems science, operations research, systems methodologies, and systems management for the design, production, and maintenance of efficient, reliable systems.  
*ECS-Industrial & Management*

**ESI 6891. IEMS Research Methods**

3(3,0). PR: ESI 5219. Assist students in producing publishable research and to introduce new tools which may be needed for collection and analysis of research data.  
*ECS-Industrial & Management*

**ESI 6921. Seminar in Advanced Operations Research**

3(3,0). PR: ESI 6418 or C.I. Topical seminar. Potential topic areas include tabu search, genetic algorithms, simulated annealing, neural networks. Analytic Hierarchy Process, and methods for large-scale optimization.  
*ECS-Industrial & Management*

**ESI 6941. Operations Research Practicum**

6(2,10). PR: C.I. Involves full-time participation and experience in an organization conducting operations research analyses.  
*ECS-Industrial & Management*

**ETG 5918. Applied Research Methods**

3(3,0). PR: Graduate standing or C.I. Broad overview of applied research methods from the literature review process to the investigation, modeling, experimental design, analysis of results, and technical reports.  
*ECS-Engineering Technology*

**ETG 6933. Advanced Topics in Technology**

3(3,0). PR: Graduate standing. An in-depth study of feasibility, capabilities, impact, and acceptance of various technologies. Research paper required.  
*ECS-Engineering Technology*

**ETI 6134. Technology and Analysis for Enterprises**

3(3,0). PR: STA 2023 or STA 3032 or equivalent. Provides a set of sequential activities that must be implemented to achieve enterprise quality. Also provides tools to identify gaps in their current quality plan.  
*ECS-Engineering Technology*

**ETI 6443. Technology for Project Management**

3(3,0). PR: CET 3010, ENC 3241, ETI 4448 or equivalent courses. This course offers a global perspective on how IT is transforming businesses. It provides information on how organizations operate and compete in the digital economy.  
*ECS-Engineering Technology*

**EUH 5247. Colloquium in Europe from 1919-1939**

3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in European history between 1919 and 1939.  
*CAH-History*

**EUH 5285. Colloquium in Europe Since World War II**

3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in European history since WW II.  
*CAH-History*

**EUH 5371. Colloquium in Spanish History**

3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in Spanish history.  
*CAH-History*

**EUH 5415. Rome and Early Christianity**

3(3,0). PR: Graduate standing or C.I. Current trends in historical literature in christianity from its development as a distinct religion to its relations with and eventual "triumph" within the Roman Empire.  
*CAH-History*

**EUH 5546. Colloquium: British History**

3(3,0). PR: Graduate status or senior standing or C.I. Selected topics in British history. There is no standard syllabus because content is different with each offering. May be repeated for credit only when course content is different.  
*CAH-History*

**EUH 5579. Colloquium in Soviet Russia**

3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics in Russian history, 1911-present.  
*CAH-History*

**EUH 5595. Colloquium in Czarist Russia**

3(3,0). PR: Graduate status or senior standing or C.I. Selected topics on the literature of Russia under the Czars prior to 1917.  
*CAH-History*

**EUH 5608. Colloquium European Intellectual History**

3(3,0). PR: Graduate status or senior standing or C.I. Reading and class discussion of the literature on selected topics of European intellectual history.  
*CAH-History*

**EUH 6939. Seminar in European History**

3(3,0). Research seminar on selected topics in European history. May be repeated for credit only when course content is different.  
*CAH-History*

**EVR 5930. Seminar in Conservation Issues**

1(1,0). PR: Graduate status or senior standing or C.I. Contemporary topics stressing a broad base of conservation issues will be the focus of this seminar series. May be repeated for credit only when course content is different.  
*COS-Biology*

**EVT 5260. Cooperative Programs in Vocational Education**

2-4(2-4,0). PR: Regular Certificate or C.I. Study of cooperative vocational programs and achievement of competencies needed to establish, manage, and coordinate co-op program activities in all vocational areas.  
*ED-Teaching & Learning Princ*

**EVT 5266. Management of Vocational Programs**

2-4(2-4,0). PR: Rank III Certificate or C.I. Study and achievement of selected competencies needed by vocational teachers, supervisors, and local administrators in the management of vocational education programs in the schools.  
*ED-Teaching & Learning Princ*

**EVT 5561. Student Guidance in the Vocational Program**

2-3(2-3,0). PR: Basic Teacher Certificate or C.I. Achievement of skills used by teachers as they gather student data, confer with students, and help students plan for employment or further education.  
*ED-Teaching & Learning Princ*

**EVT 6067. History of Career Education in the United States**

3(3,0). PR: EDF 6432 or EDF 6481 or C.I. A detailed examination of federal legislation, associations, organizations, people, events, and other key factors that define the history of career education in the U.S.  
*ED-Teaching & Learning Princ*

**EVT 6095. Issues in Career Education**

3(3,0). PR: EDF 6432 or EDF 6481 or C.I. An examination of current issues in career education including changing work force demands and implications for secondary and postsecondary career education.  
*ED-Teaching & Learning Princ*

**EVT 6264. Administration in Vocational Education**

3(3,0). PR: Basic Teacher Certificate or C.I. Administrative responsibilities in a local program of vocational education that includes two or more fields of occupational education.  
*ED-Teaching & Learning Princ*

**EVT 6265. Supervision in Vocational Education**

3(3,0). PR: Basic Teacher Certificate or C.I. Supervisory techniques for planning and implementing improvement of staff, curriculum, and personal relations in vocational education.

*ED-Teaching & Learning Princ*

**EVT 6267. Vocational Program Planning, Development, and Evaluation**

2-4(2-4,0). PR: Basic Teacher Certificate or C.I. Achievement of selected teacher competencies related to program objectives, courses of study, long-range plans, and techniques for evaluating vocational program effectiveness.

*ED-Teaching & Learning Princ*

**EVT 6664. School/Community Relations for Vocational Education**

2-4(2-4,0). PR: Basic Teacher Certificate or C.I. Achievement of proficiency in the use of media techniques to promote the vocational program. Development and maintenance of productive relationships between school and community groups.

*ED-Teaching & Learning Princ*

**EVT 6791. Research in Career Education**

3(3,0). PR: EDF 6432 or EDF 6481 or C.I. Curricular, instructional, demographic, and trends research in the field of career education.

*ED-Teaching & Learning Princ*

**EXP 5208. Sensation and Perception**

3(3,0). PR: Graduate status or senior standing or C.I. A study involving human information processing with regard to physical and psychological variables in sensory and perceptual phenomena.

*COS-Psychology*

**EXP 5254. Human Factors and Aging**

3(3,0). PR: Graduate standing, post bac, or senior standing with C.I. An overview of issues related to enhancing quality of life of elderly through the implementation of basic human factors principles in environmental and task design.

*COS-Psychology*

**EXP 5256. Human Factors I**

3(3,0). PR: Graduate status or senior standing or C.I. Survey of human factors literature. Introduction to topics including human capabilities and human interfaces with human-machine systems.

*COS-Psychology*

**EXP 5445. Psychology of Learning and Motivation**

3(3,0). PR: DEP 5057, and graduate status or senior standing or C.I. Examination of theories and research concerning the acquisition and retention of behavior, as well as motivational factors which influence learning and behavior.

*COS-Psychology*

**EXP 6116. Visual Performance**

3(3,0). PR: EXP 5208 or C.I. The psychology, physics and physiology of vision with an emphasis on the human visual response and applications of vision research.

*COS-Psychology*

**EXP 6126. Psychoacoustics**

3(3,0). PR: Graduate standing. The psychology, physics, and physiology of hearing and the auditory system.

*COS-Psychology*

**EXP 6255. Human Performance**

3(3,0). PR: C.I. Human performance dimensions and concepts of assessment of human capabilities; performance acquisition, information processing and decision making; applications of principles to the understanding of stress and performance effectiveness.

*COS-Psychology*

**EXP 6257. Human Factors II**

3(3,0). PR: EXP 5256 (HF1). The second in the series of basic human factors courses involving an in-depth examination of issues.

*COS-Psychology*

**EXP 6258. Human Factors III**

3(3,0). PR: EXP 5256, EXP 6257. The third in the series of basic human factors courses. Current topics in human factors, exchange of information on practical field experience in human factors.

*COS-Psychology*

**EXP 6506. Human Cognition and Learning**

3(3,0). PR: EXP 3404 and EXP 3604C. Research and theory relating to attention, memory, problem solving, and reasoning.

*COS-Psychology*

**EXP 6541. Advanced Human-Computer Interaction**

3(3,0). PR: EIN 6258 or C.I. Principles and guidelines of advanced human computer interaction as they apply to a variety of complex Human-Machine Systems.

*COS-Psychology*

**EXP 6939. Teaching Seminar**

3(3,0). PR: C.I. Orientation to and supervision in teaching assigned courses.

*COS-Psychology*

**EXP 6945. Human Factors Internship**

8(0,12). PR: EXP 5256, EXP 6257, PSY 6216, PSY 6217, EXP 6255, or C.I. Supervised placement in an industrial, governmental, or consulting setting. Student completes a specific project under the supervision of an organizational sponsor and a faculty member.

*COS-Psychology*

**EXP 7089. Human Factors Professional Issues**

3(3,0). PR: Admission to the Human Factors PhD program. Ethical principles of psychologists, code of conduct, grant/proposal writing, publication of research, academic and applied career paths, licensing requirements, and job search/preparation.

*COS-Psychology*

**FIL 5165. Visual Storytelling**

3(3,0). PR: Admission to Film and Digital Media master's program or C.I. Traditional forms of visual storytelling ranging from storyboarding to classic structural paradigms for feature film scripts.

*CAH-Film Program*

**FIL 5612. Film and Internet Business**

3(3,0). PR: Graduate status or senior standing or C.I. Survey of the business of financing and distributing films. Explores various, including feature films, short films, television documents and the Internet.

*CAH-Film Program*

**FIL 5800. Research Methods in Film and Digital Media**

3(3,0). PR: Admission to Film and Digital Media graduate program or C.I. Research methodology for the study and production of film and new media.

*CAH-Film Program*

**FIL 5810. Transmedia Story Creation**

3(3,0). PR: Admission to Film and Digital Media master's program or C.I. Repurposing of traditional stories: creation of authentic environments and the emergence of new authoring scenarios.

*CAH-Digital Media*

**FIL 5853. Cinematic Forms**

3(3,0). PR: Graduate standing in Film and Digital Media or C.I. Evolution of cinematic form through the works of key directors and theorists.

*CAH-Film Program*

**FIL 6454. Microbudget Production Design**

3(3,0). PR: Admission to Film and Digital Media graduate program or C.I. Aesthetic principles as applied to production design of low-budget projects.

*CAH-Film Program*

**FIL 6475. Advanced Cinematography**

3(3,0). PR: FIL 4472C. An advanced analysis and practice of aesthetic principles essential in cinematography; includes lighting, lenses, design production, and elements of art to create compelling visual compositions.

*CAH-Film Program*

**FIL 6596. Advanced Directing Workshop for Film and Digital Media**

3(3,0). PR: FIL 5165 or C.I. Advanced directorial concepts and techniques used in film, including coverage, performance, and blocking to create a compelling, dramatic, visual story.

*CAH-Film Program*

**FIL 6614. Domestic and International Models of Distribution**

3(3,0). PR: School of Film and Digital Media master's student. Global media distribution business models, with emphasis on independent film distribution in a variety of markets, including theatrical, home video, and internet.

*CAH-Film Program*

**FIL 6619. Guerilla Marketing**

3(3,0). PR: Admission to Film and Digital Media graduate program or C.I. Grass roots and non-traditional marketing strategies for film and media products.

*CAH-Film Program*

**FIL 6640. Microbudget Production Management**

3(3,0). PR: Admission to Film and Digital Media graduate program or C.I. Strategies for budgeting and scheduling low-budget films and digital media products.

*CAH-Film Program*

**FIL 6655. Intellectual Property Issues and Entertainment Law**

3(3,0). PR: or CR: GEB 6115 or C.I. Exploration of evolving intellectual property issues in the digital world, including basic contract requirements for producing independent film and digital media products.

*CAH-Film Program*

**FIL 6670. From Screenplay to Deal**

3(3,0). PR: FIL 5165 Visual Storytelling and C.I. Development of a film script to a marketable property, creating a strategy for and assembling the elements necessary to obtain financing.

*CAH-Digital Media*

**FIN 6314. Management of Financial Institutions**

3(3,0). PR: Graduate standing and FIN 6406. Analysis of management policies of financial institutions including asset, liability, and capital management. Study of the legal, economic, and regulatory environment faced by banks.

*BA-Finance*

**FIN 6404. Foundations of Finance**

3(3,0). PR: Graduate Accounting Foundations and Economic Concepts with Math Applications courses. Overview of business finance. Topics include financial statement analysis, time value of money, stocks, bonds, risk, capital investments, cost of capital, capital structure and dividends.

*BA-Finance*

**FIN 6406. Strategic Financial Management**

3(3,0). PR: MBA Professional Core I. Emphasis on the theory and analytical techniques associated with the major financial decisions of corporate management, including risk analysis, capital budgeting, short- and long-term financial management.

*BA-Finance*

**FIN 6425. Asset Management and Financial Decisions**

3(3,0). PR: Graduate standing and FIN 6406. Considers the interrelated decision-making process of asset allocations, corporate fundraising, dividend policies, and market maximization.

*BA-Finance*

**FIN 6465. Financial Analysis Seminar**

var(1.5-3,0). PR: Graduate Standing. Seminar in financial analysis; examining financial statements, annual reports and other sources of information. Not open to students who have completed or are enrolled in GEB 6895.

*BA-Finance*

**FIN 6475. Valuation of Small Businesses**

3(3,0). PR: Graduate standing and FIN 6406. Theory and practice of estimating the value of small, closely held businesses.

*BA-Finance*

**FIN 6515. Analysis of Investment Opportunities**

3(3,0). PR: Graduate standing and FIN 6406. Deals with the theory and tools of analysis required in the management of financial assets.

*BA-Finance*

**FIN 6536. Seminar in Investments**

3(3,0). PR: Graduate standing, FIN 6406, and FIN 6515. Analysis of options, futures, and other derivative securities and their use in hedging strategies. Other topics include institutional equity and bond portfolio management techniques.

*BA-Finance*

**FIN 6605. International Financial Management**

3(3,0). PR: ECO 6416, FIN 6406. The theory of finance as applied to the operations of multinational firms and international capital markets.

*BA-Finance*

**FIN 7807. Corporate Finance Theory**

3(3,0). PR: Admission to the Business doctoral program and FIN 6406 or equivalent; ECO 6416 or equivalent; or C.I. Elaborate coverage of significant theoretical/classical literature and review of empirical literature to provide a sound framework of conceptual knowledge for doctoral students.

*BA-Finance*

**FIN 7808. Introduction to the Theory of Finance**

3(3,0). PR: Admission to Business PhD program and FIN 6406 or equivalent, or C.I. This course provides an introduction to decisions and equilibrium under uncertainty, portfolio theory, asset pricing models, option pricing, capital structure, and agency theory.

*BA-Finance*

**FIN 7811. Seminar in Financial Markets and Institutions**

3(3,0). PR: Admission to Business doctoral program and FIN 6406 or equivalent, ECO 6416 or equivalent, and C.I. Extensive study of the theoretical and empirical literature dealing with current theory of the operation of financial markets and financial intermediaries.

*BA-Finance*

**FIN 7816. Investment Theory**

3(3,0). PR: Admission to business doctoral program, FIN 7807, QMB 7565, and C.I. Extensive coverage of theoretical and empirical literature dealing with modern investment thought, portfolio theory, capital market equilibrium, and related topics.

*BA-Finance*

**FIN 7915. Directed Research in Finance**

3(3,0). PR: Admission to the business doctoral program, FIN 7811, FIN 7816, and C.I. Advanced study of theory and evidence in specialized areas of finance. Study designed to lead toward student's dissertation. By definition, topical areas will vary.

*BA-Finance*

**FIN 7930. Seminar in Market Microstructure**

3(3,0). PR: Admission to the business doctoral program, FIN 7811, FIN 7816, and C.I. Study of private sector financial theory, policy, empires, and decision making.

*BA-Finance*

**FIN 7935. Finance Research Forum**

1(1,0). PR: Admission to Business PhD program and FIN 6406 or equivalent, or C.I. Research and pedagogical issues in finance, including research presentations by faculty, doctoral students, and invited scholars. May be taken for four hours credit. May be used in the degree program a maximum of four times only when course content is different.

*BA-Finance*

**FLE 5331. Foreign Language Methods at the Secondary Level**

3(3,0). PR: C.I., EDG 4323, or EDG 6236, or classroom teaching experience, and fluency in the target language and English. Methods of planning and teaching foreign language at the secondary level. The emphasis is on teaching communicatively and on integrating culture in the 6-12 classroom. May be used in the degree program a maximum of two times.

*ED-Teaching & Learning Princ*

**FLE 5335. Foreign Language Methods at the Elementary Level**

3(3,0). PR: C.I. or FLE 4333 or FLE 5870, EDG 4323 or EDG 6236, and fluency in target language and English. Methods of planning and teaching foreign language at the elementary level. The emphasis is on teaching communicatively and on integrating culture in the K-6 classroom. May be repeated for credit.

*ED-Teaching & Learning Princ*

**FLE 5870. Methods of Teaching Foreign Languages**

3(3,0). PR: Graduate status or senior standing or C.I. This course introduces prominent theories and applied research in the field of second language acquisition. It also offers guidance in the practical matters of teaching lower division language courses at university and community college levels.

*CAH-Modern Languages*

**FLE 5875. Computer Application in Teaching Foreign Languages**

3(3,0). PR: Graduate status or senior standing or C.I. Survey, analysis, and evaluation of computer software and Internet materials for teaching foreign languages.

*CAH-Modern Languages*

**FLE 6455. Curriculum and Materials in Foreign Language Teaching**

3(3,0). PR: FLE 4333 Foreign Language Teaching in the Secondary School or teaching experience. Fluency in the target language and English. A review of contemporary curricular designs as they pertain to teaching foreign languages, with attention being directed to the development of new programs and materials.

*ED-Teaching & Learning Princ*

**FLE 6695. Professional Development in Foreign Language Education**

3(3,0). PR: FLE 4333 Foreign Language Teaching in the Secondary School or teaching experience. Fluency in the target language and English. Introduction to the professional development of the foreign language educator by means of instruction in action research, grant writing, and writing for publication/conference presentation.

*ED-Teaching & Learning Princ*



**FLE 6705. Testing and Evaluation in Foreign Language Education**

3(3,0). PR: FLE 4333 Foreign Language Teaching in the Secondary School or teaching experience. Fluency in the target language and English. General principles of test construction and administration in foreign language instruction, including practical experience in test analysis and the preparation of valid test items.

*ED-Teaching & Learning Princ*

**FSS 6365. Management of Food Service Operations**

3(3,0). PR: Graduate standing. The examination of techniques and mechanisms employed in the management of food service operations. Comparisons, case studies, and selected topics focus on private and public operations.

*RCHM-Hospitality Operations*

**GEB 5941. Professional Business Practicum**

1.5(1.5,0). PR: Acceptance in the graduate program. The practicum is to provide a professional business work experience for students entering the MBA program without such experience.

*BA-College-BA*

**GEB 6115. Entrepreneurship**

3(3,0). PR: Graduate standing. Seminar on topics concerning the entrepreneurial process in small and large organizations, including needs assessment, sources and methods of innovation, financing, and barriers to entrepreneurship.

*BA-Marketing*

**GEB 6116. Business Plan Formation**

3(3,0). PR: GEB 6115 or MAN 6286 or MBA Foundation Core. Professional development and preparation of company business plan. Full analysis of plan and outside evaluation and ranking.

*BA-Management*

**GEB 6365. International Business Analysis**

3(3,0). PR: MBA Professional Core I. Extensive coverage of international business environment with emphasis on the functional operation of multinational firms.

*BA-Finance*

**GEB 6516. Technology Commercialization**

3(3,0). PR: Graduate standing. Focus of the course is on identification, evaluation and commercialization of new technologies. Emphasis will be placed on the legal, financial and strategy aspects of technology transfer and development.

*BA-Management*

**GEB 6897. Managing Challenges in Service Organizations**

1.5(1.5,0). PR: Admission to MBA program. Course explores the challenge of managing service organizations. Topics include: customer expectations, satisfaction, loyalty, retention, strategy, research, promotion, staffing, and service delivery systems.

*BA-Marketing*

**GEB 7910. Research Methods in Business**

3(3,0). PR: Admission to Business doctoral program and ECO 6416 or equivalent; or C.I. A foundation research course in business, exposing students to a full range of research experiences.

*BA-Economics*

**GEB 7911. Structural Equation Modeling for Business Research**

3(3,0). PR: ECO 7423, MAR 7626. Applications of structural equation modeling (SEM) for business research including factor analysis, aspects of measurement theory, mathematical and technical issues about model fitting are covered.

*BA-Management*

**GEB 7932. Business PhD Foundations**

3(3,0). PR: Admission to the PhD Program. A multidisciplinary introduction to doctoral-level study of business administration.

*BA-Economics*

**GEO 6472. World Political Geography**

3(3,0). PR: Graduate standing or C.I. Examination of the theoretical foundations of world political geography, the elements comprising it, and the comparative regional representations.

*COS-Political Science*

**GEY 5007. Women and Healthy Aging**

3(3,0). PR: Graduate standing or senior undergraduate. The examination of the health promotion opportunities and bio-psycho-social challenges of women as they age.

*CON-Nursing*

**GEY 5600. Physiology of Aging**

3(3,0). PR: BSC 2010C or PCB 3703C or PET 4351C or equivalent. The purpose of this course is to develop the student's understanding of the effects of human aging on various body systems.

*ED-Teaching & Learning Princ*

**GEY 5648. Gerontology: An Interdisciplinary Approach**

3(3,0). PR: Graduate status or senior standing or C.I. The study of aging will be presented from an interdisciplinary and multidisciplinary approach spanning the social sciences and health.

*HPA-Social Work*

**HFT 6227. Advanced Training and Development in the Hospitality Industry**

3(3,0). PR: Graduate Standing or C.I. This course is designed to give students detailed information on developing, delivering, assessing, and evaluating training and development programs for various segments of the hospitality industry.

*RCHM-Hospitality Services*

**HFT 6228. Critical Issues in Hospitality Human Resources**

3(3,0). PR: Graduate student status. Analysis of HR critical factors affecting operation and profitability of hospitality enterprises. Examination of emotional labor, empowerment, burnout, service orientation, turnover, absenteeism, compensation.

*RCHM-Hospitality Services*

**HFT 6245. Managing Hospitality and Guest Services Organizations**

3(3,0). PR: Graduate standing. Analysis of the unique problems of managing organizations in hospitality and guest services industry.

*RCHM-Hospitality Services*

**HFT 6247. Organizational Communication in Hospitality/Tourism Enterprises**

3(3,0). PR: Graduate standing. Developing the ability to view communication as an essential skill for demonstrating the knowledge in the areas of hospitality of guest service management, hospitality marketing, and hospitality finance and accounting.

*RCHM-Hospitality Services*

**HFT 6259. Case Studies in Lodging Management**

3(3,0). PR: Graduate standing. The case study approach is used to analyze and integrate the various management, human resource, and service department functions that comprise a hotel's operation.

*RCHM-Hospitality Operations*

**HFT 6265. The Management of Lodging Operations**

3(3,0). PR: Acceptance into the graduate program. Presentation and analysis of the unique management techniques applicable in the diverse segments of the lodging industry.

*RCHM-Hospitality Operations*

**HFT 6267. Case Studies in Restaurant Management**

3(3,0). PR: Graduate standing. This elective course will allow students to apply the principles of management, analysis, and planning that they have learned in their prior coursework to issues in multi-unit restaurant operations.

*RCHM-Hospitality Operations*

**HFT 6291. Hospitality Entrepreneurship: Concept Creation to Capitalization**

3(3,0). PR: HFT 6477 or C.I. Focus on creating, developing, and designing a unified concept plan, business plan, and investment proposal for a new hospitality business enterprise.

*RCHM-Hospitality Operations*

**HFT 6296. Hospitality/Tourism Strategic Issues**

3(3,0). PR: Enrollment limited to graduating Hospitality Management graduate students. Capstone experience with strategic decision-making principles in hospitality/tourism. Application of skills, knowledge and understanding of areas of concern for formulating and implementing operational strategies.

*RCHM-Hospitality Services*

**HFT 6319. Convention Center Management**

3(3,0). PR: Graduate standing. Exploration of the major components of center management, including finance, legal issues, facilities operation, marketing, event logistics and working with suppliers and vendors.

*RCHM-Tourism, Events & Attract*

**HFT 6347. Advanced Vacation Ownership Resort Planning**

3(3,0). PR: Graduate standing. In-depth study of the tools and techniques available for project feasibility and investment.

*RCHM-Hospitality Operations*

**HFT 6446. Hospitality/Tourism Information Technology**

3(3,0). PR: Graduate student status. Analysis and design of hospitality/tourism industry information systems. Data management, system implementation and current trends in hospitality/tourism technology are discussed.

*RCHM-Hospitality Services*

**HFT 6476. Feasibility Studies for the Hospitality/Tourism Enterprises**

3(3,0). PR: Graduate standing. Exploration of the many and varied facets of the economic decision making process as it applies to hospitality projects. Components of a financial feasibility study are analyzed as an aid to the decision making process of an investment in the hospitality industry.

*RCHM-Hospitality Services*

**HFT 6477. Financial Analysis of Hospitality Enterprises**

3(3,0). PR: Graduate standing. Specialized accounting and finance tools of analysis as related to the hospitality industry. Application of budgeting and pricing models, break-even analysis and internal control.

*RCHM-Hospitality Services*

**HFT 6528. Convention and Conference Sales and Services**

3(3,0). PR: Graduate standing. A process-oriented approach to selling to the convention/conference market and servicing their events. Analyzes the differences between and among venues and markets.

*RCHM-Tourism, Events & Attract*

**HFT 6529. Vacation Ownership Resort Sales Management**

3(3,0). PR: Graduate standing. Application and analysis of competitive sales management strategies via the use of critical thinking models, decision-making simulations, and field operation procedures commonly used to manage the sales process.

*RCHM-Hospitality Operations*

**HFT 6533. Hospitality/Tourism Industry Brand Management**

3(3,0). PR: Graduate standing. This elective course will introduce graduate students to critical topics, both theoretical and applied, that demonstrate why brands are important to consumers of hospitality and tourism services and, consequently, for the successful management of hospitality and tourism corporations.

*RCHM-Hospitality Services*

**HFT 6586. Research Methods in Hospitality and Tourism**

3(3,0). PR: Graduate Student Status. A survey of primary research methods used by decision makers in the various sectors of the hospitality and tourism industry. Formulation of research problems, statement of hypotheses, variables and level of measurements, research designs, data collection techniques, sampling, data processing, and information analysis.

*RCHM-Hospitality Services*

**HFT 6596. Strategic Marketing in Hospitality and Tourism**

3(3,0). PR: Graduate standing. An examination of the role of marketing strategy within the overall strategic planning process of hospitality/tourism organizations. Topics such as marketing environments, competition analysis, consumer behavior, product/service mix, differentiation, segmentation, target marketing, positioning, relationship marketing, and strategic alliances are studied and analyzed.

*RCHM-Hospitality Services*

**HFT 6608. Hospitality/Tourism Law and Ethics Seminar**

3(3,0). PR: Graduate standing. An interactive approach to the impact of changing social values, current legislation, and case law on management of hospitality and tourism enterprises. Professional Code of Ethics as applied to the hospitality industry are discussed.

*RCHM-Hospitality Services*

**HFT 6636. Hospitality/Tourism Risk Management**

3(3,0). PR: Graduate standing. Examination of policy and behavioral issues of risk management and hospitality. Focuses on risk management principles most relevant within hospitality and tourism.

*RCHM-Hospitality Services*

**HFT 6707. Travel and Tourism Economics**

3(3,0). PR: Graduate student status and undergraduate course in micro economics. Examines and evaluates the impact of travel and tourism on the local, regional, national and international economies.

*RCHM-Tourism, Events & Attract*

**HFT 6710. International Tourism Management**

3(3,0). PR: Graduate standing. A review and critical analysis of the issues and techniques of international tourism management with specific attention to the economic, sociocultural, and environmental impacts.

*RCHM-Tourism, Events & Attract*

**HFT 6738. Tourism Industry Analysis**

3(3,0). PR: Graduate standing. Quantitative impact analysis of tourism as an industry in the regional/national economy along the Tourism Satellite Accounts concept.

*RCHM-Tourism, Events & Attract*

**HFT 6797. Event Administration**

3(3,0). PR: Graduate standing. Examination of event management, focusing on sports and entertainment. Covers promotion, budgeting, marketing, crowd control, production, legal issues, customer service, ticketing and concessions.

*RCHM-Tourism, Events & Attract*

**HFT 7258. Strategies and Tactics: Lodging**

3(3,0). PR: Admission to the Hospitality Education track to the PhD in Education. Extensive review of the theoretical and empirical literature related to current strategies and operations of lodging enterprises throughout the world.

*RCHM-Hospitality Operations*

**HFT 7546. Strategies and Tactics: Guest Service Management**

3(3,0). PR: Admission to the Hospitality Education track to the PhD in Education. Comprehensive review of the theory, methods, and research findings related to the management of guest service organizations, with special emphasis on hospitality and tourism enterprises.

*RCHM-Hospitality Services*

**HFT 7715. Strategies and Tactics: Travel and Tourism**

3(3,0). PR: Admission to the Hospitality Education track to the PhD in Education. An in-depth investigation of the various components of travel and tourism focusing on the role of policy in their operation and development.

*RCHM-Tourism, Events & Attract*

**HFT 7876. Strategies & Tactics: Foodservice**

3(3,0). PR: Admission to the Hospitality Education track to the PhD in Education. Extensive review of the theoretical and empirical literature related to current strategies and operations of food service enterprises throughout the world.

*RCHM-Hospitality Operations*

**HIM 6288. Health Care Coding and Diagnosis**

3(3,0). PR: Graduate status. Analysis and use of ICD and CPT coding procedures.

*HPA-Health Information Managt*

**HIS 5067. Introduction to Public History**

3(3,0). PR: Graduate status or senior standing or C.I. Examine and discuss the practice of history in museums, archives, documentary editing, historical publication, media, historical societies, and government agencies.

*CAH-History*

**HIS 5158. Classic and Contemporary Historical Thought**

3(3,0). PR: Graduate status or senior standing or C.I. Course will explore work of important historians influenced by social theory to gain an understanding of their main concepts.

*CAH-History*

**HIS 6159. Historiography**

3(3,0). Selected topics in the study of history. May be repeated for credit.

*CAH-History*

**HIS 6905. History Capstone Class**

3(3,0). PR: Satisfactory completion fo 21 - 24 hours of graduate level course work. Advanced historiographical and bibliographical readings for preliminary exams and submission of a research plan for thesis topic. Graded S/U.

*CAH-History*

**HIS 6942. Internship**

3(3,0). PR: Graduate standing. Graduate internship in public history. Subject may vary. May be used in the degree program a maximum of 2 times.

*CAH-History*

**HIS 6945. Internship in Historical Editing and Publishing**

3(3,0). PR: Graduate standing. Introduction to the fundamentals of historical editing, with emphasis on the processing and publication of historical documents and articles.

*CAH-History*

**HIS 6946. Teaching Practicum**

3(3,0). Student observation, participation, direction, and leadership in a college survey course.

*CAH-History*

**HSA 5177. Foundations of Health Care Finance**

3(3,0). PR: Admission to graduate program in HSA or C.I. Preparatory course for graduate students who are not prepared to take the required health care finance course.

*HPA-Health Professions*

**HSA 5198. Health Care Decision Sciences and Knowledge Management**

3(3,0). PR: Graduate standing. Emphasis on development of a general systematic approach to solving problems under uncertainty. The role of informatics and application of information technology in improving managerial decision making process will be presented.

*HPA-Health Professions*

**HSA 5257. ICD9 Coding for Health Services Administrators**

3(3,0). PR: HSC 6636, B.S. in Health related field, or C.I. Emphasis on developing basic skills to facilitate an understanding of the coding process and the compliance issues relevant to the process. May be repeated for credit.

*HPA-Health Professions*

**HSA 5258. CPT Coding for Health Services Administrators**

3(3,0). PR: HSC 6636 or C.I. or BS in health-related field. Emphasis on developing skills to facilitate an understanding of CPT Coding process and the compliance issues relevant to the process.

*HPA-Health Professions*

**HSA 6108. Health Care Organization and Management II**

3(3,0). PR: HSA 6342, HSA 5198, HSC 6911. Emphasis on planning, development, marketing approaches, and problem solving using computer methods.

*HPA-Health Professions*

**HSA 6112. International Health Systems**

3(3,0). PR: Graduate status. Survey of health care systems in developed and developing countries.

*HPA-Health Professions*

**HSA 6119. Health Care Organization and Management**

3(3,0). PR: HSC 6911. Planning, development, and marketing methods.

*HPA-Health Professions*

**HSA 6126. Principles of Managed Care**

3(3,0). PR: PHC 6160. Components of managed care, contract requirements, provider practice patterns, and financing elements.

*HPA-Health Professions*

**HSA 6128. Health Care Services Management**

3(3,0). PR: Graduate status. Conceptization and development of customer service in health care organizations. The focus is on the links between theory and practical applications.

*HPA-Health Professions*

**HSA 6155. Health Economics and Policy**

3(3,0). PR: Microeconomics or C.I. Examines how the interests and interactions of patients, providers, insurers, the government, and others impact the allocation and distribution of health care.

*HPA-Health Professions*

**HSA 6189. Health Care Coding and Diagnosis**

3(3,0). PR: Graduate standing. Analysis and use of ICD and CPT coding procedures.

*HPA-Health Professions*

**HSA 6342. Health Care Human Resources**

3(3,0). PR: Graduate status. Study of health care organizations, including modern management, human performances, and leadership.

*HPA-Health Professions*

**HSA 6385. Health Care Quality Management**

3(3,0). PR: Graduate status. Mechanisms of enhancing quality of service and care.

*HPA-Health Professions*

**HSA 6508. Principles of Practice Management**

3(3,0). Studies the various models of practice organization and delivery. Emphasis is on risk management as it applies to medical practices.

*HPA-Health Professions*

**HSA 6510. Special Issues in Practice Management**

3(3,0). PR: HSA 6508, HSA 6115, or PHC 6160. Methods of dealing with market driven and government initiated changes in medical practices.

*HPA-Health Professions*

**HSA 6511. Health Care Leadership**

3(3,0). PR: Graduate Status or C.I. Practical applications of leadership theory in health services organizations.

*HPA-Health Professions*

**HSA 6752. Health Care Statistical Tools**

3(3,0). PR: Graduate status. Computer based course focusing on statistical quality tools, such as cause and effect diagrams, pareto and control charts, and root cause analysis, used in the management of healthcare organizations.

*HPA-Health Professions*

**HSA 6759. Health Care Outcomes Management**

3(3,0). PR: Graduate status. Measure and methods of outcomes assessment and evaluation. Development, structure, and evaluation of performance of health system. Assessing quality of services and quality management.

*HPA-Health Professions*

**HSA 6815. Practicum in Health Care Management**

2-6(0,20). PR: Graduate status or C.I. Supervised practicum in health care institution management.

*HPA-Health Professions*

**HSA 6925. Capstone in HSA**

3(3,0). PR: Graduate status. Case analysis approach to solving current health services administration problems and issues. Prepares students for comprehensive examination experience.

*HPA-Health Professions*

**HSA 7115. Advanced Health Care Organization Theory**  
3(3,0). PR: Admission to PhD program or C.I. New theories of health care management, emphasizing organizational structure, health care leadership, and information management in health care decision-making.  
*HPA-Health Professions*

**HSA 7116. Theories in Healthcare Management**  
3(3,0). PR: Admission to Public Affairs PhD program or C.I. Overview of healthcare management theories/ applications including resource dependence, populations ecology, institutional structure and innovation, network, transaction costs, decision making, power and stakeholder management theories.  
*HPA-Health Professions*

**HSC 5317. Health Methods: Teaching Strategies and Interventions**  
3(3,0). PR: Admission to Graduate Certificate in Health and Wellness or C.I. Application of the knowledge of teaching strategies, methodology, and curriculum to develop a comprehensive school health program.  
*ED-Ed Research, Tech & Lead*

**HSC 5595. AIDS: A Human Concern**  
3(3,0). Focus on epidemiology, transmission, prevention, legal and health care issues, economic impact, psychosocial aspects, sexuality, substance abuse, ethics, hotlines, referral services and the decision making process.  
*HPA-Health Professions*

**HSC 6175. Advanced Trends in Health Care Finance Theory**  
3(3,0). PR: CI or PHC 6160. Public health funding philosophies; evolving market strategies of insurers and managed care organizations; macroeconomic implication of alternative financing policies.  
*HPA-Health Professions*

**HSC 6247. Community Health Education**  
3(3,0). Development and evaluation of community health education programs within voluntary health organizations. HMOs, hospitals, and academic institutions  
*HPA-Health Professions*

**HSC 6306. Organization and Management of Health Science Programs**  
3(3,0). PR: Graduate status or C.I. Management of professional health education programs in various institutional settings: university, community college, academic medical centers. Includes program planning, development, and evaluation.  
*HPA-Health Professions*

**HSC 6570. Clinical Nutrition**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. The role of nutrition in promoting health and wellness: principles and best practices of nutrition therapy in management of chronic diseases of public health concern.  
*HPA-Health Professions*

**HSC 6597. Human and Applied Metabolism**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. The contribution of carbohydrate, fat and protein to energy metabolism at rest and during physical stress will be examined.  
*HPA-Health Professions*

**HSC 6607. Lifestyle Medicine**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. This class will use scientific evidence to provide studies with the most up-to-date information on successful strategies for preventing and treating numerous chronic diseases, stress and addiction.  
*HPA-Health Professions*

**HSC 6616. Clinical Exercise Physiology**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. This course is designed to give the student an understanding of the graded exercise test as a functional and diagnostic modality in normal and diseased people.  
*HPA-Health Professions*

**HSC 6636. Issues and Trends in the Health Professions**  
3(3,0). Exploration of current status, issues, problems, and future trends in the practice and education of health professions.  
*HPA-Health Professions*

**HSC 6656. Healthcare Ethics**  
3(3,0). PR: Graduate standing or C.I. Examine and analyze central concepts and values in healthcare ethics in order to provide a foundation for sound ethical decision-making.  
*HPA-Health Professions*

**HSC 6659. Issues in Geriatric Health Care**  
3(3,0). Identification of the health care needs of the elderly and the services required to meet them. Analysis of the current issues, problems, and trends in geriatric health  
*HPA-Health Professions*

**HSC 6815. Practicum in Health Science Education**  
2-6(0,20). PR: Graduate status or C.I. Supervised practicum in academic, clinical, or community instructional program.  
*HPA-Health Professions*

**HSC 6911. Scientific Inquiry in the Health Profession**  
3(3,0). PR: Graduate status or C.I. Research design and statistical evaluation in health professions.  
*HPA-Health Professions*

**HSC 7930. Special Issues in Health Services Administration**  
3(3,0). PR: Admission to PhD program or C.I. Selected problems in health services administration. May be repeated for credit only when course content is different.  
*HPA-Health Professions*

**HUM 5802. Applied Contemporary Humanities**  
3(3,0). PR: HUM 5803, graduate status or senior standing, or C.I. Development of an application research project relevant to contemporary cultural issues, using Humanities theories and methods.  
*CAH-Philosophy*

**HUM 5803. Theories and Methods of the Humanities**  
3(3,0). PR: Senior undergraduate standing and at least one of the following: HUM 3252, HUM 3320, or PHI 4808 or graduate standing. Approaches, concepts, methods, and theoretical issues in the Humanities with an emphasis on critical analysis of diverse disciplinary and interdisciplinary theories and methods.  
*CAH-Philosophy*

**HUN 5247. Principles of Human Nutrition**  
3(3,0). PR: Admission to Health Sciences Clinical and Lifestyle Track or C.I. Course promotes in-depth understanding of the role of macronutrients in human nutrition and health enabling graduates to integrate knowledge into other aspects of their work.  
*HPA-Health Professions*

**IDS 5127. Foundation of Bio-Imaging Science**  
3(3,0). PR: graduate standing. Fundamental theory, design, and practice of modern bio-imaging techniques used for basic biomedical research applications.  
*COM-Molecular & Microbiology*

**IDS 5145. Interdisciplinary Course in Simulation**  
3(3,2). PR: Calculus, matrix algebra, probability and statistics, high level programming language. An interdisciplinary course on simulation with hands-on experience in discrete event modeling, continuous modeling and shared virtual world. May be repeated for credit.  
*ECS-Industrial & Management*

**IDS 5717C. Introduction to Modeling and Simulation**  
3(2,2). PR: STA 2023 or equivalent. Introduction to the theory and practice of modeling and simulation with emphasis on multidisciplinary scientific underpinnings.  
*COS-Psychology*

**IDS 5719. Quantitative Aspects of Modeling and Simulation**  
3(3,0). PR: MAC 2241 or equivalent. Introduction to matrix algebra and other discrete mathematics topics for modeling and simulation applications.  
*COS-Psychology*

**IDS 5915. Research Methods in Cognitive Sciences**  
3(3,0). PR: Admission to graduate certificate program in Cognitive Sciences or C.I. Interdisciplinary research methods in the cognitive sciences  
*CAH-Philosophy*

**IDS 5936. Topics in Cognitive Sciences**  
3(3,0). PR: Admission to graduate certificate in Cognitive Sciences or C.I. Theoretical issues and empirical studies in the cognitive sciences, including contemporary discussions of mind, brain, artificial intelligence, pathologies, and behavioral capacities.  
*CAH-Philosophy*

**IDS 6308. Ways of Knowing**  
3(3,0). PR: Admission to the Master's program in Liberal Studies. Theoretical models of knowledge as exemplified by various disciplines and interdisciplinary activity. Focus on epistemological issues raised in part and present works.  
*UGST-Interdisciplinary Studies*

**IDS 6351. Critical Thinking and Writing**  
3(3,0). PR: IDS 6308 and IDS 6669. Focus on refining critical understanding of interdisciplinary research and organization and presentation of interdisciplinary ideas, building on first two core courses  
*UGST-Interdisciplinary Studies*

**IDS 6503. International Trends in Instructional Systems**  
3(3,0). PR: EME 6613. International and multicultural issues and how they affect the global impact of technology in education, training, and quality management.  
*ED-Ed Research, Tech & Lead*

**IDS 6504. Adult Learning**  
3(3,0). PR: Graduate standing. An examination of theory and research on adult learning with emphasis on practical applications, instruction, and technology use in educational and workplace settings.  
*ED-Educational Studies*

**IDS 6516. Leadership Development for Mathematics and Science Teachers**  
3(3,0). PR: Graduate standing or C.I. Development of mathematics and science teachers' abilities to assume teacher leadership roles in their schools.  
*ED-Teaching & Learning Princ*

**IDS 6669. Interdisciplinary Approaches to Research**  
3(3,0). PR: IDS 6308. Interdisciplinary survey of methodologies used in academic disciplines. Basic concepts, research paradigms, and contemporary issues explored.  
*UGST-Interdisciplinary Studies*

**IDS 6713. Virtual Reality**  
3(3,0). PR: EIN 5255C or IDS 5717C. Gives students an appreciation for the uses and complexity of virtual reality systems by building a simple environment and writing a research paper.  
*ECS-Industrial & Management*

**IDS 6910. Research in Mathematics and Science Education**  
3(3,0). PR: Graduate standing or C.I. Support provided for graduate students in mathematics and science education as they plan and/or implement research projects.  
*ED-Teaching & Learning Princ*

**IDS 6915. Classroom Management for Mathematics and Science Teachers**  
3(3,0). PR: Graduate standing or C.I. Teacher candidates will engage in critical examination of current school and classroom organization and management models, methods, and strategies in middle school. Causes and solutions to disruptive and noncompliant behaviors will be discussed.  
*ED-Teaching & Learning Princ*

**IDS 6916. Simulation Research Methods and Practicum**  
3(3,0). PR: IDS 5717C and IDS 5719 or their equivalents. Interdisciplinary teams of students conduct fundamental and applied research on contemporary issues in modeling, simulation, and training.  
*CAH-Interdisciplinary*

**IDS 6933. Seminar in Teaching Mathematics and Science**  
3(3,0). PR: Graduate standing and valid Florida Teaching

Certificate or C.I. This course is designed so that graduate students may study specific areas related to curriculum, instruction, and assessment in mathematics and science education. May be repeated for credit.

*ED-Teaching & Learning Princ*

**IDS 6934. Using Technology in Mathematics and Science**  
3(2,1). PR: Graduate standing and valid Florida Teaching Certificate or C.I. This course emphasizes the learning and use of technology in the teaching of mathematics and science.

*ED-Teaching & Learning Princ*

**IDS 6937. Reflecting on Instruction of Mathematics and Science**

3(3,0). PR: Graduate standing and valid Florida Teaching Certificate or C.I. Focuses on the work of Dewey and Piaget as it applies to mathematics and science teaching. Emphasizes integrating math and science teaching.

*ED-Teaching & Learning Princ*

**IDS 6939. Reforming Curriculum in Mathematics and Science Education**

3(3,0). PR: Graduate standing and valid Florida Teaching Certificate or C.I. Emphasizes the reform movement including technology, history of curriculum, curriculum theory, and standards documents.

*ED-Teaching & Learning Princ*

**IDS 7500. Seminar in Educational Research**

1-3(1-3,0). PR: Admission into doctoral program in Education or C.I. An examination of education related research initiatives. May be repeated for credit.

*ED-Teaching & Learning Princ*

**IDS 7501. Issues and Research in Education**

3(3,0). PR: Admission to PhD in Education or C.I. An examination of major issues impacting education and related practical and methodological issues in research.

*ED-Teaching & Learning Princ*

**IDS 7502. Case Studies in Research Design**

3(3,0). PR: Admission into the PhD in Education. A critical analysis of educational research design.

*ED-Teaching & Learning Princ*

**IDS 7690. Frontiers in Biomolecular Sciences**

1(1,0). PR: Admission to Biomolecular Sciences PhD program. Cross-disciplinary biomolecular research seminar, collaboration between chemistry, biology, and molecular biology and microbiology. May be repeated for credit.

*COM-Molecular & Microbiology*

**IDS 7691. Structure-Function-Relationships of Biomolecules I**

5(5,0). PR: Admission to Biomolecular Sciences PhD program. First semester of a two semester sequence with lectures and literature discussion of structure-function relationships of action and functions of biomolecules presented from an interdisciplinary perspective.

*COM-Molecular & Microbiology*

**IDS 7692L. Experiments in Biomolecular Sciences**

1-3(0,1-3). PR: Admission to Biomolecular Sciences PhD program. Laboratory rotations in one to three research laboratories throughout the first year of the Biomedical Science doctoral program. Graded S/U. May be used in the degree program a maximum of four times.

*COM-Molecular & Microbiology*

**IDS 7693. Structure-Function Relationships of Biomolecules II**

5(5,0). PR: Admission to PhD in Biomolecular Sciences and IDS 7691. Second semester of a two semester sequence with lectures and literature discussion of structure-function relationships of action and functions of biomolecules presented from an interdisciplinary perspective.

*COM-Molecular & Microbiology*

**IDS 7938. Research Cluster Seminar**

3(3,0). PR: Admission into the PhD program in Education or C.I. An examination of research issues focusing on interdisciplinary inquiry in education.

*ED-Child, Family & Comm Sci*

**INP 5825. Human-computer Interface (HCI) design: A team approach**

3(3,0). PR: Graduate status or senior standing or C.I. Interdisciplinary approach to human-computer interface design, including behavior, engineering, computer science, and instructional aspects. Tools and techniques for team development and the evaluation of software for usability

*COS-Psychology*

**INP 6058. Job and Task Analysis**

3(3,0). PR: C.I. A review of current theory and practice in the collection, quantification, analysis, manipulation and summarization of position, job and task data.

*COS-Psychology*

**INP 6072. Applied Research Methods in Industrial and Organizational Psychology**

3(3,0). PR: Graduate standing in master's program in Industrial and Organizational Psychology or PhD in Psychology or C.I. Applied/practical issues in the conduct of research in organizational settings, including planning and implementation, experimental and quasi-experimental designs, and data analysis.

*COS-Psychology*

**INP 6080. Advanced Practice in Industrial and Organizational Psychology**

3(3,0). PR: Graduate standing in Master's Program in Industrial and Organizational Psychology and C.I. Program capstone course: A review of the applied behavioral problems recurrent in the professional practice of Industrial and Organizational Psychology.

*COS-Psychology*

**INP 6088. Applied Problems in Industrial and Organizational Psychology**

3(3,0). PR: Admission to Industrial and Organizational Psychology master's program or C.I. A review of applied behavioral problems recurrent in the professional practice of industrial/organizational psychology.

*COS-Psychology*

**INP 6094. Current Topics in Industrial and Organizational Psychology**

3(3,0). PR: Admission into the Industrial and Organizational Psychology MS Program or C.I. A review of the theoretical and empirical literature relevant to selected topics in Industrial and Organizational Psychology.  
*COS-Psychology*

**INP 6103. Applied Organizational Psychology I**

3(3,0). PR: Graduate standing in the master's program in Industrial and Organizational Psychology. Theory and practice of Industrial and Organizational Psychology, focusing on individual characteristics (e.g., work motivation, attitude theory, and work stress).  
*COS-Psychology*

**INP 6104. Applied Organizational Psychology II**

3(3,0). PR: INP 6103. Theory and practice of Industrial and Organizational Psychology, focusing on group processes (e.g., group dynamics, communication, leadership and decision making).  
*COS-Psychology*

**INP 6110. Applied Industrial Psychology I**

3(3,0). PR: Graduate standing in master's Industrial and Organizational Psychology, C.I. Theory and practice of Industrial and Organizational Psychology, focusing on criterion theory and development, job and task analysis, and employee selection and placement.  
*COS-Psychology*

**INP 6111. Applied Industrial Psychology II**

3(3,0). PR: INP 6110. Theory and practice of Industrial and Organizational Psychology, focusing on performance appraisal and feedback, and training: theory, program design, and evaluation.  
*COS-Psychology*

**INP 6215. Assessment Centers and Leadership**

3(3,0). PR: Graduate admission and C.I. Survey of assessment center technology and application with emphasis on leadership theory and practice.  
*COS-Psychology*

**INP 6317. Organizational Psychology and Motivation**

3(3,0). PR: Graduate admission and C.I. Review of theories, research and application of psychological principles to organizational settings and human motivation.  
*COS-Psychology*

**INP 6605. Training and Performance Appraisal**

3(3,0). PR: Graduate admission and C.I. Survey of theories, research and practice in the areas of industrial/organizational training and performance appraisal.  
*COS-Psychology*

**INP 6945C. Industrial Psychology Practicum I**

3(1,6). PR: Graduate admission and C.I. Supervised placement in an applied setting.  
*COS-Psychology*

**INP 6947. Industrial Psychology Practicum II**

3(3,0). PR: Graduate admission and C.I. Supervised research in industry. May be repeated for credit.  
*COS-Psychology*

**INP 7071. Research Methods in Industrial and Organizational Psychology**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program and PSY 6216. A review of research methodology in organizational settings, focusing on hypothesis testing, quasi-experimental designed, non-experimental designs, and sampling procedures.  
*COS-Psychology*

**INP 7075. Current Theory and Research in Industrial and Organizational Psychology**

3(3,0). PR: Graduate standing in the PhD program in Industrial and Organizational Psychology or C.I. Critical analysis of current theory and research published in the periodical scientific literature germane to the field of Industrial and Organizational Psychology. May be used in the degree program a maximum of five times.  
*COS-Psychology*

**INP 7081. Professional Issues in Industrial and Organizational Psychology**

3(3,0). PR: Graduate standing in the doctoral program in Industrial Organizational Psychology or C.I. Ethical principles, standards, and laws guiding professional behaviors and psychological practice.  
*COS-Psychology*

**INP 7214. Industrial Psychology I**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program. Review of the theoretical and practical issues and the research literature related to criterion development and personnel selection  
*COS-Psychology*

**INP 7251. Industrial Psychology II**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program. Review of the theoretical and practical issues and the research literature related to retaining, theory and program design/evaluation and performance appraisal/feedback.  
*COS-Psychology*

**INP 7310. Organizational Psychology I**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program. Review of the theoretical and practical issues and research literature related to work motivation theory, attitude theory, and decision theory.  
*COS-Psychology*

**INP 7311. Organizational Psychology II**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program. Review of the theoretical and practical issues and research literature related to small group theory and process and organization theory.  
*COS-Psychology*



**INP 7919. Directed Doctoral Study in Industrial and Organization Psychology**

3(3,0). PR: Admission to the doctoral Industrial and Organizational Psychology program. Directed study in areas of organization development theory, career development theory consumer behavior, individual assessment, or other relevant topics in Industrial and Organizational psychology. May be repeated for credit.  
*COS-Psychology*

**INP 7933. Seminar in Industrial and Organizational Psychology**

3(3,0). PR: Admission to Industrial and Organizational PhD or C.I. Selected topics in industrial and organizational psychology. May be used in the degree program a maximum of five times.  
*COS-Psychology*

**INR 6007. Seminar in International Politics**

3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Introduces the student to the advances in international relations theory and research through a broad sampling of approaches and methods.  
*COS-Political Science*

**INR 6039. International Political Economy**

3(3,0). PR: Graduate or post bac status. A survey of major themes, concepts, theories, and methods of international political economy, which also entails policy discussion and applications.  
*COS-Political Science*

**INR 6071. Seminar in Weapons of Mass Destruction**

3(3,0). PR: Admission to graduate degree-seeking program or C.I. Examination of the Impact and Proliferation of Weapons of Mass Destruction, and efforts to control and regulation.  
*COS-Political Science*

**INR 6086. International Public Policy**

3(3,0). PR: Graduate standing. Examines endogenous and exogenous variables involved in selected issues in the arena of international public policy.  
*COS-Political Science*

**INR 6108. Seminar in American Foreign Policy**

3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Domestic and international factors influencing the development of selected foreign policy issues.  
*COS-Political Science*

**INR 6136. Seminar in American Security Policy**

3(3,0). PR: Admission to graduate degree seeking program or C.I. Examination of domestic and international factors influencing the development of selected American security policy issues.  
*COS-Political Science*

**INR 6228. International Politics of the Caspian Sea Region**

3(3,0). PR: Degree-seeking graduate standing or C.I. A comprehensive analysis of the political issues of the Caspian region.  
*COS-Political Science*

**INR 6275. International Politics of the Middle East**

3(3,0). PR: Graduate standing or C.I. Analysis of the international relations of the Middle East both among Middle Eastern states, as well as relations with other states, especially the great powers.  
*COS-Political Science*

**INR 6352. Global Environmental Politics**

3(3,0). PR: Admission to Political Science MA or C.I. Unique environmental struggles and issues on the international and global levels.  
*COS-Political Science*

**INR 6405. International Environmental Law**

3(3,0). PR: Graduate standing. Examination of the international treaty regime governing the global environment, including biodiversity, the atmosphere, the ocean, and hazardous waste.  
*COS-Political Science*

**INR 6507. International Organization**

3(3,0). PR: Graduate standing or C.I. A survey of the theories, structures, issues, and agents of international organization, focusing on the effects of regional and global governance on state behavior.  
*COS-Political Science*

**INR 6607. International Relations Theory**

3(3,0). PR: Admission to graduate degree-seeking program or C.I. A survey of primary theoretical approaches to understanding and explaining international relations.  
*COS-Political Science*

**INR 6716. Politics of International Trade Policy**

3(3,0). PR: Graduate standing or C.I. A survey of the theories and agents of international trade policy-making at the sub-national, nation-state, regional, and global levels.  
*COS-Political Science*

**ISC 6146. Environmental Education for Educators**

3(2,1). PR: Graduate standing and a valid Florida Teaching Certificate or C.I. Emphasizes the importance of environmental education in the school curriculum. Includes facilitator training in national environmental education programs.  
*ED-Teaching & Learning Princ*

**ISM 5021. Introduction to Management Information Systems**

3(3,0). PR: Acceptance into the graduate program. Designed to provide the student with the fundamentals of business data processing and management information systems used by organizations in a modern society.  
*BA-Management Inform. System*

**ISM 5123. Concepts of Systems Analysis and Design**

3(3,0). PR: Graduate standing. Using a traditional life-cycle approach, the course introduces practical tools and techniques for organizational analysis and the subsequent design of an information system.  
*BA-Management Inform. System*

**ISM 5127. Concepts of Database Design and Administration**

3(3,0). PR: Graduate standing. Introduces concepts and methods related to the effective utilization of data by organizations.

*BA-Management Inform. System*

**ISM 5219. Business Intelligence Systems**

3(3,0). PR: Graduate standing. Modern paradigms in data analysis. The detection of useful patterns and relationships in databases.

*BA-Management Inform. System*

**ISM 5256. Concepts of Business Programming**

3(3,0). PR: Senior or admission to graduate study. Principles of programming including program design, fundamental programming constructs, and database access.

*BA-Management Inform. System*

**ISM 5315. Information Systems Project Management**

3(3,0). PR: Graduate standing. This course introduces students to the concept of project management including project scope, cost, time and quality.

*BA-Management Inform. System*

**ISM 5507. Electronic Agorae**

3(3,0). PR: Admission to graduate study. Broad exploration of internet tools as vehicles for communication, interaction, decision-making, and community formation.

*BA-Management Inform. System*

**ISM 6023. Information Systems Usability**

3(3,0). PR: CBA master's program of study foundation core, MS/MIS foundation core, or C.I. Students learn and apply the theories and methods of information systems usability, with an emphasis on user-centered design.

*BA-Management Inform. System*

**ISM 6121. Advanced Information Systems Analysis and Design**

3(3,0). PR: MS/MIS Technical Foundation Core and CBA master's program of Study Foundation Core. This course covers advanced topics of information systems development, including analysis of system requirements, design, implementation and operation.

*BA-Management Inform. System*

**ISM 6158. ERP Implementation**

3(3,0). PR: ISM 6121, ISM 6217. The course is an overview of Enterprise Resource Planning (ERP). It focuses on the impact of ERP systems on organizations.

*BA-Management Inform. System*

**ISM 6217. Advanced Database Administration**

3(3,0). PR: MS/MIS Technical Foundation Core and CBA master's program of study foundation core. This course covers various database technologies in business organizations, including database systems, multidatabase systems, data warehousing, data mining, and object-oriented databases.

*BA-Management Inform. System*

**ISM 6227. Management of Telecommunications**

3(3,0). PR: MS/MIS Technical Foundation Core and CBA master's program of study foundation core. This course will focus on the strategic management of networks (voice, video, image, and data). coverage includes network management systems, LANs and the internet.

*BA-Management Inform. System*

**ISM 6305. Information Resources Management**

3(3,0). PR: CBA master's program of study foundation core. This course provides an investigate of issues relevant to effectively managing IT activities and the challenges facing IT managers and some potential solutions to deal with them.

*BA-Management Inform. System*

**ISM 6367. Strategic Information Systems**

3(3,0). PR: MBA Professional Core I. Management and strategic use of enterprise digital platforms (i.e., enterprise resource planning, customer relationship management, supply chain management) to support internal and external business partnerships.

*BA-Management Inform. System*

**ISM 6368. Business Knowledge Management Systems**

3(3,0). PR: Admission to MS/MIS program. Principles of Organization Knowledge Management (KM), focusing on information systems that assist in the creation and management of knowledge.

*BA-Management Inform. System*

**ISM 6395. Seminar - Management Information System**

3(3,0). PR: ISM 6305, ISM 6121, and graduate standing. This seminar covers theoretical foundations and current research directions in management information systems. Topics include organizational and managerial processing; systems design, development and implementation.

*BA-Management Inform. System*

**ISM 6407. Decision Support Systems**

3(3,0). PR: CBA master's program of study foundation core. This course addresses several aspects of organizational decision-making, including: decision support, operation system management, and data mining.

*BA-Management Inform. System*

**ISM 6422. Intelligent Systems for Business Applications**

3(3,0). PR: CBA master's program of study foundation core and ISM 6407. An introduction to expert systems and data mining in the context of business applications.

*BA-Management Inform. System*

**ISM 6485. Electronic Commerce**

3(3,0). PR: MS/MIS Technical Foundation Core and CBA master's program of study foundation core. This course will provide an understanding of electronic commerce, including an overview of the infrastructure and technologies, comparative analysis of markets, e-commerce applications, and website development.

*BA-Management Inform. System*

**ISM 6537. Quantitative Models for Business Decisions**

3(3,0). PR: CBA master's program of study foundation core. Quantitative techniques useful for the solution of business problems. Mathematical model building to aid the decision-making process is stressed.

*BA-Management Inform. System*

**ISM 6539. Service Organizations and Operations Management**

3(3,0). PR: CBA master's program of study foundation core. In-depth study of the unique characteristics, challenges, and quantitative techniques associated with managing organizations in the service sector.

*BA-Management Inform. System*

**ISM 6930. Seminar in Management Information Systems**

3(3,0). PR: MS/MIS technical foundation core and CBA master's program of study foundation core. This course will focus on current MIS topics of technological and management relevance.

*BA-Management Inform. System*

**ISM 7027. Systems Support of Organizational Decision Making**

3(3,0). PR: Doctoral standing and C.I. This course focuses on support systems for organizational decision making, including knowledge management systems.

*BA-Management Inform. System*

**ISM 7029. Organizational Impacts of Information Technology**

3(3,0). PR: Doctoral standing and C.I. Examination of impact of IT, IT-based innovation, and IT management in organizations.

*BA-Management Inform. System*

**ISM 7317. Information System Project Implementation and Management**

3(3,0). PR: C.I. Research issues in information systems project implementation and management.

*BA-Management Inform. System*

**ISM 7909. Comprehensive Research Project**

3(3,0). PR: Doctoral standing and C.I. This course allows students to conduct a research project of limited scope from idea to execution to manuscript preparation.

*BA-Management Inform. System*

**ISM 7916. Seminar on Behavioral Information Systems Research**

3(3,0). PR: Doctoral standing and C.I. This research seminar focuses on research in the use of information technology by individuals, groups, and organizations.

*BA-Management Inform. System*

**ISM 7926. Management Information Systems Research Forum**

1(1,0). PR: Doctoral standing and C.I. Research and pedagogical issues in information systems, including research presentations by faculty, doctoral students, and invited scholars.

*BA-Management Inform. System*

**ISM 7936. Seminar on Technical Information Systems Research**

3(3,0). PR: Doctoral standing and C.I. This research seminar focuses on current research in the technical fields of Information Systems. It covers both research areas and research methods.

*BA-Management Inform. System*

**ISM 7938. Theoretical Foundations for Information Systems Research**

3(3,0). PR: Doctoral standing and C.I. This course is a PhD seminar on using theory in information systems research.

*BA-Management Inform. System*

**LAE 5195. CFWP Teacher Consultant**

3(3,0). PR: C.I. This course is designed for Fellows of the CFWP Summer Institute who will plan, practice, and present writing inservice components to public schools.

*ED-Teaching & Learning Princ*

**LAE 5295. Writing Workshop I**

1-3(1-3,0). PR: C.I. Students will engage in exploration and practice of effective writing strategies. May include teaching small groups of students. May be repeated for credit.

*ED-Teaching & Learning Princ*

**LAE 5319. Methods of Elementary School Language Arts**

3(3,0). PR: EDG 4323. Principles, procedures, organization and current practices in reading, writing, listening, and talking.

*ED-Teaching & Learning Princ*

**LAE 5337. Literacy Strategies for Middle and Secondary Teaching**

3(3,0). PR: EDG 6236 or C.I. Designed to assist teachers and graduate students in understanding the adolescent learner. This course will examine theory, strategies, research, resources and implementation options for effective middle and secondary literacy programs.

*ED-Teaching & Learning Princ*

**LAE 5338. Teaching Writing in Middle and High School**

3(3,0). PR: EDG 6236 or C.I. Techniques and methods in teaching dialects, semantics, and the various grammars within the context of writing.

*ED-Teaching & Learning Princ*

**LAE 5346. Methods of Teaching English Language Arts**

3(3,0). PR: EDG 6236 or C.I. Designed for alternative certification and Masters of Arts students to explore the strands, methods and materials related to school curriculum in teaching English.

*ED-Teaching & Learning Princ*

**LAE 5367. English Composition and Literature for Teachers of Advanced Placement**

3(3,0). PR: Graduate status or senior standing, and C.I. A two-week summer institute for secondary school teachers preparing to teach advanced placement courses.

*CAH-English*

**LAE 5415. Children's Literature in Elementary Education**

3(3,0). Survey of children's literature: criteria for selection according to literary elements and child development needs. Methods for presenting to children; integrating literature with elementary curricula.

*ED-Teaching & Learning Princ*

**LAE 5465. Literature for Adolescents**

3(3,0). PR: Senior standing or C.I. Selecting and evaluating books for adolescents with emphasis on the use of literature in the development of young people.

*ED-Teaching & Learning Princ*

**LAE 5495. Assessing Writing**

3(3,0). PR: C.I. Students will explore a variety of strategies for assessing students' writing including holistic scoring, primary trait scoring, and portfolio assessment.  
*ED-Teaching & Learning Princ*

**LAE 6296. Writing Workshop II**

3(3,0). PR: Writing Workshop I or C.I. Designed for teachers who have completed a previous writing workshop course. Includes history, theory, research, and strategies for teaching writing.  
*ED-Teaching & Learning Princ*

**LAE 6366. Studies in Adolescent Literature**

3(3,0). PR: LAE 4464, LAE 5465, or C.I. Analysis of major works in genre, examination of criticism, instructional strategies, and research in teaching adolescent literature.  
*ED-Teaching & Learning Princ*

**LAE 6417. Investigation in Children's Literature**

3(3,0). PR: A previous survey course in children's literature. Learning through the utilization of children's literature, literature analysis and evaluation, storytelling, visual and reference materials.  
*ED-Teaching & Learning Princ*

**LAE 6616. Trends in Language Arts Education**

3(3,0). PR: Basic Teacher Certificate or C.I. Historical development and trends; English usage systems; materials; instructional strategies.  
*ED-Teaching & Learning Princ*

**LAE 6637. Research in Teaching English**

3(3,0). Examination and interpretation of major research in English education. Design of models for research in language instruction in secondary schools.  
*ED-Teaching & Learning Princ*

**LAE 6792. Teacher Researcher**

3(3,0). PR: C.I. Theory, strategies, and research methodologies for teachers studying teaching and learning in classrooms.  
*ED-Teaching & Learning Princ*

**LAE 6936. Seminar in Language Arts Education**

3(3,0). PR: Graduate standing or C.I. Provides classroom teachers with opportunities to conduct in-depth explorations of timely topics related to teaching language and literacy.  
*ED-Teaching & Learning Princ*

**LAH 5713. Colloquium in U.S.-Latin American Relations**

3(3,0). PR: Graduate status or senior standing or C.I. The course will analyze U.S.-Latin American relations from an historical perspective. It will be presented through readings and discussion of selected materials.  
*CAH-History*

**LAH 6936. Seminar in Latin American History**

3(3,0). Research seminar in selected topics in Latin American history. May be repeated for credit only when course content is different.  
*CAH-History*

**LEI 6443. Recreation**

3(2,1). A comprehensive study of public, private, and school recreation programs.  
*ED-Teaching & Learning Princ*

**LIN 5137. Linguistics**

3(3,0). PR: Graduate status or senior standing or C.I. Modern linguistic theories and studies focusing on language acquisition and development, contemporary American English, semantics, and para-linguistics.  
*CAH-English*

**LIN 5675. English Grammar and Usage**

3(3,0). PR: Graduate status or senior standing or C.I. An overview of modern grammar, including structural, transformational and rhetorical grammar, along with an examination of controversial usage.  
*CAH-English*

**LIN 6932. Problems in Linguistics**

3(3,0). PR: LIN 5137. Study of the application of linguistics to various aspects of teaching and communication.  
*CAH-English*

**LIT 5028. Form and Theory of Short Story**

3(3,0). PR: Graduate status or senior standing or C.I. Evolving forms and theories of short fiction and the implications of form and theory.  
*CAH-English*

**LIT 5269. Nineteenth-Century Essays**

3(3,0). PR: Graduate status or senior standing or C.I. English non-fiction prose of the 19th century.  
*CAH-English*

**LIT 5309. Popular Culture and Media**

3(3,0). PR: Graduate status or senior standing or C.I. Study of contemporary media and the literature of popular culture.  
*CAH-English*

**LIT 5366. The Romantic Revolt (19th Century Literature)**

3(3,0). PR: Graduate status or senior standing or C.I. The romantic revolt in poetry and prose; English, American and Continental literature from 1798 to 1832.  
*CAH-English*

**LIT 5387. Captives, Housewives, and Coquettes**

3(3,0). PR: Graduate status or senior standing or C.I. Course considers early American women's literature from 17th to 19th centuries.  
*CAH-English*

**LIT 5389. Studies in Gender and Fiction Writing**

3(3,0). PR: Graduate status or senior standing or C.I. Graduate study of gender's implications for teaching and practice of fiction writing.  
*CAH-English*

**LIT 5556. Advanced Feminist Theories**

3(3,0). PR: Graduate status or senior standing or C.I. Graduate level Feminist Theories from "French Feminism" to "Critical Race Theories".  
*CAH-English*

**LIT 6009. Literary Genres**

3(3,0). PR: Graduate standing. Provenance, structure, and critical problems in a specific genre such as tragedy, the epic, the novel, or the lyric. May be repeated for credit only when course content is different.

*CAH-English*

**LIT 6039. Studies in Contemporary Poetry**

3(3,0). PR: Graduate standing in MFA Creative Writing program or C.I. English language poetry from 1945 to the present. Emphasis on American poets, but others such as English or Australian will be included.

*CAH-English*

**LIT 6097. Studies in Contemporary Fiction**

3(3,0). PR: Graduate standing in MFA in Creative Writing program or C.I. Fiction in the last 20 years in the United States and Britain.

*CAH-English*

**LIT 6105. World Literature**

3(3,0). PR: Graduate standing. Study of the influence on British and American literature of selected foreign works read in translation. May be repeated for credit only when course content is different.

*CAH-English*

**LIT 6246. Major Authors**

3(3,0). PR: Graduate standing. Study of a single author or of two or three associated authors, with emphasis on biography, bibliography, and style. May be repeated for credit only when course content is different.

*CAH-English*

**LIT 6365. Movements in Literature**

3(3,0). PR: Graduate standing. Study of a movement such as naturalism, romanticism, or classicism, or of a literary period such as the Baroque or the Southern Renaissance. May be repeated for credit only when course content is different.

*CAH-English*

**LIT 6435. Rhetoric of Science**

3(3,0). PR: Graduate standing in English or C.I. Rhetorical analysis of traditional scientific texts and critically examine the discourse of technology.

*CAH-English*

**MAA 5210. Topics in Advanced Calculus**

4(4,0). PR: MAA 4226 or equivalent, graduate status or senior standing, or C.I. Topics in multivariable calculus, including limits, continuity, integration, differentiation, Taylor's theorem, inverse and implicit function theorems

*COS-Mathematics*

**MAA 6238. Measure and Probability**

3(3,0). PR: MAA 5210 or C.I. Measure and integration, probability measures, random variables, distribution and characteristic functions. Convergence in LP, probability, distribution and with probability one.

*COS-Mathematics*

**MAA 6306. Real Analysis**

3(3,0). PR: MAA 5210. Sets, function spaces, Lebesgue measure, Lebesgue-Stieltjes measure, measurable functions, convergence notions, general measure and integration, Radon-Nikodym theorem.

*COS-Mathematics*

**MAA 6404. Complex Analysis**

3(3,0). PR: MAA 6405, MAP 4307, MAA 4226, or C.I. Review of complex variable theory; advanced topics chosen from conformal mapping and its applications, boundary behavior, numerical techniques; singular integrals.

*COS-Mathematics*

**MAA 6405. Complex Variables**

3(3,0). PR: MAA 4226, MAP 4307, and graduate standing or C.I. Analytic functions. Harmonic functions. Integration in the complex plane. Laurent series. Residue calculus. Inversion of Laplace transformations. Maximum Modulus Principle. Conformal mappings.

*COS-Mathematics*

**MAA 6416. Topology**

3(3,0). PR: MAA 4226, MTG 4302. Topological spaces and continuous functions, connectedness and compactness, separation axioms, metrization theorems, Baire spaces and dimension theory, the fundamental group and homotopy paths.

*COS-Mathematics*

**MAA 6506. Functional Analysis**

3(3,0). PR: MAA 4226 or C.I. Normed vector spaces, linear operators, Baire Category theorem, Banach fixed point theorem, Hahn-Banach theorem and applications, open mapping and closed graph theorem with applications, Hilbert space, Gateaux and Frechet.

*COS-Mathematics*

**MAA 6508. Hilbert Spaces with Applications**

3(3,0). PR: MAP 2302, MAS 3106, or C.I. Normed and inner product spaces; Hilbert spaces; orthonormal systems; linear operators and spectral decomposition; applications to differential and integral equations.

*COS-Mathematics*

**MAA 6531. Analysis of Manifolds**

3(3,0). PR: Matrix or Linear Algebra, MAA 4226 or MAA 5210, or C.I. Derivatives as linear transformations, inverse function theorem, manifolds and integration of real-valued functions on manifolds, wedge products, differential forms, vector analysis as a specific case.

*COS-Mathematics*

**MAA 7239. Asymptotic Methods in Mathematical Statistics**

3(3,0). PR: MAP 6111 or C.I. Large sample theory, martingale sequences, probability measures on metric spaces, absolute continuity and singularity, Hellinger distance, functions of statistics, asymptotic theory of estimation and applications.

*COS-Mathematics*

**MAD 5205. Combinatorics and Graph Theory II**  
3(3,0). PR: MAD 4203, graduate status or senior standing, or C.I. Polya's theory of counting; Latin squares and rectangles; block designs; coding theory; probabilistic methods; hypergraphs; applications.  
*COS-Mathematics*

**MAD 6309. Advanced Graph Theory I**  
3(3,0). A seminar devoted mainly to reading papers and presenting their content. Advanced areas of graph theory will be covered. Primarily for PhD students in Mathematics and Computer Science.  
*COS-Mathematics*

**MAD 6608. Finite Fields and Coding Theory**  
3(3,0). PR: MAS 5311 or C.I. General theory of fields, existence, construction and implementation of finite fields, polynomials over GF(pn), solving equations: emphasizing fields of characteristic 2.  
*COS-Mathematics*

**MAE 5318. Current Methods in Elementary School Mathematics**  
3(3,0). PR: EDG 4323. Strategies of instruction of computation and concepts of number, geometry, and measurement; instructional materials. (Meets Elementary Education certification requirements.)  
*ED-Teaching & Learning Princ*

**MAE 5327. Teaching Middle School Mathematics**  
3(3,0). PR: EDG 6236 or C.I. Students will develop skills in planning and delivering mathematics instruction in grades 5-9. The use of technology, cooperative learning, ESOL, and manipulatives is considered.  
*ED-Teaching & Learning Princ*

**MAE 5336. Current Methods in Secondary School Mathematics**  
3(3,0). PR: EDG 4323 or EDG 6236 or C.I. Required special methods course for mathematics 6-12 certification. Assessment, curriculum, technology, practical classroom ideas and activities.  
*ED-Teaching & Learning Princ*

**MAE 5935. Post-Secondary Mathematics**  
3(3,0). PR: Graduate status or senior standing or C.I. The course will focus on issues which are faced by teachers of collegiate mathematics. Topics will be selected from teaching issues, program issues, and other issues.  
*COS-Mathematics*

**MAE 6145. Mathematics Curriculum, K-12**  
3(3,0). PR: At least 6 semester hours of graduate credit in mathematics education or C.I. Development of historical and current issues and forces in mathematics curriculum. New mathematics programs and contemporary curricular issues will be emphasized.  
*ED-Teaching & Learning Princ*

**MAE 6337. Teaching Algebra in the Secondary School**  
3(3,0). PR: MAE 3330 or C.I. Addresses specific techniques for developing algebra skills for pre-algebra through precalculus algebra needs. Logical deductions, problem solving, computer applications, and innovative methods are explored.  
*ED-Teaching & Learning Princ*

**MAE 6338. Teaching Geometry in the Secondary School**  
3(3,0). PR: MAE 3330 or C.I. This course addresses specific techniques for developing geometry skills beginning in the general mathematics classes of grade 6 through the high school geometry course.  
*ED-Teaching & Learning Princ*

**MAE 6517. Diagnosis/Remediation of Difficulties in Mathematics for the Classroom Teacher**  
3(3,0). PR: Basic Teacher Certificate or C.I. The study of techniques for diagnosis and remediation of difficulties in mathematics.  
*ED-Teaching & Learning Princ*

**MAE 6641. Problem Solving and Critical Thinking Skills**  
3(2,1). PR: Regular Certificate or C.I. Development of procedures and practices necessary to implement critical thinking skills and problem solving techniques in the schools.  
*ED-Teaching & Learning Princ*

**MAE 6656. Using Technology in the Instruction of K-12 Mathematics**  
3(3,0). PR: C.I. The application of computer technology to mathematics instruction including calculators, CAI, CMI, application software, simulators, and video disc technology.  
*ED-Teaching & Learning Princ*

**MAE 6899. Seminar in Teaching Mathematics**  
3(3,0). PR: Six semester hours of graduate credit in mathematics education. Development of historical and current issues, forces, and individuals and their impact on the teaching of mathematics K-12. Consideration of advanced instructional techniques. May be repeated for credit.  
*ED-Teaching & Learning Princ*

**MAE 7640. History of Mathematics Education**  
3(3,0). PR: Doctoral standing. Study of issues and forces that have shaped mathematics education including policies, classroom practices, curriculum development, instructional materials, technology and assessment of learning.  
*ED-Teaching & Learning Princ*

**MAE 7795. Seminar on Research in Mathematics Education**  
3(3,2). PR: Doctoral standing.  
*ED-Teaching & Learning Princ*

**MAN 5021. Management Foundations**  
1.5(1.5,0). PR: Graduate standing or C.I. Theory and practice of managing organizations to include planning, organizational theory, human behavior, and control.  
*BA-Management*

**MAN 5050. Management Concepts**  
2(2,0). PR: Acceptance in MBA program. Theory and practice of managing organizations to include planning, organizational theory, human behavior, and control.  
*BA-Management*

**MAN 5867. Small Business Institute**

3(3,0). PR: C.I. Hands-on small business consulting course. Students are assigned teams and work with a local small business.

*BA-Management*

**MAN 6116. Managing A Diverse Workforce**

3(3,0). PR: MAN 6285. Course designed to provide students with an understanding of managing a diverse workforce.

*BA-Management*

**MAN 6158. Human Resources Management Issues**

3(3,0). PR: MAN 6305 or C.I. A course providing advanced study in selected topics of current interest in human resource management.

*BA-Management*

**MAN 6244. Organizational Behavior**

1.5(1.5,0). PR: Graduate standing. Study of behavior of individuals, groups, and the interactions between them. Students will be exposed to the theories behind the "people" skills for effective management.

*BA-Management*

**MAN 6245. Organizational Behavior and Development**

3(3,0). PR: CBA master's program of study foundation core. The analysis of human behavior in organizations in terms of the individual, small group, intergroup relationships, and the total organization.

*BA-Management*

**MAN 6285. Change Management**

3(3,0). PR: Graduate standing or C.I. Course designed to familiarize students with change management processes and interventions.

*BA-Management*

**MAN 6286. Strategic Innovation**

3(3,0). PR: Graduate standing or C.I. An in-depth examination of strategic and innovation processes as they relate to the management of emerging technologies from invention to commercialization.

*BA-Management*

**MAN 6296. Executive Leadership**

3(3,0). PR: Admission to the Executive MBA program. A review of the theory, research, and practice of leadership in organizations. Special attention to contemporary leadership issues, including transactional and transformational leadership.

*BA-Management*

**MAN 6299. Creative and Innovative Management**

3(3,0). PR: Graduate standing or C.I. This course examines the emerging theories and practices related to creative and innovative management. It combines the creativity of new concepts, new ideas, new directions, and the like with their innovative implementation in a management context.

*BA-Management*

**MAN 6305. Human Resources Management**

3(3,0). PR: Graduate standing or C.I. Course is designed as an overview of human resources practices, techniques and strategies.

*BA-Management*

**MAN 6311. Advanced Topics in Human Resources Management**

3(3,0). PR: MAN 6305 or C.I. An in-depth analysis of current human resource issues related to the attraction, management, and retention of human capital.

*BA-Management*

**MAN 6323. Human Resources Information Systems**

3(3,0). PR: MAN 6305 or C.I. Planning, designing, selecting, implementing, and maintaining human resource information systems.

*BA-Management*

**MAN 6325. Applied Research Tools**

3(3,0). PR: MAN 6305 and MAN 6285. Development of applied qualitative and quantitative research skills for collecting, analyzing and reporting data to organizations, within the context of managing human resources and change.

*BA-Management*

**MAN 6385. Strategic Human Resources Management**

3(3,0). PR: MAN 6305 or C.I. Examination of the strategic orientation of human resources management and the development of the human resources architecture aligned with the organization's strategy and task environment.

*BA-Management*

**MAN 6395. Leadership Development and Coaching**

3(3,0). PR: Graduate standing or C.I. Course is designed to prepare students to understand the nature and role of leadership development with an emphasis on coaching.

*BA-Management*

**MAN 6446. Applied Negotiations in Management**

1.5(1.5,0). PR: Graduate standing. The study and application of negotiation theories and processes to human resource management practices and other management activities in work organizations.

*BA-Management*

**MAN 6448. Conflict Resolution and Negotiation**

3(3,0). PR: Graduate standing or C.I. Theory and processes of negotiation in a variety of settings, with relevance to the broad spectrum of negotiation faced by managers.

*BA-Management*

**MAN 6449. Alternative Dispute Resolution**

3(3,0). PR: Graduate standing or C.I. Theory and practice of conciliation, mediation, fact finding, and arbitration as alternatives to business litigation.

*BA-Management*

**MAN 6515. Research and Development Management**

3(3,0). PR: Graduate standing and MAN 5050. An examination of the function of research and development and the impact of technological innovation on our economic and social systems.

*BA-Management*

**MAN 6721. Applied Strategy and Business Policy**

3(3,0). PR: MBA Professional Core I and taken in last semester of program. This capstone course integrates the various functional disciplines in business administration. It focuses on the theories and frameworks in the field of strategic management.

*BA-Management*

**MAN 6915. Applied Field Project**

3(3,0). PR: MAN 6325 or C.I. Supervised field research project addressing a specific organizational problem or approved practicum within an organization.

*BA-Management*

**MAN 7075. Foundations of the Management Discipline**

3(3,0). PR: PhD standing. Presents seminal contributions that have profoundly affected the evolution of the management discipline, and examines social dynamics that influence the development of ideas.

*BA-Management*

**MAN 7207. Organization Theory**

3(3,0). PR: Doctoral status. Study of impact of environment, technology, size and innovation on organization structure, functions and development.

*BA-Management*

**MAN 7275. Organizational Behavior**

3(3,0). PR: Doctoral standing or C.I. In-depth review of the classic and modern organizational behavior research literature, which deals with management of individual and group behavior in organizations.

*BA-Management*

**MAN 7306. Seminar in Human Resources Management**

3(3,0). PR: Graduate standing or C.I. Course provides a graduate level overview of theory and research in human resources management. Topics covered include human resources strategy, legal issues, staffing, training, performance appraisal and compensation.

*BA-Management*

**MAN 7776. Business-level Strategic Management**

3(3,0). PR: Admission to doctoral program and C.I. In-depth review of the classic and modern business-level strategy research literature, which deals with topics such as competitive strategy, industry analysis and the strategy process.

*BA-Management*

**MAN 7777. Corporate-level Strategic Management**

3(3,0). PR: Admission to doctoral program and C.I. In-depth review of the classic and modern corporate-level strategy research literature, which deals with topics such as diversification, cooperative alliances and acquisitions strategies.

*BA-Management*

**MAN 7900. Directed Readings in Management**

3(3,0). PR: Admission to doctoral program and C.I. Directed readings in the area of Management concentration, as determined by the student's doctoral study advisory committee. May be repeated for credit.

*BA-Management*

**MAN 7916. Seminar in Management Research**

Var. PR: Admission to PhD program or C.I. Examines empirical and theoretical research in selected management topics. Specific topics may not be repeated for credit. Maximum of 15 hours toward degree. May be repeated for credit only when course content is different.

*BA-Management*

**MAP 5106. Introduction to Quantitative Aspects of Modeling and Simulation**

3(3,0). PR: MAC 2253, graduate status or senior standing, or C.I. An introduction to calculus, matrix algebra, probability and statistics, and high level programming languages. A student who has mastered this content does not have to take this course.

*COS-Mathematics*

**MAP 5117. Mathematical Modeling**

3(3,0). PR: STA 4321, MAP 4363, graduate status or senior standing, or C.I. Introduction to modeling in industrial and scientific applications; techniques for studying statistical and deterministic models.

*COS-Mathematics*

**MAP 5336. Ordinary Differential Equations and Applications**

3(3,0). PR: MAP 2302, and graduate status or senior standing or C.I. Existence and uniqueness of solutions of differential equations, systems of ordinary differential equations, autonomous systems, phase plane analysis, stability, bifurcations.

*COS-Mathematics*

**MAP 5396. Splines and Data Fitting**

3(3,0). PR: MAS 3106, MAS 3105, MAP 2302, and graduate status or senior standing or C.I. Univariate splines and their application to data fitting. Applications to regression analysis, differential and integral equations. Algorithms to use different types of splines in computation.

*COS-Mathematics*

**MAP 5404. Mathematical Foundations for Industrial Engineering and Operations**

3(3,0). PR: MAP 2302, ESI 5219 or equivalent, ESI 4312, and graduate status or senior standing or C.I. Methods of proof, set theory; basic elements of topology, real analysis, graph theory, and matrix analysis.

*COS-Mathematics*

**MAP 5426. Special Functions**

3(3,0). PR: MAP 2302, and graduate status or senior standing or C.I. Series and integral representations, generating functions, recurrence relations and orthogonality properties of the special functions. Emphasis on Bessel, Legendre and hypergeometric functions.

*COS-Mathematics*

**MAP 5435. Advanced Mathematics for Engineers**

3(3,0). PR: MAP 2302, and graduate status or senior standing or C.I. Linear Algebra and matrix methods, ordinary differential equations, Fourier series, partial differential equations, numerical methods for differential equations, and applications to engineering.

*COS-Mathematics*

**MAP 5514. Linear and Nonlinear Waves I**

3(3,0). PR: MAP 2302, MAP 4363, and graduate status or senior standing, or C.I. Equations of motion in inviscous and viscous fluids, energy equation and energy flux, linear theory of gravity and capillary-gravity waves, variational principles for water waves.

*COS-Mathematics*



**MAP 5931. Research Seminar**

1(1,0). PR: Graduate status or senior standing or C.I. Four instructors will introduce the students to a research area by presenting necessary background and presenting current investigations. Different branches of mathematics will be presented for a sense of diversity.

*COS-Mathematics*

**MAP 6111. Mathematical Statistics**

3(3,0). PR: MAA 6238 Measure and Probability or C.I. Strong laws of large numbers, consistency and asymptotic normality, complete and sufficient statistics, maximum likelihood and least squares, optimal estimators, hypothesis testing.

*COS-Mathematics*

**MAP 6118. Introduction to Nonlinear Dynamics**

3(3,0). PR: MAP 5336, PHY 2048 or equivalent, or C.I. Nonlinear differential equations; bifurcation theory; Hamiltonian dynamics; integrable systems and breakdown of integrability; chaos in conservative and dissipative systems.

*COS-Mathematics*

**MAP 6207. Optimization Theory**

3(3,0). PR: MAA 4226 or C.I. Lagrangian function and duality, Kuhn-Tucker theorem, quadratic programming and Wolfe's theorem, Griffith and Stewart's method, search methods for unconstrained optimization.

*COS-Mathematics*

**MAP 6356. Partial Differential Equations**

3(3,0). PR: MAP 4364 or MAP 5435 or equivalent. First and second order linear equations; classification; analytical methods including Green's functions and integral representations; introduction to nonlinear equations; applications.

*COS-Mathematics*

**MAP 6385. Applied Numerical Mathematics**

3(3,0). PR: MAP 5117, MAA 5210, graduate standing, or C.I. Numerical linear algebra, Gaussian elimination, Gauss-Seidel iteration, optimization procedures, numerical solution of ordinary differential equations.

*COS-Mathematics*

**MAP 6398. Multivariate Splines and Surface Fitting**

3(3,0). PR: MAP 5396 or C.I. Approximation of functions of several variables, tensor product splines, theory of multivariate splines, box splines, surface fitting, applications to statistics, computer graphics.

*COS-Mathematics*

**MAP 6407. Applied Mathematics I**

3(3,0). PR: MAP 2302, MAS 3105, MAA 4226, MAP 4307, MAP 4363, or C.I. Linear functionals, calculus of variations, Hamilton's principle, Rayleigh-Ritz method, Sturm-Liouville theory, Green's functions for ordinary differential equations, Volterra and Fredholm integral equations.

*COS-Mathematics*

**MAP 6408. Applied Mathematics II**

3(3,0). PR: MAP 2302 and MAA 6405 or equivalent. Asymptotic series, asymptotic expansion of integrals, regular and singular perturbation expansions, boundary layer, multiple scales, WKB theory.

*COS-Mathematics*

**MAP 6419. Advanced Transform Methods**

3(3,0). PR: MAP 6424 or C.I. Fourier analysis and sliding-window Fourier transform, sampling theory and its applications in signal analysis and optics, Radon transforms, the technique of back projection.

*COS-Mathematics*

**MAP 6420. Generalized Functions**

3(3,0). PR: MAA 6506 or C.I. Spaces of test functions and their duals, calculus of distributions, convolution and tempered distributions, Fourier transforms of distributions, and applications to PDEs.

*COS-Mathematics*

**MAP 6421. Integral Equations**

3(3,0). PR: MAA 6405 or C.I. Successive approximations, Volterra equations, Fredholm theory, Hilbert-Schmidt theory, Neumann series, singular integral equations, the Riemann-Hilbert problem.

*COS-Mathematics*

**MAP 6424. Transform Methods**

3(3,0). PR: MAA 6405 or C.I. Laplace, Fourier, Hankel, and other integral transforms, inversion theorems; the Z transform; applications to physical problems.

*COS-Mathematics*

**MAP 6445. Approximation Techniques**

3(3,0). PR: MAA 4227, MAA 5210 or C.I. Normed linear spaces; Weierstrass approximation theorem; Chebyshev approximation by polynomials; trigonometric approximation; orthogonal expansions and least squares approximations.

*COS-Mathematics*

**MAP 6463. Doubly Stochastic Measures**

3(3,0). PR: MAA 6506, MAA 6416, MAP 6111, MAA 6238, or C.I. Doubly stochastic matrices, Birkhoff's theorem, double stochastic measures, Douglas-Linden-Strauss Theorem, copulas, Frechet bounds, dependence of random variables, Markov operators.

*COS-Mathematics*

**MAP 6465. Wavelets and Their Applications**

3(3,0). PR: MAP 4364, MAA 6508, or C.I. Continuous wavelet transforms, discrete wavelet transforms, frames, Zak transform, multi-resolution analysis, orthonormal bases of compactly supported wavelets, spline wavelets.

*COS-Mathematics*

**MAP 6507. Wave Propagation through Random Media**

3(3,0). PR: MAP 2302, EEL 5542, or C.I. Development of mathematical models for laser communications and laser radar in atmospheric turbulence. Free-space propagation of Gaussian beams and classical theories of propagation.

*COS-Mathematics*

**MAP 7119. Advanced Nonlinear Dynamics**

3(3,0). PR: MAP 6118 or C.I. Solitons, inverse scattering transform, breakdown or integrability, analytic structure of dynamical systems, fractal aspects of turbulence.

*COS-Mathematics*

**MAP 7357. Advanced Topics in Partial Differential Equations**

3(3,0). PR: MAP 6356 or C.I. Variational techniques, perturbation and asymptotic methods, hyperbolic systems, Lie group methods, parabolic, elliptic, or free boundary value problems, spectral analysis.

*COS-Mathematics*

**MAP 7386. Numerical Solutions of PDE**

3(3,0). PR: MAP 6356, MAP 6385 or C.I. Numerical solution of linear and nonlinear partial differential equations of parabolic, elliptic and hyperbolic type. Solution of PDE using finite difference and spectral methods.

*COS-Mathematics*

**MAR 6077. Contemporary Marketing Problems**

3(3,0). PR: Graduate standing, MAR 6816, or C.I. Analysis of contemporary marketing problems resulting from social, economic, and political developments.

*BA-Marketing*

**MAR 6151. Global Marketing**

3(3,0). PR: CBA master's program of study foundation core. Comprehensive study of marketing transactions and management activities from a global perspective.

*BA-Marketing*

**MAR 6406. Sales Management and Control**

3(3,0). PR: Graduate standing. Designed to provide an analysis of the sales and management process. Topics covered include selection and training, compensation, behavioral issues and sales planning, evaluation, and control.

*BA-Marketing*

**MAR 6456. Advanced Industrial Marketing Management**

3(3,0). PR: Graduate standing. This course provides a comprehensive introduction to the distinctive characteristics of industrial markets. The course reviews what is known about organizational buying behavior which provides the foundation necessary to formulate marketing strategies.

*BA-Marketing*

**MAR 6616. Marketing Research Methods**

3(3,0). PR: Graduate standing, ECO 6416. Investigation of primary research methods used to generate information for marketing decision makers. Problem definition, research design, data collection, data processing, statistical interpretation, and communication of research results.

*BA-Marketing*

**MAR 6646. Marketing Engineering**

3(3,0). PR: CBA master's program of study foundation core. Acquire knowledge about a variety of planning and decision models used to creatively solve marketing problems.

*BA-Marketing*

**MAR 6722. Digital Marketing Management**

3(3,0). PR: CBA master's program of study foundation core. Understand how digital marketing differs from conventional marketing. Develop an ability to formulate digital marketing applications and build viable digital marketing strategies.

*BA-Marketing*

**MAR 6729. Marketing of High Technology Products**

3(3,0). PR: CBA master's program of study foundation core. Understand high technology marketing issues. Acquire concepts and tools to develop high technology business models. Develop insights into branding, new product development, forecasting and CRM.

*BA-Marketing*

**MAR 6816. Strategic Marketing Management**

3(3,0). PR: MBA Professional Core I. Marketing competitive strategy formulation with respect to product, pricing, promotion and distribution. Course aims at developing strategic thinking, functional marketing expertise and analytical skills.

*BA-Marketing*

**MAR 6849. Services Marketing**

3(3,0). PR: Graduate standing. Marketing in services industries is the focus of study with particular emphasis on unique aspects of services marketing, the service marketing mix, and the implementation of service strategies.

*BA-Marketing*

**MAR 7575. Seminar in Consumer Behavior**

3(3,0). PR: ECO 7423 and admission to the PhD program. Provide doctoral students with a broad exposure to the literature of consumer behavior theories and methods.

*BA-Marketing*

**MAR 7626. Multivariate Analysis for Business Research**

3(3,0). PR: ECO 7423 or Equivalent, C.I. Provides PhD students an in-depth treatment of multivariate analysis applications to marketing and business research problems.

*BA-Marketing*

**MAR 7638. Seminar in Marketing Theory, Scaling, and Measurement**

3(3,0). PR: ECO 7423 and admission to the PhD program. Provide doctoral students with a foundation in marketing theory, scaling, and measurement.

*BA-Marketing*

**MAR 7666. Seminar in Marketing Models**

3(3,0). PR: ECO 7423 and admission to the PhD program. Course provides an overview of mathematical models utilized in Marketing contexts.

*BA-Marketing*

**MAR 7807. Seminar in Marketing Strategy**

3(3,0). PR: ECO 7423 and admission to the PhD program. Provide doctoral students with a broad exposure to the literature surrounding marketing strategy and management issues.

*BA-Marketing*

**MAS 5145. Advanced Linear Algebra and Matrix Theory**

3(3,0). PR: MAS 3105, and graduate status or senior standing or C.I. LU and LDU decompositions, linear spaces, inner product spaces, systems of linear equations, eigenvalues and canonical forms, variational principles and applications.

*COS-Mathematics*

**MAS 5311. Abstract Algebra with Applications**

3(3,0). PR: MAS 4301 or undergraduate abstract algebra, and graduate status or senior standing or C.I. Group actions, the class equation, Sylow Theorems, polynomial rings, Euclidian domains, principal ideal domains, field extensions, modules, and semi-simple rings.

*COS-Mathematics*

**MAS 6147. Multilinear Algebra**

3(3,0). PR: MAS 5145 or C.I. Algebraic theory of tensor and exterior products of finite and infinite dimensional vector spaces and linear transformations. Some category theory will be discussed. Applications to other areas of algebra will be presented.

*COS-Mathematics*

**MAT 5711. Scientific Computing**

3(3,0). PR: MAC 2313, MAP 2302, graduate status or senior standing, or C.I. Basic programming skills using Mathematica, Maple, Matlab, or Java in solving basic scientific computing problems; preparing students for advanced computational methods and algorithms.

*COS-Mathematics*

**MCB 5205. Infectious Processes**

3(3,0). PR: MCB 3020C or C.I. Discussion of current theories of the infectious process and the response of host cells and tissue to infection.

*COM-Molecular & Microbiology*

**MCB 5208. Cellular Microbiology: Host-Pathogen Interactions**

3(3,0). PR: Graduate standing, PCB 3522. Examination of the molecular details of host-pathogen interactions. Key areas of cell biology will be considered in relation to microbial pathogenesis.

*COM-Molecular & Microbiology*

**MCB 5225. Molecular Biology of Disease**

3(3,0). PR: Graduate standing or C.I. An in-depth study of the molecular biological mechanisms of diseases in experimental animal models and human populations.

*COM-Molecular & Microbiology*

**MCB 5505. Molecular Virology**

3(3,0). PR: Graduate standing or C.I. An in-depth overview of the fundamental aspects and current concerns in modern virology including HIV, tumor viruses Prion disease, virus-host interaction, genome replication and pathogenesis.

*COM-Molecular & Microbiology*

**MCB 5527. Genetic Engineering and Biotechnology**

3(3,0). PR: PCB 3522 and PCB 4524 or C.I. Principles of Genetic Engineering/Biotechnology in Bacteria, Yeast, Viral, Mammalian, Non-mammalian systems, Plants, including human gene therapy, novel pharmaceuticals, recombinant proteins will be discussed in-depth.

*COM-Molecular & Microbiology*

**MCB 5654. Applied Microbiology**

3(3,0). PR: MCB 3020C or C.I. Microbial biochemistry of industrial processes including: economics, screening, scale up, quality control and applied genetics.

*COM-Molecular & Microbiology*

**MCB 5722C. Methods in Biotechnology**

4(2,4). PR: Graduate standing. A laboratory course that will train graduate students in fluorescence and luminescence-based assays used in biopharmaceutical industry for target validation.

*COM-Molecular & Microbiology*

**MCB 5932. Current Topics in Molecular Biology**

Variable. PR: Graduate standing or C.I. Selected current research topics from the primary literature reflecting recent advances in molecular biology. May be repeated for credit.

*COM-Molecular & Microbiology*

**MCB 6226. Molecular Diagnostics**

3(3,0). PR: PCB 3522, PCB 4524 and MCB 5225 or C.I. A course in basic laboratory skills used in molecular genetic or clinical diagnostic laboratories for detecting genetic diseases.

*COM-Molecular & Microbiology*

**MCB 6417C. Microbial Metabolism**

3(3,0). PR: C.I. Relationship between microbial metabolism and principal cellular activities, emphasizing transport, respiration, differentiation, and synthesis.

*COM-Molecular & Microbiology*

**MCB 6720. Practice of Biomolecular Science**

2(2,0). PR: Graduate standing. Provides MS and PhD students with an introduction to the practice of Biomolecular Science. Graded S/U.

*COM-Molecular & Microbiology*

**MHS 5005. Introduction to the Counseling Profession**

3(3,0). PR: Completion of Phase II of Education Professional Preparation or C.I. Overview of the philosophy, organization, administration, and roles of counselors in various work settings.

*ED-Child, Family & Comm Sci*

**MHS 6020. Mental Health Care Systems**

3(3,0). PR: MHS 5005 or C.I. Foundations of mental health counseling including organizational, administration, fiscal, and accountability structures.

*ED-Child, Family & Comm Sci*

**MHS 6070. Diagnosis and Treatment in Counseling**

3(3,0). PR: MHS 6400, MHR 6401. Examines diagnosis in the assessment and treatment of mental disorders and the use of the DSM IV. Disorders reviewed with emphasis on symptoms and implications for treatment.

*ED-Child, Family & Comm Sci*

**MHS 6220. Individual Psychoeducational Testing I**

3(3,0). An overview of appraisal instruments for individual testing with emphasis on administration, scoring, and interpretation. Designed for practitioners interested in understanding individual assessment.

*ED-Child, Family & Comm Sci*

**MHS 6221. Individual Psychoeducational Testing II**

3(3,1). PR: C.I. Analysis of test theory and practice in administration, scoring, and interpretation of tests assessing achievement, visual-motor and cognitive ability, adaptive behavior, and self-concept.

*ED-Child, Family & Comm Sci*

**MHS 6245. Assessment and Treatment in Addictions**  
3(3,0). PR: Graduate standing or C.I. Application of assessment and treatment models in addictions, and the ethical application of services to support persons with addictions and chemical dependency and their families.  
*ED-Child, Family & Comm Sci*

**MHS 6306. Applied Career Development**  
3(3,0). PR: EDH 6044. A study of career development theories, concepts and models in the delivery of career services in a variety of career development settings.  
*ED-Child, Family & Comm Sci*

**MHS 6307. Applied Career Development II**  
3(3,0). PR: EDH 6044 Career Development; MHS 6306. This course is designed to offer students practical supervised experiences in the delivery of career development services.  
*ED-Child, Family & Comm Sci*

**MHS 6400. Theories of Counseling and Personality**  
3(3,0). PR: MHS 5005 or MHS 6020, EDF 6481, or C.I. Major theories and approaches to counseling, correlating them with counterpart theories of personality and learning.  
*ED-Child, Family & Comm Sci*

**MHS 6401. Techniques of Counseling**  
3(1,2). PR: MHS 6400 or C.I. The nature of counseling and its relationships to theoretical concepts.  
*ED-Child, Family & Comm Sci*

**MHS 6403. Techniques of Play Therapy and Expressive Arts**  
3(3,0). PR: Graduate standing in mental health counseling or related field. This course provides a theoretical foundation for using expressive arts in counseling.  
*ED-Child, Family & Comm Sci*

**MHS 6407. Counseling for Wellness**  
3(3,0). PR: C.I. Introduction to wellness concepts and topics in counseling including spirituality, health, stress research, positive assessment and others.  
*ED-Child, Family & Comm Sci*

**MHS 6420. Counseling Special Populations**  
3(3,0). PR: MHS 5005 or MHS 6020 or C.I. Application of counseling principles with various special populations including multicultural subgroups, persons of abuse, exceptional children, gay and lesbian people, etc.  
*ED-Child, Family & Comm Sci*

**MHS 6421. Foundations of Play Therapy and Play Process**  
3(3,0). PR: Graduate standing in mental health counseling or related field. Theories and application of the principles of play in the counseling process with children.  
*ED-Child, Family & Comm Sci*

**MHS 6422. Theories of Play Therapy and Play Process**  
3(3,0). PR: MHS 6421. This course will provide an overview of different play therapy theories and the application of those in the counseling process.  
*ED-Child, Family & Comm Sci*

**MHS 6424. Applications of Play Therapy with Special Populations**  
3(3,0). PR: Graduate standing in mental health counseling or related field. This course provides an overview of applications of play therapy with specific populations such as groups, parents, families and/or traumatized children.  
*ED-Child, Family & Comm Sci*

**MHS 6430. Family Counseling I**  
3(1,2). PR: MHS 5005 or MHS 6020 or C.I. Presentation of specific family counseling theories. An evolution and current state of the art.  
*ED-Child, Family & Comm Sci*

**MHS 6431. Family Counseling II**  
3(1,2). PR: MHS 6430, EDF 6481, or C.I. Presentation of techniques to work with entrenched, paradoxical, and fixed family systems that pose problems for the family and the counselor.  
*ED-Child, Family & Comm Sci*

**MHS 6433. Developmental Process of the Resilient Family**  
3(3,0). PR: C.I. This course will examine models that focus on the resiliency of families throughout the life cycle and implications in counseling.  
*ED-Child, Family & Comm Sci*

**MHS 6440. Couples Counseling**  
3(3,0). PR: Graduate standing or C.I. Overview of couple counseling theory and technique. In addition the course covers special problems and stressors in the couple relationship.  
*ED-Child, Family & Comm Sci*

**MHS 6450. Addictions Counseling**  
3(3,0). PR: Graduate standing or C.I. Examination within systematic, theoretical framework of the function that a substance, individual, and the environment play in use and abuse of illicit and licit substances.  
*ED-Child, Family & Comm Sci*

**MHS 6465. Counseling Victims and Perpetrators of Family Violence**  
3(3,0). Examination of counseling interventions used with victims and perpetrators of family violence.  
*ED-Child, Family & Comm Sci*

**MHS 6470. Human Sexuality and Relationships**  
3(3,0). A basic course in understanding how human beings form intra- and interpersonal relationships and how sexuality develops.  
*ED-Child, Family & Comm Sci*

**MHS 6500. Group Procedures and Theories in Counseling**  
3(3,0). PR: MHS 6401. This course is designed to give the student an understanding of the role of theories in group counseling as well as the many process applications of groups.  
*ED-Child, Family & Comm Sci*

**MHS 6510. Advanced Group Counseling**

3(1,2). PR: MHS 6500 or C.I. This course is designed to give students practical experience in leading groups. It is also intended to challenge students to explore professional and advanced issues in group counseling.  
*ED-Child, Family & Comm Sci*

**MHS 6600. Consultation, Staffing, and Case Management**

3(2,0). PR: MHS 6500 or C.I. Understanding the counselor's role as consultant and staffing team member. Study of case management procedures.  
*ED-Child, Family & Comm Sci*

**MHS 6702. Ethical & Legal Issues**

3(3,0). PR: C.I. Studies of ethical standards and legal issues in counseling and other human service professions.  
*ED-Child, Family & Comm Sci*

**MHS 6803. Practicum in Counselor Education**

3(3,0). PR: MHS 5005, MHS 6400, MHS 6401, MHS 6500, C.I. Supervised counseling emphasizing competence in (1) individual counseling (2) working with groups (3) tests in educational-career-personal counseling. May be repeated for credit.  
*ED-Child, Family & Comm Sci*

**MHS 6830. Counseling Internship**

1-6(1,1-6). PR: C.I. Supervised placement in setting appropriate for program track. May be repeated for credit.  
*ED-Child, Family & Comm Sci*

**MHS 6930. Current Trends in Counselor Education**

3(3,0). PR: MHS 5005 or 6500 or C.I. Current trends affecting the rapid changes in the counseling field.  
*ED-Child, Family & Comm Sci*

**MHS 7311. Technology Issues in Counselor Education**

3(3,0). PR: Admission to PhD in Education--Counselor Education track. Technology issues in counselor education including ethics, use of on line counseling, on line supervision, and addiction.  
*ED-Child, Family & Comm Sci*

**MHS 7340. Advanced Career Development**

3(3,0). PR: Admission to PhD in Education. An advanced study of career development theories, occupational and educational information, approaches to career decision-making, lifestyle and leisure in the development of the whole person.  
*ED-Child, Family & Comm Sci*

**MHS 7406. Advanced Theories in Counseling**

3(3,0). PR: Admission to PhD program in Education--Counselor Education track. Examination of counseling theories including historical foundations and emerging theories.  
*ED-Child, Family & Comm Sci*

**MHS 7611. Supervision in Counselor Education**

3(3,0). PR: Admission to PhD in Education--Counselor Education track. An examination of the process and various theories of supervision in counselor education.  
*ED-Child, Family & Comm Sci*

**MHS 7700. Professional Issues in Counselor Education**

3(3,0). PR: Admission to PhD program in Education--Counselor Education track. Emphasis on professional issues related to counselor education including teaching, research, and service.  
*ED-Child, Family & Comm Sci*

**MHS 7730. Research Seminar in Counselor Education**

3(3,0). PR: Admission to PhD in Education. An examination of outcome research design, methodological issues and empirical basis of counseling.  
*ED-Child, Family & Comm Sci*

**MHS 7808. Practicum in Counseling Supervision**

3(3,0). PR: Admission to PhD program in Education. Integration of theory and practice in counseling supervision  
*ED-Child, Family & Comm Sci*

**MHS 7840. Internship in Counselor Education**

3(3,0). PR: Admission to PhD program in Education--Counselor Education track. Examine and practice the various roles within a Counselor Education program under direct supervision.  
*ED-Child, Family & Comm Sci*

**MHS 7901. Advanced Practicum in Counselor Education**

3(3,0). PR: Admission to PhD program in Education--Counselor Education track. This course provides advanced graduate students an opportunity to demonstrate and develop counseling skills.  
*ED-Child, Family & Comm Sci*

**MLS 6940. Supervision and Administration in the Laboratory**

3(3,0). PR: Graduate standing or C.I. Management strategies and skills in the laboratory setting. Explores motivation theory, communication issues, ethics, personnel administration and regulatory agencies.  
*COM-Molecular & Microbiology*

**MLS 6941. Principles of Laboratory Education and Training**

3(3,0). PR: Graduate standing or C.I. Application of learning theories and curriculum planning to the laboratory didactic and practical teaching environment. To include goal and task analysis, performance objectives and evaluation mechanisms.  
*COM-Molecular & Microbiology*

**MLS 6942. Advanced Specialization in Immunematology; Theory**

3(3,0). PR: Graduate standing or C.I. Theoretical aspects of blood collection, testing, storage and transfusion of blood, red cell antigen genetic and immunological theory, transfusion therapy and serological characteristics of antibodies.  
*COM-Molecular & Microbiology*

**MLS 6943. Advanced Specialization in Immunohematology: Practice**

3(3,0). PR: Acceptance in the Specialist in Blood Banking program. Supervised practice in donor recruitment, phlebotomy, donor testing. Component preparation, HLA typings, transfusion service and management in the community blood center.  
*COM-Molecular & Microbiology*

**MMC 6202. Legal and Ethical Issues for Communication**  
3(3,0). A study of social, ethical and legal issues for Communications practitioners and the impact on media consumers.

*COS-Communication*

**MMC 6307. International Communication**

3(3,0). Case studies on global communication, coping with cultures, communicating across cultures, global media, global news flow and persuasive communication. May be repeated for credit.

*COS-Communication*

**MMC 6402. Mass Communication Theory**

3(3,0). A study of mass communication theory and research traditions.

*COS-Communication*

**MMC 6407. Visual Communication Theory**

3(3,0). A study of the visual world as it relates to theories of visual interpretation.

*COS-Communication*

**MMC 6445. Mass Media Research I**

3(3,0). Quantitative approaches to mass communication research.

*COS-Communication*

**MMC 6446. Mass Media Research II**

3(3,0). Qualitative approaches to mass communication research.

*COS-Communication*

**MMC 6567. Seminar in New Media**

3(3,0). A study of the development and convergence of new technologies and their mediation.

*COS-Communication*

**MMC 6600. Media Effects and Audience Analysis**

3(3,0). A study of the effects of communication on society emphasizing the research in media effects.

*COS-Communication*

**MMC 6607. Communication and Society**

3(3,0). The importance of the mass media, their structure, role, and problems

*COS-Communication*

**MMC 6612. Communication and Government**

3(3,0). A study of the relationship between the media and government

*COS-Communication*

**MTG 5256. Differential Geometry**

3(3,0). PR: MAA 4227, graduate status or senior standing, or C.I. Differentiable manifolds, tangent space and tangent bundle, flows and vector fields, Lie derivatives, cotangent space and cotangent bundles, Riemann metrics, connections and geodesics, applications in classical mechanics.

*COS-Mathematics*

**MTG 6348. Topological K-Theory**

3(3,0). PR: C.I. or MTG 4302. Chain and cochain complexes; general cohomology theories; exact couples and spectral sequences; Ariyah-Hirzebruch spectral sequence; topological K-theory; Chein character; applications.

*COS-Mathematics*

**MUC 5112. Composition V**

2(1,0). PR: Graduate standing in music education or C.I. Advanced music composition at the graduate level. May be used in the degree program a maximum of 4 times.

*CAH-Music*

**MUC 5445. Electroacoustic Music Composition**

3(3,0). PR: MUS 2360C and MUC 1101C, or C.I. Creation of electroacoustic music, including synthesis, sample editing, and performance practices.

*CAH-Music*

**MUC 6251. Composition VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study in musical composition. May be used in the degree program a maximum of four times.

*CAH-Music*

**MUE 5348C. K-12 Music Methods**

4(4,0). PR: Graduate standing in Music Education or C.I. Organization and administration of instruction for comprehensive music education, K-12. Instructional planning, techniques, and materials for general, choral, and instrumental music education.

*ED-Teaching & Learning Princ*

**MUE 6080. Foundations of Music Education**

3(3,0). PR: Graduate standing in music. Study of significant historical events that have shaped music education along with important research and philosophical writings. Designed for online delivery.

*CAH-Music*

**MUE 6175. Teaching Music Performance**

3(3,0). PR: Graduate standing in MA or MEd in Music Education or C.I. Techniques and skills for planning, administering and directing performing music organizations. Examination of historical, sociological and philosophical foundations of music education.

*ED-Teaching & Learning Princ*

**MUE 6349. Advanced General Music**

3(3,0). PR: Basic Teacher Certificate or C.I. Analysis of current materials, new programs, and teaching techniques in general music, K-12. Emphasis on practical applications. Examinations of psychological foundations of music education.

*ED-Teaching & Learning Princ*

**MUE 6945. Practicum in Music Education**

3(0,14). PR: Basic Teacher Certificate. MUE 6349, MUE 6610 and MUE 6630 or C.I. Field experience in teaching music. May be repeated for credit.

*ED-Teaching & Learning Princ*

**MUG 6106. Advanced Conducting I**

3(3,0). PR: Graduate standing in MEd or MA in Music Education or C.I. Basic conducting practices including the application of theory and personal musicianship skills.  
*CAH-Music*

**MUG 6107. Advanced Conducting II**

3(3,0). PR: MUG 6106, C.I. Conducting skills, analytical technique, and teaching practices. May be used in the degree program a maximum of two times.  
*CAH-Music*

**MUG 6306. Conducting VI**

2(1,1). PR: Admission in MA in Music degree program and audition. Individual study of conducting large ensembles. Participation in assigned ensemble required. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUH 5326. Medieval and Renaissance Music**

3(3,0). PR: Graduate standing in music education or C.I. Music and culture of Western Europe in the era c. 450-1600.  
*CAH-Music*

**MUH 5345. Music of the Baroque**

3(3,0). PR: Graduate standing in music or music education or C.I. Baroque music, 1600-1750. Investigates Baroque musical styles and composers within their diverse historical, musical, and cultural contexts.  
*CAH-Music*

**MUH 5356. Eighteenth-Century Music**

3(3,0). PR: Graduate standing in music education or C.I. Music and culture of Western Europe in the era c. 1700-1800  
*CAH-Music*

**MUH 5365. Music of the 19th Century**

3(3,0). PR: Graduate standing in Music or C.I. Western Art Music of the 19th Century.  
*CAH-Music*

**MUH 5375. Music Since 1900**

3(3,0). PR: Graduate standing in music education or C.I. Music and culture of Western and American art Music from c. 1900 to the present.  
*CAH-Music*

**MUH 5816. Jazz Styles and Analysis**

3(3,0). PR: Graduate standing or C.I. Advanced study of historical style periods and master artists in jazz music.  
*CAH-Music*

**MUH 6916. Music Bibliography and Research**

3(3,0). PR: Admission into MA in Music degree program or C.I. Materials and techniques used in scholarly research in music.  
*CAH-Music*

**MUH 6935. Music History Seminar**

3(3,0). PR: MUH 6916 or C.I. Seminar on selected topics in music history and literature. May be used in the degree program a maximum of three times.  
*CAH-Music*

**MUL 5215. Electronic Music Literature**

3(3,0). PR: MUL 2010, MUL 2014, MUL 2016, MUH 2017, or MUH 2019, or C.I. Survey of electronic music and music technology with emphasis on history, sociological perspectives and aesthetics.  
*CAH-Music*

**MUM 5806. Performing Arts Management**

3(3,0). PR: Graduate status or senior standing or C.I. Structure of nonprofit performing arts organization (PAOs), examining the fundamental elements of administration, audience development, marketing, and fund-raising.  
*CAH-Music*

**MUN 5125. Concert Band**

1(0,3). PR: Open to all graduate students by audition. Study and performance of music for large ensembles. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUN 5145. Wind Ensemble**

1(0,4). PR: Open to all graduate students by audition. Study and performance of music for wind ensemble and band. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUN 5215. Symphony Orchestra**

1(0,5). PR: Open to all graduate students by audition. Rehearsal and performance of works from the symphonic repertoire. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUN 5325. Women's Chorus**

1(0,3). PR: Open to all graduate students by audition. Study and performance of choral music for women's voices. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUN 5368L. Graduate Madrigal Singers**

1(0,3). PR: Graduate standing in Music Education and C.I. Study of varied literature for small vocal ensembles. May be used in the degree program a maximum of five times.  
*CAH-Music*

**MUN 5385L. Graduate University Chorus**

1(0,3). PR: Graduate standing in Music Education and C.I. Study and performance of large ensemble music. May be used in the degree program a maximum of five times.  
*CAH-Music*

**MUN 5445. Percussion Ensemble**

1(0,2). PR: Open to all graduate students by audition. Study and performance of music for small percussion ensembles. May be used in the degree program a maximum of four times.  
*CAH-Music*

**MUN 5465L. Graduate Chamber Music**

1(0,2). PR: Graduate standing in Music Education and C.I. The study and performance of vocal and/or instrumental chamber ensemble literature. Flexible instrumentation to meet student needs. May be used in the degree program a maximum of five times.

*CAH-Music*

**MUN 5478L. Early Music Ensemble**

1(0,3). PR: Graduate standing in Music Education and C.I. Graduate ensemble experience with instruments and repertoire of the Medieval, Renaissance, and Baroque periods. May be used in the degree program a maximum of five times.

*CAH-Music*

**MUN 5715L. Jazz Ensemble**

1(0,4). PR: Audition, graduate or senior standing, and C.I. Study and performance of jazz big band music. May be used in the degree program a maximum of four times only when course content is different.

*CAH-Music*

**MUN 5716L. Jazz Chamber Group**

1(0,2). PR: Audition, graduate standing or senior standing, and C. I. Study and performance of jazz small group music. May be used in the degree program a maximum of four times.

*CAH-Music*

**MUO 5505L. Graduate Opera Workshop**

1(0,3). PR: C.I. and audition. Study of audition techniques, operatic roles and repertoire, and characterization through performance. May be used in the degree program a maximum of five times.

*CAH-Music*

**MUS 5365. Music and Technology**

3(3,0). PR: Graduate status or senior standing, or C.I. The emergence of technology in music including MIDI, CD ROM, and the high-tech music classroom.

*CAH-Music*

**MUS 5677. Wellness for the Performing Musician**

3(3,0). PR: Graduate standing in music education or C.I. Various techniques and methods of maintaining physical health and wellness for musicians.

*CAH-Music*

**MUS 6105. Musicianship I**

3(3,0). PR: Admission into MEd in Music Education or C.I. An integrated study of music history with applications of theory and aural skill development.

*CAH-Music*

**MUS 6106. Musicianship II**

3(3,0). PR: Admission into MEd in Music Education or C.I. A continual and integrated study of music history with applications of music theory and aural skill development.

*CAH-Music*

**MUS 6107. Musicianship III**

3(3,0). PR: Admission into MEd in Music Education or C.I. Advanced integrated study of history with applications of theory and aural skill development.

*CAH-Music*

**MUS 6975L. Graduate Project**

2(0,1). PR: Two semesters of graduate study in the appropriate area or C.I. Planning, researching, and creating a written document in a non-performance area in music, designed to serve as a cumulative synthesis of learning.

*CAH-Music*

**MUS 6976L. Graduate Recital**

2(0,1). PR: Two semesters of graduate level study in the appropriate area or C.I. Public performance in an area such as instrumental/vocal performance, conducting or composition, designed as a capstone experience.

*CAH-Music*

**MUT 5381. Arranging and Composing Music**

3(3,0). PR: Satisfactory placement tests in theory, sight-singing, and ear training, and graduate status or senior standing or C.I. Arranging and composing music for instrumental and vocal ensembles. Some emphasis on compositional techniques of the 20th century.

*CAH-Music*

**MUT 5936. Music Theory Seminar**

3(3,0). PR: Graduate standing in music education or C.I. One or more issues of importance in music theory with emphasis on recent scholarly literature and debates. May be used in the degree program a maximum of four times.

*CAH-Music*

**MUT 6621. Techniques and Concepts of Musical Analysis**

3(3,0). PR: Admission into MA in Music or C.I. Advanced techniques in musical analysis.

*CAH-Music*

**MVB 5451. Trumpet V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVB 5452. French Horn V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVB 5453. Trombone V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVB 5454. Baritone V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVB 5455. Tuba V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVB 6461. Trumpet VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of trumpet performance. May be used in the degree program a maximum of four times.

*CAH-Music*



**MVB 6462. French Horn VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of French Horn performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVB 6463. Trombone VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of trombone performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVB 6464. Euphonium VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of euphonium performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVB 6465. Tuba VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of tuba performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVJ 5350C. Jazz Piano V**

2(1,1). PR: Audition, graduate standing or senior standing, and C.I. Study of jazz piano literature, styles, and techniques. May be used in the degree program a maximum of three times.

*CAH-Music*

**MVJ 5353C. Jazz Guitar V**

2(1,1). PR: Audition, graduate standing or senior standing, and C.I. Study of jazz guitar literature, styles and techniques. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 5354C. Jazz Bass V**

2(1,1). PR: Audition, graduate standing or senior standing, and C.I. Study of jazz bass literature, styles and techniques. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 5359C. Jazz Drum Set V**

2(1,1). PR: Audition, graduate standing or senior standing, and C.I. Study of jazz drum set literature, styles, and techniques. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 6369C. Jazz Drum Set VI**

2(1,1). PR: Admission into the MA in Music and an audition. Advanced study of jazz drum set literature, styles and techniques; continuation of Jazz Drum Set V. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 6460C. Jazz Piano VI**

2(1,1). PR: Admission to MA in Music and an audition. Advanced study of jazz piano literature, styles, and techniques; continuation of Jazz Piano V. May be used in the degree program a maximum of three times.

*CAH-Music*

**MVJ 6463C. Jazz Guitar VI**

2(1,1). PR: Admission to the MA in Music and an audition. Advanced study of jazz guitar literature, styles and techniques; continuation of Jazz Guitar V. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 6464C. Jazz Bass VI**

2(1,1). PR: Admission into the MA in Music and an audition. Advanced study of jazz bass literature, styles and techniques; continuation of Jazz Bass V. May be used in the degree program a maximum of three times only when course content is different.

*CAH-Music*

**MVJ 6952. Jazz VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of jazz performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVK 5451. Piano V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVK 5453. Organ V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVK 6461. Piano VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of piano performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVO 5250. Advanced Secondary Instruction**

1(1,0). PR: Graduate status or senior standing, and C.I. Advanced instructional techniques on a secondary instrument or in voice. May be repeated for credit.

*CAH-Music*

**MVP 5451. Percussion V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVP 6461. Percussion VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of percussion instruments. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 5451. Violin V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 5452. Viola V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 5453. Cello V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 5454. Bass V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 5455. Harp V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 5456. Guitar V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVS 6461. Violin VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of violin performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 6462. Viola VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of viola performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 6463. Cello VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of cello performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 6465. Harp VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of harp performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 6466. Classical Guitar VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of classical guitar performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVS 6467. Bass VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of string bass performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVV 5451. Voice V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVV 6452. Voice VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of vocal performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVW 5451. Flute V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVW 5452. Oboe V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVW 5453. Clarinet V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVW 5454. Bassoon V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVW 5455. Saxophone V**

2(1,0). PR: Graduate status or senior standing and C.I. May be repeated for credit.

*CAH-Music*

**MVW 6461. Flute VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of flute performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVW 6462. Oboe VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of oboe performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVW 6463. Clarinet VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of clarinet performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVW 6464. Bassoon VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of bassoon performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**MVW 6465. Saxophone VI**

2(1,1). PR: Admission into MA in Music degree program and audition. Intensive advanced study of saxophone performance. May be used in the degree program a maximum of four times.

*CAH-Music*

**NGR 5003. Advanced Health Assessment and Diagnostic Reasoning**

2(2,0). PR: or CR: NGR 5141; CR: NGR 5004L. Concepts and skills of advanced health assessment over the lifespan. Application of the diagnostic reasoning process through differential diagnoses.

*CON-Nursing*

**NGR 5004L. Advanced Health Assessment and Diagnostic Reasoning (Lab)**

1(0,1). PR: or CR: NGR 5141; CR: NGR 5003. Application of concepts and skills for advanced health assessment and diagnostic reasoning over the lifespan Graded S/U.

*CON-Nursing*

**NGR 5090. Urgent Care for the Advanced Practice Nurse**

3(3,0). PR: NGR 6240 or C.I. Advanced practice evaluation and management of clients in urgent care settings.

*CON-Nursing*

**NGR 5141. Pathophysiological Bases for Advanced Nursing Practice**

3(3,0). PR: Baccalaureate degree in Nursing. Critical examination of the physiological and pathophysiological mechanisms affecting individuals.

*CON-Nursing*

**NGR 5195C. International Perspectives of Global Health**

3(2,1). PR: Graduate standing or C.I. An analysis of global health in comparison with that of USA and other nation's health care systems.

*CON-Nursing*

**NGR 5638. Health Promotion**

3(3,0). PR: Admission to MSN or Nursing Certificate program or C.I. Exploration and analysis of concepts, theories, research evidence, clinical assessment and interventions for health promotion and wellness.

*CON-Nursing*

**NGR 5660. Health Disparities: Issues and Strategies**

3(3,0). PR: Graduate standing. Explores disparities in access, utilization, services, outcomes, and status for different U.S. populations: data, research, programmatic issues; and strategies to close the gaps.

*CON-Nursing*

**NGR 5720. Organizational Dynamics**

3(3,0). PR: Baccalaureate degree in Nursing or C.I. Analysis of organizational theories related to health care organizations and the use of leadership, communication and power to influence health care delivery and policy.

*CON-Nursing*

**NGR 5744. Health Care Systems, Policy and Health Professionals**

1(1,0). PR: Admission to the MSN program or C.I. Examine social responses to health and illness, health care systems and policies and the role of advanced practice nurses.

*CON-Nursing*

**NGR 5745. Professional Obligations and Activities of Advanced Practice Nursing**

1(1,0). PR: NGR 5746 and NGR 5744. Admission to MSN program or C.I. Examine professional obligations of advanced practice nursing. Opportunity to develop skills for taking certification exam.

*CON-Nursing*

**NGR 5746. Cultural, Legal, Ethical, and Political Issues of Advanced Practice Nursing**

1(1,0). PR: Admission to MSN program or C.I. Examine legal, ethical and political issues related to advanced practice nursing.

*CON-Nursing*

**NGR 5800. Theory for Advanced Practice Nursing**

3(3,0). PR: Baccalaureate degree in Nursing or C.I. Conceptual and theoretical bases of nursing practice and research with emphasis on scholarly writing and critique.

*CON-Nursing*

**NGR 5871. Health Care Informatics**

3(3,0). PR: Baccalaureate in health related field or C.I. Use of information systems, clinical data management, communication strategies, and decision-making models.

*CON-Nursing*

**NGR 5880. Professional Ethics**

3(3,0). PR: C.I. Clinical cases and other professional ethical issues related to codes of conduct and research; application of ethical principles. May be repeated for credit.

*CON-Nursing*

**NGR 5931. Interdisciplinary Care at End-of-Life**

3(3,0). PR: Graduate status or C.I. Examination of interdisciplinary roles and strategies for enabling patients, families; and caregivers to approach end-of-life free from avoidable distress and suffering.

*CON-Nursing*

**NGR 6099C. Advanced Skills for the Management of Illness and Injuries**

3(2,1). PR: Pre or Co - NGR 6240 or NGR 6331, or C.I. Development of pathological, theoretical, and clinical skills for the evaluation, diagnosis, intervention, and management of illnesses and injuries.

*CON-Nursing*

**NGR 6105. Management of Symptoms and Outcomes of Disease**

3(3,0). PR: NGR 5800, CR: NGR 5800, NGR 5141. Focused examination of the concepts, theories and research evidence that provide the basis for assessment and management of the patient experiences related to disease outcomes.

*CON-Nursing*

**NGR 6192. Pharmacology for Advanced Nursing Practice**  
3(3,0). PR: NGR 5141. Comprehensive study of medications used in the promotion and maintenance of health across the lifespan. Examination of the implications for advanced nursing practice.  
*CON-Nursing*

**NGR 6240. Adult I for APNs**  
3(3,0). PR: PreAdmit MSN Prog ANP/FNP track, NGR 5003, NGR 5141, NGR 6334. CR: Adult I APN clinical or C.I. Development of theoretical skills for evaluation, diagnosis, and management of health needs of adults and communities.  
*CON-Nursing*

**NGR 6240L. Adult I Clinical for APNs**  
3(0,3). PR: Preadmit to MSN prog FNP/ANP track, NGR 5003, NGR 5004L, NGR 5141, NGR 6334, NGR 6192. CR: NGR 6240. Application of skills for evaluation, diagnosis, and management of health needs of adults and communities. Graded S/U.  
*CON-Nursing*

**NGR 6242. Adult II for APNs**  
2(2,0). PR: NGR 6242, NGR 6334, NGR 6192. CR: Adult II for APN Clinical or C.I. Development of theoretical foundation for the evaluation, diagnosis, and management of the complex health needs of adults.  
*CON-Nursing*

**NGR 6242L. Adult II Clinical for APNs**  
2(0,2). PR: NGR 6240, NGR 6334, NGR 6192 CO-NGR 6242. Application of theory and skills for the evaluation, diagnosis, and management of the complex health needs of adults. Graded S/U. May be repeated for credit.  
*CON-Nursing*

**NGR 6331. Pediatrics I for APNs**  
2(2,0). PR: Admission to MSN program FNP or PNP track, NGR 5003, NGR 5141. CR: Pediatrics I Clinical, NGR 6192, Focused Pediatrics (PNP students only). Evaluation, diagnosis, and management of the primary care needs of children, their families and communities.  
*CON-Nursing*

**NGR 6331L. Pediatrics I Clinical for APNs**  
2(0,2). PR: Admission of MSN program PNP or FNP track, NGR 5003, NGR 5141. CR: Pediatrics I, NGR 6192, Focused Pediatrics. Evaluation diagnosis and management of the primary care needs of children and their families. Graded S/U.  
*CON-Nursing*

**NGR 6332. Pediatrics II for APNs**  
3(3,0). PR: Pediatrics I, Pediatrics I Clinical, NGR 6192 ; CR: Pediatrics II, Clinical or CI. Foundation for the evaluation, diagnosis, and management of the complex health needs of children and their families.  
*CON-Nursing*

**NGR 6332L. Pediatrics II Clinical for APNs**  
3(0,3). PR: Pediatrics I, Pediatrics I Clinical, NGR 6192. CR: Pediatrics II. Evaluation, diagnosis, and management of the complex health needs of children and their families. Graded S/U.  
*CON-Nursing*

**NGR 6334. Women's Health for APNs**  
2(2,0). PR: Admit MSN prog APN/FPN track, NGR 5003, NGR 5141. CR: Women's Health APN Clinical 6192 or C.I. Development of theoretical skills for evaluation, diagnosis, and management of women.  
*CON-Nursing*

**NGR 6335. Focused Pediatrics for APNs**  
2(2,0). PR: NGR 6331, NGR 6331L. CR: 6335L. Development of advanced knowledge in the physical and developmental assessment of children and families across the lifespan.  
*CON-Nursing*

**NGR 6335L. Focused Pediatrics Clinical for APNs**  
1(0,3). CR: NGR 6335. Application of theory and skills for the in-depth developmental and physical assessment of children and their families. Graded S/U. May be repeated for credit.  
*CON-Nursing*

**NGR 6336. Medically Complex Infants and Toddlers**  
3(3,0). PR: Admission to the Infant and Toddler Development Specialist Certificate program or the MSN Program. Biomedical risk factors affecting infant/toddler development and the impact on their families.  
*CON-Nursing*

**NGR 6482L. Women's Health for APNs Clinical**  
1(0,3). CR: NGR 6334. Application of skills for evaluation, diagnosis, and management of the health needs of women. Graded S/U.  
*CON-Nursing*

**NGR 6710. Curriculum Development in Nursing Education**  
3(3,0). PR: Admissions to MSN Program or certificate of Nursing Education, or C.I. Analysis of external and internal influences affecting curriculum development for the nursing education. Examination of societal factors impacting nursing education. Analysis of program evaluation.  
*CON-Nursing*

**NGR 6714. Clinical Teaching Strategies for Nursing**  
3(3,0). PR: NGR 6791 Teaching Strategies for Health Professionals, or C.I. Synthesis of research-based literature and best practice in the development, implementation and evaluation of clinical education for nursing students.  
*CON-Nursing*

**NGR 6715. Application of Instructional Technology for Nursing Education**  
3(3,0). PR: NGR 6791 or C.I. Analysis of effective teaching and learning strategies with emphasis on developing techniques for teaching using instructional technology in nursing education.  
*CON-Nursing*

**NGR 6722. Financial Management and Resource Development**  
3(3,0). PR: Admission to MSN program. Overview of health care financing and economics at the macro and micro level and their influence on health care delivery, resource development and health policy.  
*CON-Nursing*

**NGR 6723. Nursing Leadership and Management**  
3(3,0). PR: Admission to MSN program, NGR 5720,  
CR: NGR 6723L. In depth analysis of human resources  
management, regulatory compliance and systems  
leadership in nursing.  
*CON-Nursing*

**NGR 6723L. Nursing Leadership Management Practicum**  
3(0,9). PR: Admit to MSN program, NGR 5720. CR: NGR  
6723. Preceptor experience with a nurse leader in area of  
role specialization. Experience will focus on the analysis,  
synthesis and application of principles related to health  
care leadership including health care delivery systems  
across the continuum, patient care delivery models,  
staffing, personnel management and legal and regulatory  
requirements. Graded S/U.  
*CON-Nursing*

**NGR 6724. Nursing Leadership and Management II**  
3(3,0). PR: Admission to MSN program, NGR 5720  
Organizational Dynamics, NGR 6723, NGR 6723L. Nursing  
leadership topics including management information  
systems, quality management, program evaluation, strategic  
planning, ethics, and issues and trends.  
*CON-Nursing*

**NGR 6724L. Nursing Leadership Role Specialization  
Practicum II**  
3(0,3). PR: NGR 5720, 6723, 6723L CR: NGR 6724.  
Preceptor experience with a nurse leader in area of role  
specialization. Experience will focus on the analysis,  
synthesis, and application of content in NGR 6724L Graded  
S/U.  
*CON-Nursing*

**NGR 6752. Clinical Nurse Specialist I**  
3(3,0). PR: NGR 5141; NGR 6192, NGR 5720, NGR 5003.  
Foundation for CNS practice; common clinical problems  
across the lifespan; role delineation.  
*CON-Nursing*

**NGR 6752L. Clinical Nurse Specialist I Practicum**  
3(0,3). PR: Coreq. NGR 6752, Prereq NGR 6722.  
Implementation of the clinical expert, educator, and  
leadership roles of the CNS. Graded S/U.  
*CON-Nursing*

**NGR 6753. Clinical Nurse Specialist II**  
2(0,2). PR: Clinical Nurse Specialist I and Clinical Nurse  
Specialist I Practicum. Continuation of CNS; management  
of acute and/or complex patients across the lifespan;  
consultant, case manager, change agent and research roles.  
*CON-Nursing*

**NGR 6753L. Clinical Nurse Specialist II Practicum**  
3(0,3). PR: NGR 6752 and NGR 6752L, CR: NGR 6753.  
Continuation of CNS 1. Management of acute and/or  
complex patients across the lifespan. Consultant, case  
manager, change agent and research roles. Graded S/U.  
*CON-Nursing*

**NGR 6758L. Clinical Nurse Specialist Advanced  
Practicum**  
5(0,5). PR: NGR 6753. Supervised advanced clinical  
practice in the clinical nurse specialist role. Integration  
of practice, education, consultation, research and  
administrative roles. Graded S/U.  
*CON-Nursing*

**NGR 6773L. CNL Residency**  
3(0,3). PR: NGR 6777L, NGR 6775L, NGR 6776L and NGR  
6813. Intensive clinical immersion in role of the clinical  
nurse leader. Graded S/U.  
*CON-Nursing*

**NGR 6775L. CNL Resources and Outcomes**  
1(0,1). PR: NGR 6105 and NGR 6722. Participation  
in clinical activities related to symptom and disease  
management and healthcare finance and resource  
utilization to improve patient outcomes. Graded S/U.  
*CON-Nursing*

**NGR 6776L. CNL Advocacy and Education**  
1(0,1). PR: NGR 5720. Participation in clinical activities  
related to organizational assessment, patient/staff  
education and advocacy, and professional development.  
Graded S/U.  
*CON-Nursing*

**NGR 6777L. CNL Quality and Safety**  
1(0,1). PR: NGR 6874. Introduction to role of CNL in  
clinical setting; participation in clinical activities related to  
quality improvement and patient safety. Graded S/U.  
*CON-Nursing*

**NGR 6791. Teaching Strategies for Nurse Educators**  
3(3,0). PR: Admission to a graduate program in CON or  
the graduate certificate in Nursing and Health Professional  
Education or C.I. Application of evidenced-based practice  
guidelines to the processes of teaching and learning.  
Analysis of external and internal influences affecting the  
educational process of health professionals.  
*CON-Nursing*

**NGR 6801. Research Methods**  
3(3,0). PR: NGR 5800. Identify and critically appraise  
existing scientific evidence, and apply evidentiary findings  
to nursing practice, population or setting.  
*CON-Nursing*

**NGR 6813. Evidence Based Nursing Practice**  
3(3,0). PR: NGR 5800 and NGR 6801; Must be in last 12  
hours of MSN program. Apply research, theory and other  
evidence to advanced practice nursing. Processes for  
implementation, evaluation and synthesis of evidence-  
based nursing practice are included.  
*CON-Nursing*

**NGR 6819. Client Health Empowerment**  
3(3,0). PR: Enrollment in a graduate health program or C.I.  
Analysis of the research and application of interventions  
that promote empowerment in health care delivery for  
diverse populations.  
*CON-Nursing*

**NGR 6874. Nursing Environment Management**

3(3,0). PR: NGR 5720 and NGR 6722. In-depth analysis of the use of informatics, quality management, risk reduction and patient safety concepts and tools to promote improved patient outcomes for nursing care.

*CON-Nursing*

**NGR 6941. Advanced Practice Practicum**

Variable, 1-7. PR: NGR 5003, NGR 5141, NGR 6192, NGR 6240 and NGR 6334, or NGR 6332; CR: NGR 6242 - ANP/FNP. Supervised advanced clinical practice in the role of the nurse practitioner in an individualized preceptorship. Graded S/U.

*CON-Nursing*

**NGR 7115. Philosophical and Theoretical Foundations of Nursing Science**

3(3,0). PR: Doctoral standing in College of Nursing or C.I. Analysis of the nature and levels of theory in science disciplines, historical and contemporary approaches to knowledge generation, and implications for nursing science.

*CON-Nursing*

**NGR 7123. Concept Development in Nursing**

3(3,0). PR: NGR 7115. Philosophical foundations and conceptualization techniques of concept development and analysis to advance the synthesis of knowledge in nursing.

*CON-Nursing*

**NGR 7163. Illness as a Social Construct**

3(3,0). PR: NGR 7816 or C.I. Focused examination of concepts, theories, and research related to physical expression of disease and its link to individual psychosocial responses, beliefs, relationships and social environment.

*CON-Nursing*

**NGR 7176. Advanced Pharmacology for Advanced Practice Nursing**

3(3,0). PR: Admission to DNP and National Certification for APN Specialty or C.I. Comprehensive understanding and application of pharmacotherapeutics for acute and complex patients throughout the life span.

*CON-Nursing*

**NGR 7190. Healthcare Systems and Policy**

3(3,0). PR: Doctoral standing in the College of Nursing or C.I. Underpinnings of healthcare policy; healthcare policy formation and change agency; influences on healthcare systems; related analysis and research.

*CON-Nursing*

**NGR 7642. Epidemiology Principles in Advanced Practice Nursing**

3(3,0). PR: Admission to DNP program or C.I. Advanced application of epidemiological concepts in community and public health practice, including disease surveillance, prevalence, prevention and statistical management of patient aggregate data.

*CON-Nursing*

**NGR 7661. Healthcare for Vulnerable Populations**

3(3,0). PR: Doctoral standing in the College of Nursing or C.I. Health and healthcare issues of vulnerable populations and the influence of social, cultural, political and economic factors.

*CON-Nursing*

**NGR 7671. Advanced Clinical Management for Advanced Practice Nursing**

3(3,0). PR: NGR 7176; CR: NGR 7748. Advanced diagnostic reasoning and analysis of clients with complex health maintenance, health promotion and illness management specific to speciality.

*CON-Nursing*

**NGR 7748. Advanced Clinical Practice Selective for Advanced Practice Nursing**

3(3,0). PR: NGR 7176; CR: NGR 7671. Clinical management of clients with complex health maintenance, health promotion and illness management needs.

*CON-Nursing*

**NGR 7793. Leadership and Economics in Advanced Practice Nursing**

3(3,0). PR: NGR 7190. Advanced analysis of change management, leadership theories/strategies, finance and resource management and the health care systems and economic structures in Advanced Practice Nursing.

*CON-Nursing*

**NGR 7815. Qualitative Methods in Nursing Research**

3(3,0). PR: Doctoral standing in the College of Nursing or C.I. In-depth knowledge of qualitative research theories, designs and methods for nursing research. Application of theory to a contemporary problem.

*CON-Nursing*

**NGR 7816. Quantitative Methods for Nursing Research II**

3(3,0). PR: NGR 7816. Advanced research designs; multivariate and biostatistical data analysis in nursing research.

*CON-Nursing*

**NGR 7817. Quantitative Methods for Nursing Research I**

3(3,0). PR: Doctoral standing in the College of Nursing or C.I. Designing quantitative studies and related statistical analysis; maximizing statistical power; ethical issues related to nursing research.

*CON-Nursing*

**NGR 7820. Innovative Technologies in Healthcare**

3(3,0). PR: Doctoral standing in the College of Nursing or C.I. Application of innovative technologies in healthcare to research, teaching and practice. Legal, ethical and cultural issues related to technology transfer.

*CON-Nursing*

**NGR 7823. Psychometrics and Measurement for Nursing Research**

3(3,0). PR: NGR 7817, NGR 7815, or C.I. Developing, testing and applying measurement theory in physiological and psycho social research analysis of psychometric properties of instruments and methods appropriate to theoretical perspectives and scientific rigor.

*CON-Nursing*

**NGR 7916. Research Grants Process and Proposal Writing**  
3(3,0). PR: Doctoral standing or C.I. Grants process include writing elements of research proposal for HHH R-series applications and strategies for successful proposal preparation.  
*CON-Nursing*

**NGR 7948. Doctor of Nursing Practice Residency**  
Variable. PR: NGR 7671; NGR 7748, and NGR 7793. Clinical management of clients with complex health maintenance, health promotion and illness management needs focusing on a continuum of care within health care systems or organizations. May be used in the degree program a maximum of 2 times. There is a 6 hour requirement.  
*CON-Nursing*

**NGR 7974. Doctor of Nursing Practice Project**  
3(3,0). PR: NGR 7176; NGR 7642, NGR 7115; NGR 7817; NGR 7123; NGR 7190; NGR 6874. Analyze health care needs, develop an evidence based intervention and evaluate outcomes for a specific population within an identified health care setting. May be used in the degree program a maximum of two times. Graded S/U.  
*CON-Nursing*

**OSE 5041. Introduction to Wave Optics**  
3(3,0). PR: EEL 4440 or PHY 4424 or C.I. Electromagnetic foundation of light waves as applied to reflection, diffraction, interference, polarization, coherence, and guided waves.  
*OPT-Optics*

**OSE 5050. Fundamentals and Applications of Photonics**  
3(3,0). PR: Graduate standing or C.I. Introduction to optics and photonics emphasizing the concepts governing applications of current interest for science and engineering senior and first-year graduate students and working scientists and engineers.  
*OPT-Optics*

**OSE 5051L. Electro-Optics Laboratory**  
3(1,4). PR: EEL 4440 or OSE 5041 or C.I. Study of laboratory techniques for optical measurements and performance of measurements on electro-optic devices to determine operational characteristics.  
*OPT-Optics*

**OSE 5115. Interference and Diffraction**  
3(3,0). PR: Graduate status or senior standing, or C.I. Interference of light, optical interferometry, Fraunhofer and Fresnel scalar diffraction, diffraction gratings, temporal coherence, spatial coherence, and partial coherence.  
*OPT-Optics*

**OSE 5203. Fundamentals of Applied Optics**  
3(3,0). PR: Graduate standing or C.I. Fundamentals of Geometrical Optics, Geometrical Theory of Image Formation, Optical System Layout, Radiometry.  
*OPT-Optics*

**OSE 5234L. Applied Optics Laboratory**  
3(1,3). PR: Graduate standing or C.I. Laboratory Techniques for observing optical phenomena and quantitative experimental study of geometrical optics, optical interferometry, diffraction, and image processing.  
*OPT-Optics*

**OSE 5312. Fundamentals of Optical Science**  
3(3,0). PR: Graduate standing or C.I. Microscopic theory of absorption, dispersion, and refraction of materials; wave propagation, introduction to lasers and nonlinear optics.  
*OPT-Optics*

**OSE 5313. Materials for Optical Systems**  
3(3,0). PR: Graduate standing or C.I. Course will review key attributes of optical materials that allow them to be used in a range of applications, devices and components in optical systems.  
*OPT-Optics*

**OSE 5414. Fundamentals of Optoelectronic Devices**  
3(3,0). PR: Graduate standing or C.I. Operation, methods of fabrication, applications, and limitations of various optoelectronic devices including quantum well semiconductor devices.  
*OPT-Optics*

**OSE 5511. Laser Principles**  
3(3,0). PR: PHY 3101, MAP 2302, PHY 4424, graduate status or senior standing, or C.I. Classical introduction to the basic principles of laser gain media, properties of resonators and modes, description of specific laser systems.  
*OPT-Optics*

**OSE 5630C. Thin Film Optics**  
3(2,1). PR: PHY 4424 or EEL 4440 and OSE 5041 or OSE 5630C. Principles of thin film optics and its applications in optical, electro-optical, and laser systems.  
*OPT-Optics*

**OSE 6111. Optical Wave Propagation**  
3(3,0). PR: Graduate standing or C.I. Optical propagation of light waves as applied to isotropic, anisotropic, and inhomogeneous media, guided waves and Gaussian beams.  
*OPT-Optics*

**OSE 6118. Optical Propagation in Inhomogeneous Media**  
3(3,0). PR: Graduate standing or C.I. Basic concepts of optical wave scattering and propagation in inhomogeneous media with applications to material sciences, optical remote sensing, biomedical optics, imaging, and image analysis.  
*OPT-Optics*

**OSE 6120. Theoretical Foundations of Optics**  
3(3,0). PR: Graduate standing or C.I. Mathematical concepts used in Optics. Topics covered include linear algebra, orthogonal expansions of functions, Fourier transforms, ordinary differential equations, and partial differential equations.  
*OPT-Optics*

**OSE 6143. Fiber Optics Communication**

3(3,0). PR: Graduate standing and OSE 6432 or C.I. Use of fiber optics as a communication channel. Principles of fiber optics. Mode theory, transmitters, modulators, sensors detectors and demodulators.

*OPT-Optics*

**OSE 6211. Fourier Optics**

3(3,0). Application of Fourier transform theory to optical systems design. Development of optical correlation techniques. Holographic techniques and applications.

*OPT-Optics*

**OSE 6225. Radiation and Detection**

3(3,0). PR: C.I. Radiometry, Planck radiators, spectrometers, photon-counting statistics, detector noise analysis, detector mechanisms.

*OPT-Optics*

**OSE 6265. Optical Systems Design**

3(3,0). PR: OSE 5203 or C.I. Design principles of lens and mirror optical systems; evaluation of designs using computer techniques.

*OPT-Optics*

**OSE 6314. Optics of Low Dimensional Semiconductors**

3(3,0). PR: P.R. OSE 5312 or C.I. Optical properties and semiconductor physics of low-dimensional systems (quantum wells, wires, and dots), nano-photonic devices, and future nano-optical concepts.

*OPT-Optics*

**OSE 6315. Liquid Crystal Materials and Devices**

3(3,0). PR: Graduate standing or C.I. Basic liquid crystal materials and their physical, optical, and electro-optic properties; photonic devices for amplitude and phase modulations.

*OPT-Optics*

**OSE 6319. Optical Waves and Materials**

3(3,0). PR: Graduate standing or C.I. Reviews Optics and material properties important for propagation and control of light. This is a review course in preparation for the Ph.D. Qualifying Exam.

*OPT-Optics*

**OSE 6330. Stimulated and Holographic Scattering**

3(3,0). PR: Graduate standing or C.I. The study of those processes in Nonlinear Optics, which are characterized by propagation of light in the media with the size considerably larger than the wavelength.

*OPT-Optics*

**OSE 6334. Nonlinear Optics**

3(2.5,0.5). PR: PHY 5346. Maxwell's equations in nonlinear media, frequency conversion techniques (SHG, SFG, OPO), stimulated scattering, phase conjugation, wave-guided optics, nonlinear crystals.

*OPT-Optics*

**OSE 6335. Nonlinear Guided Wave Optics**

3(3,0). PR: PHY 5346, PHY 6347, and OSE 6334. The physics and applications of nonlinear optical interactions in fibers and planar waveguides is discussed, including parametric processes, all-optical effects and solutions.

*OPT-Optics*

**OSE 6347. Quantum Optics**

3(3,0). PR: PHY 5606, PHY 5346, OSE 5511. Semiclassical treatment of light/matter interactions (quantized atomic states plus Maxwell's equations). Density matrix theory, coherent optical transients, pulse propagation.

*OPT-Optics*

**OSE 6421. Integrated Optics**

3(3,0). PR: Graduate standing or C.I. The propagation and loss characteristics in dielectric optical waveguides, fundamental concepts of both integrated and fiber optic devices, and numerical modeling of complex integrated optical components.

*OPT-Optics*

**OSE 6432. Fundamentals of Photonics**

3(3,0). PR: OSE 6111 and graduate standing or C.I. Principles of guided wave optics, electro-optics, acousto-optics and optoelectronics.

*OPT-Optics*

**OSE 6445. High Speed Photonics**

3(3,0). PR: Graduate standing or C.I. Generation, transmission, detection, and manipulation of high speed optical signals.

*OPT-Optics*

**OSE 6455L. Photonics Laboratory**

3(1,3). PR: Graduate standing or C.I. experimental study of photonic devices and systems including liquid crystal displays, fiber-optic sensors, laser diodes, electro optic modulation, acousto-optic modulation, lightwave detection, optical communications, and photonic signal processing.

*OPT-Optics*

**OSE 6457. Photonic Signal Processing**

3(3,0). Design, building and testing of photonic information processing systems using fiber-optics bulk polarization optics, acousto-optics, liquid crystals, micromirrors, and integrated optics.

*OPT-Optics*

**OSE 6473. Optical Networks**

3(3,0). PR: Graduate standing or C.I. The interplay between the current state of electronic digital networking and optical transmission and switching technologies and the principles that underlie the present optical networking technology.

*OPT-Optics*

**OSE 6525. Laser Engineering**

3(3,0). PR: OSE 5041 or C.I. Principles of laser amplification and oscillations; design of lasers; general characteristics of excitation systems.

*OPT-Optics*

**OSE 6526L. Laser Engineering Laboratory**

3(1,3). PR: OSE 6525, OSE 5511, or C.I. Designing and device implementation of diode pumped solid-state lasers, nonlinear frequency conversion, Q-switching, mode locking, and pulse second harmonic generation.

*OPT-Optics*



**OSE 6528. Specific Laser Systems**

3(3,0). PR: OSE 5511 or C.I. Review of laser principles, specifics of gas, ion, solid state, dye, metal vapor, free electron, and semiconductor lasers and power supplies.  
*OPT-Optics*

**OSE 6536. Semiconductor Lasers**

3(3,0). PR: Optics Majors or C.I. Light-matter interaction, thermal physics and solid state physics to understand, analyze, and engineer semiconductor lasers with different active region dimensionalities.  
*OPT-Optics*

**OSE 6615L. Optoelectronic Device Fabrication Laboratory**

3(0,6). PR: Graduate standing or C.I. Design and micro-fabrication of semiconductor optoelectronics devices including passive waveguides, light emitting diodes (LEDs), laser diodes (LDs), photodetectors and electro-optic modulators.  
*OPT-Optics*

**OSE 6650. Optical Properties of Nanostructured Materials**

3(3,0). PR: OSE 6111, OSE 5312, C.I. Theory and application of nanostructured optical materials: Effective medium theory, nanostructured surfaces, plasmon waveguides, nanophotonic circuits, metallic near-field lenses, collective modes in nanoparticle arrays, metamaterials.  
*OPT-Optics*

**OSE 6817. Advanced Topics in Electro-Optics**

3(3,0). PR: C.I. Current research topics in electro-optics, such as optical computing, binary optics, advanced system design issues, novel laser systems.  
*OPT-Optics*

**OSE 6820. Flat Panel Displays**

3(3,0). PR: Graduate standing or C.I. Liquid crystal display, projection display, micro display, plasma display, light emitting diodes, organic light emitting display, and field emission display.  
*OPT-Optics*

**OSE 6854. Near Field Optics**

3(3,0). PR: Graduate standing or C.I. An introduction to the underlying phenomenology and the potential applications of near-field optics in using light to locate, identify, and manipulate structures on nanometer scales.  
*OPT-Optics*

**PAD 5041. Ethics and Values in Public Administration**

3(3,0). Examination of ethics in the public sector. Public concerns, past patterns, and individual/social aspects of ethical behavior are explored.  
*HPA-Public Administration*

**PAD 5145. Volunteerism in Nonprofit Management**

3(3,0). PR: Admission to Master of Nonprofit Management degree, Nonprofit certificate or C.I. Volunteer development in nonprofit organizations, including board selection, development and leadership, volunteer recruitment, training, retention and theories of motivation, leadership, ethical issues.  
*HPA-Public Administration*

**PAD 5146. Nonprofit Resource Development**

3(3,0). PR: Admission to master of Nonprofit Management degree, Nonprofit Certificate or C.I. Examines human resource development and financial resource development in nonprofit organizations including management issues.  
*HPA-Public Administration*

**PAD 5336. Introduction to Urban Planning**

3(3,0). Issues of urbanization, regional development, land use and comprehensive planning, environmental planning, and social planning.  
*HPA-Public Administration*

**PAD 5337. Urban Design**

3(3,0). Planning techniques such as planned unit developments, capital improvements planning, and growth management, and planning methods, including needs assessment and graphic design.  
*HPA-Public Administration*

**PAD 5338. Land Use and Planning Law**

3(3,0). Review of national and local aspects of the legal underpinnings of urban planning aspects such as zoning, growth management, and environmental regulation.  
*HPA-Public Administration*

**PAD 5356. Managing Community and Economic Development**

3(3,0). PR: Graduate standing or C.I. Overview of economic development activities focusing on policy and managerial issues at the local level.  
*HPA-Public Administration*

**PAD 5425. Dispute Resolution in the Public Sector**

3(3,0). An examination of the skills needed to resolve disputes in the public sector through facilitation, mediation, and other alternative methods.  
*HPA-Public Administration*

**PAD 5427. Labor Relations in the Public Sector**

3(3,0). Current trends and developments in employment relations in the public sector, especially employee organization, negotiations, and the collective bargaining process.  
*HPA-Public Administration*

**PAD 5806. Local Government Operations**

3(3,0). Operational Functions of municipal and county governments and the role of the chief executive officer.  
*HPA-Public Administration*

**PAD 5807. Administrative Practice in the Public Sector**

3(3,0). The application of various theoretical concepts to the "real world" of public administration. Policy formulation and execution are examined through the case study mode.  
*HPA-Public Administration*

**PAD 5850. Grant and Contract Management**

3(3,0). PR: Admission to the Master of Nonprofit Management degree, Nonprofit certificate or C.I. Study of government or public nonprofit agency grant and contract administration and management responding to funding assistance solicitations and grant and contract preparation, evaluation, and presentation.  
*HPA-Public Administration*

**PAD 6035. Public Administration in the Policy Process**  
3(3,0). Analysis of the role of the public administrator in the analysis, formulation, implementation, and evaluation of public policies, especially at the state and local levels.  
*HPA-Public Administration*

**PAD 6037. Public Organization Management**  
3(3,0). Structure, functioning, performance of public organizations; behavior of individuals and groups; application for public management, includes both macro and micro approaches to organizational behavior.  
*HPA-Public Administration*

**PAD 6053. Public Administrators in the Governance Process**  
3(3,0). An examination of the political, social, economic, and moral context of modern public administration, with special attention to the ethical dimensions of the administrator's role.  
*HPA-Public Administration*

**PAD 6062. Advanced Concepts and Applications in Public Administration**  
3(3,0). PR: PAD 6700 and PAD 6701 or C.I. An integrative course applying the skills, knowledge, and values considered in the program to selected public problems.  
*HPA-Public Administration*

**PAD 6142. Nonprofit Organizations**  
3(3,0). PR: Admission to the Master of Nonprofit Management Degree, Nonprofit Certificate or C.I. Synthesis of best practices and research literature in nonprofit organization management. Instruction method is simulation where students act as nonprofit organization Board Members developing policies and procedures.  
*HPA-Public Administration*

**PAD 6149. Nonprofit Administration**  
3(3,0). PR: Admissions to the Master in Nonprofit Management degree, Nonprofit Certificate or CI. Provides an overview of nonprofit leadership and board development, focusing on the ethical, legal and administrative responsibilities of those individuals responsible for nonprofit management.  
*HPA-Public Administration*

**PAD 6207. Public Financial Management**  
3(3,0). PR: Graduate standing or C.I. Survey of financial management functions in local government, such as accounting, fund structures, debt and case management, and financial reporting.  
*HPA-Public Administration*

**PAD 6208. Nonprofit Financial Management**  
3(3,0). PR: Admission to the Master in Nonprofit Management, Nonprofit Certificate or C.I. Financial management in nonprofit organizations, including nonprofit funding, budgeting policies and procedures, orientation of department managers to budgeting, estimating income and expenses, and ethical implications of budgeting and finance.  
*HPA-Public Administration*

**PAD 6227. Public Budgeting**  
3(3,0). PR: Graduate standing or C.I. Budgets as planning programming documents, stressing the relationships of policy and budgetary decisions, problems in grantsmanship and revenue decision making, program budgeting, PPBS, and incrementalism.  
*HPA-Public Administration*

**PAD 6307. Policy Implementation**  
3(3,0). Program analysis and organization structure as policy tools, examining the implementation of differential policy and the administrator as policy maker and change agent.  
*HPA-Public Administration*

**PAD 6327. Public Program Evaluation Techniques**  
3(3,0). PR: Admission to Nonprofit Management degree or certificate or Criminal Justice Certificate or C.I. Techniques and skills utilized in the evaluation of public programs.  
*HPA-Public Administration*

**PAD 6335. Strategic Planning and Management**  
3(3,0). PR: Admission to any degree or certificate offered by Public Administration or Criminal Justice certificate or C.I. An examination and analysis of planning, goal setting, and strategic management in public sector organizations.  
*HPA-Public Administration*

**PAD 6339. Housing Development and Planning**  
3(3,0). PR: Graduate standing or C.I. Metropolitan and regional planning course with primary focus on familiarizing students with housing planning and development in communities.  
*HPA-Public Administration*

**PAD 6353. Environmental Program Management Research**  
3(3,0). Research of environmental programs, problems, issues, and policies to prepare persons working for or entering government service for environmental program staff or management responsibilities.  
*HPA-Public Administration*

**PAD 6355. Growth Management Approaches and Techniques**  
3(3,0). PR: Graduate standing or C.I. Regional and metropolitan planning course that focuses on how growth management works in communities.  
*HPA-Public Administration*

**PAD 6387. Transportation Policy**  
3(3,0). PR: Graduate status or C.I. An examination of the process of public policy formulation and implementation in the field of transportation.  
*HPA-Public Administration*

**PAD 6397. Managing Emergencies and Crises**  
3(3,0). PR: Graduate standing or C.I. Analyzes and integrates the basic crisis management steps: hazard mitigation, disaster preparedness, disaster response, and recovery --building analytical and practical skills necessary to perform effectively in homeland security/emergency management-related positions.  
*HPA-Public Administration*

**PAD 6399. Foundations of Emergency Management and Homeland Security**

3(3,0). PR: Graduate standing or C.I. Analyzes the policy and organizational design issues confronting managers of emergency management and homeland security programs by: examining the natural and manmade threats; by analysis of the network of actors - national, state, local, and private; and by assessing the policy, plans, and procedures at governmental and community levels.

*HPA-Public Administration*

**PAD 6417. Human Resource Management**

3(3,0). PR: Admission to any degree or certificate by Public Administration or Criminal Justice certificate or C.I. Administrator as manager and motivator of public employees with particular emphasis on organizational behavior and contemporary public service legislation.

*HPA-Public Administration*

**PAD 6700. Analytic Techniques for Public Administration I**

3(3,0). Statistical methodology and use of computers as a tool for decision making in the public sector.

*HPA-Public Administration*

**PAD 6701. Analytic Techniques for Public Administration II**

3(3,0). PR: Completion of PAD 6700. Applied analytical tools for administrators in the public sector. Practical use of computers in policy and decision making.

*HPA-Public Administration*

**PAD 6716. Information Systems for Public Managers and Planners**

3(3,0). PR: C.I. Use of systems concept, software and computers in contemporary public sector management and planning information systems.

*HPA-Public Administration*

**PAD 6825. Cross-Sectoral Governance**

3(3,0). PR: Graduate Standing or C.I. Examines the structures, dynamics and processes associated with developing and delivering public services through networks and partnerships involving public, nonprofit, voluntary and private sectors.

*HPA-Public Administration*

**PAD 6834. Comparative Global Public Administration**

3(3,0). PR: Graduate status or CI. Public Administration at the national level, to include political system, policy structure, institutional frameworks, institutional capacity and level of technology.

*HPA-Public Administration*

**PAD 6934. Special Issues in Public Administration**

3(3,0). Substantive and theoretical issues confronting the broad spectrum of contemporary public administration. May be repeated for credit only when course content is different.

*HPA-Public Administration*

**PAD 6946. Internship**

3(3,0). PR: C.I.

*HPA-Public Administration*

**PAD 7026. Advanced Seminar in Public Administration**

3(3,0). PR: PAD 6053, PAF 7802. Discuss emerging issues in public administration research using current journal articles and exemplary research in areas such as public management.

*HPA-Public Administration*

**PAD 7419. Advanced Public Human Resource Management**

3(3,0). PR: PAD 6417 or C.I. Contemporary issues public sector personnel management, including public employee motivation, merit pay, performance appraisal, affirmative action, productivity enhancement, merit pay, performance appraisal, affirmative action, productivity enhancement, civil service reforms, comparative public personnel management.

*HPA-Public Administration*

**PAF 7000. Foundations of Public Affairs**

3(3,0). PR: Admission to PhD Program or C.I. Introduction to Public Affairs - with special emphasis on the interrelationships among criminal justice, health services administration, public administration and social work.

*HPA-College-HPA*

**PAF 7055. Public Affairs in State and Local Governments**

3(3,0). PR: Doctoral standing in Public Affairs. Public affairs of state and local governments explored from a comparative perspective. Focusing upon similarities and differences between states with implications for state and local public affairs.

*HPA-College-HPA*

**PAF 7110. Ethics and Social Justice in Public Affairs**

3(3,0). PR: Admission to PhD Program or C.I. Basic philosophical principles of theories as they impact practitioner-level ethical demands for managers; the examination of public policy institutions shaping social justice in U.S.

*HPA-College-HPA*

**PAF 7167. Seminar on Social Capital and Public Affairs: Theory and Practice**

3(3,0). PR: Admission to PhD in Public Affairs program or C.I. Introduce an active and multifaceted research frontier in social capital research enabling students to contribute original research, and/or to conceive public policy alternatives that enhance social capital.

*HPA-Public Affairs*

**PAF 7230. Strategic Change and Management in Public Affairs**

3(3,0). PR: Admission to PhD Program or C.I. Traditional organizational behavior in public affairs within the context of public agency interests and the demand for organizational change.

*HPA-College-HPA*

**PAF 7300. Policy Analysis in Public Affairs**

3(3,0). PR: Admission to PhD Program or C.I. Public policy development and impact analysis in criminal justice, health administration, public administration, and social work.

*HPA-College-HPA*

**PAF 7315. Public Policy: Microeconomic Applications**  
3(3,0). PR: Any of the following economics courses (or the equivalent): ECO 2023, ECO 3101, ECO 4504, ECO 5006, ECO 6115, ECP 4403, ECP 4703. This is a public policy course that uses microeconomics as a tool for analysis.  
*HPA-College-HPA*

**PAF 7510. Seminar in Program Evaluation in Public Affairs**  
3(3,0). PR: Admission to PhD Program or C.I. Critical analysis of program evaluation literature. Development of skills necessary to conduct program evaluations and impact assessments.  
*HPA-College-HPA*

**PAF 7600. Legal Foundations of Public Affairs**  
3(3,0). PR: Admission to PhD program in Public Affairs. Legal issues, reasoning, and research related to administration and public affairs.  
*HPA-College-HPA*

**PAF 7601. Comparative Analysis in Global Public Affairs**  
3(3,0). PR: Admission to PhD in Public Affairs. Comparative analysis in Public Affairs from global perspective examining and comparing U.S. Public Affairs and International Global areas.  
*HPA-Public Affairs*

**PAF 7750. Pedagogy in Public Affairs**  
3(3,0). PR: Admission to PhD Public Affairs. Identifies and examines recurrent and salient issues in Public Affairs pedagogy, and how these have affected pedagogy for the discipline.  
*HPA-College-HPA*

**PAF 7802. Advanced Research Methods in Public Affairs I**  
3(3,0). PR: Admission to PhD Program or C.I. Advanced social science methodology. Critical evaluation of research; the design and conduct of research. A solid background in research methodology is required.  
*HPA-College-HPA*

**PAF 7804. Advanced Quantitative Methods I**  
3(3,0). PR: Admission to PhD Program or C.I. An investigation of data analysis strategies, including presentation of results, building upon knowledge of hypothesis testing and multivariate statistics.  
*HPA-College-HPA*

**PAF 7805. Advanced Quantitative Research Methods in Public Affairs II**  
3(3,0). PR: PAF 7804. Advanced principles and methods employed in PAF applied research. Emphasis on application of structural equation modeling techniques/research methods to the development of causal models.  
*HPA-College-HPA*

**PAF 7806. Advanced Research Methods in Public Affairs II**  
3(3,0). PR: PAF 7802. Advanced critical evaluation of research methods that concentrate on key concepts and procedures. A variety of methodologies will be used with a focus on the strengths and weaknesses of various research strategies.  
*HPA-College-HPA*

**PAF 7809. Applied Quantitative Methods in Public Affairs**  
3(3,0). PR: PAF 7804. Application and review of knowledge and skills for quantitative analysis in Public Affairs  
*HPA-College-HPA*

**PAF 7810. Seminar in Survey Research in Public Affairs**  
3(3,0). PR: Admission to PhD Program or C.I. In-depth analysis of research survey methods and their application. Focus on interviews and questionnaires.  
*HPA-College-HPA*

**PAF 7820. Seminar in Qualitative Methods in Public Affairs**  
3(3,0). PR: Admission to PhD Program or C.I. Qualitative research methods and their application to the study of public affairs. Methods examined include case studies, focus groups, ethnographic studies, qualitative interviews, and content analysis.  
*HPA-College-HPA*

**PAF 7840. Seminar in Secondary Data Analysis in Public Affairs**  
3(3,0). PR: PAF 7802. In-depth examination of the availability and use of archival data. Advantages and limitations of secondary data analysis discussed.  
*HPA-College-HPA*

**PAF 7857. Decision Informatics in Public Affairs**  
3(3,0). PR: Admission to PhD in Public Affairs or C.I. Decision theory and diagnostic test evaluation fundamentals applied to health/medical informatics and public affairs - including formal metrics (e.g. sensitivity and specificity) essential for decision support.  
*HPA-Public Affairs*

**PAF 7925. Symposium on Public Affairs Issues**  
3(3,0). PR: Admission to Public Affairs program or C.I. Issues and trends impacting the four subject areas in the U.S. Public Affairs along with the inter-disciplinary characteristics of the respective cognate areas will be explored.  
*HPA-Public Affairs*

**PAZ 5235. Zoo and Aquarium Biology Management**  
3(3,0). PR: Successful completion of PCB 3044 and PCB 3063 and C.I. Conservation, propagation and exhibition of wild animals in captivity.  
*COS-Biology*

**PCB 5025. Molecular and Cellular Pharmacology**  
3(3,0). PR: Graduate standing, PCB 3522. The cellular and molecular events that lead to disease states and the molecular basis of agents that modulate these processes will be covered.  
*COM-Molecular & Microbiology*

**PCB 5045C. Conservation Biology**  
4(3,2). PR: PCB 3044 and PCB 3063 or C.I. Scientific basis of conservation; conservation of ecosystems, populations, exploited species, and endangered species. Weekend field trips are required.  
*COS-Biology*

**PCB 5238. Immunobiology**

3(3,0). PR: PCB 3233 , PCB 4239. Advanced topics in immune system dysregulation with special emphasis on innate immunity.

*COM-Molecular & Microbiology*

**PCB 5239. Tumor Biology**

3(3,0). PR: PCB 4524. A course designed to provide an introduction and broad overview of the current knowledge and research in the field of cancer biology.

*COM-Molecular & Microbiology*

**PCB 5275. Signal Transduction Mechanics**

3(3,0). PR: PCB 3522 and PCB 4524. A course emphasizing various signal transduction cascades used in mammalian cells to control growth and differentiation. Discussion of original research papers will occur.

*COM-Molecular & Microbiology*

**PCB 5326C. Ecosystems of Florida**

5(3,2). PR: PCB 3044, PCB 3044L or equivalent, and graduate status or senior standing or C.I. Ecosystems of Florida will be discussed to include geography, geology, climate, energetics, nutrient cycling, community structure and conservation.

*COS-Biology*

**PCB 5435C. Marine Ecology of Florida**

4(2,6). PR: BSC 4312C, graduate status or senior standing, or C.I. Survey of experimental methods used in the study of marine communities in central and southern Florida, combining field manipulation and readings from primary literature.

*COS-Biology*

**PCB 5485. Models in Ecology**

3(3,0). PR: PCB 3044, MAC 2311 (or equivalent), and graduate status or senior standing or C.I. A survey of how simulation models are applied to ecological questions of both a theoretical and managerial nature.

*COS-Biology*

**PCB 5665C. Human Genetics**

4(3,2). PR: PCB 3063, graduate status or senior standing, or C.I. Human Genetics provides a theoretical framework for understanding the biology of the human species.

*COS-Biology*

**PCB 5935. Current Research in Population Genetics and Evolution**

3(3,0). PR: Genetics and Population Biology or graduate standing in Biology. Fundamentals of population genetics and application to evolutionary theory.

*COS-Biology*

**PCB 6035C. Wetland Ecology**

4(3,3). PR: PCB 3044 or equivalent, graduate standing, or C.I. Advanced study of ecological structure, function, and diversity of wetlands. Lectures, discussions, and field-based labs, including management, laws, and restoration.

*COS-Biology*

**PCB 6040. Methods of Data Collection and Analysis in Behavioral Ecology**

1(1,0). PR: Graduate standing and STA 5175 or STA 5176. Discussion of methodology and data analysis in behavioral ecology. The methods and analyses discussed each semester vary depending on thesis topics and literature reviewed. May be used in the degree program a maximum of four times. Graded S/U.

*COS-Biology*

**PCB 6046C. Advanced Ecology**

5(3,4). PR: Ecology, statistics and two years of biological science. Population and community ecology with emphasis on growth, regulation, species interactions, succession, and community classification.

*COS-Biology*

**PCB 6047. Advances in Plant Ecological Research**

1(1,0). PR: Graduate standing or C.I. Current methodological and conceptual developments in plant ecological research. Examination of newly published and on-going research through presentations and group discussions. Graded S/U. May be used in the degree program a maximum of two times.

*COS-Biology*

**PCB 6048C. Restoration Ecology**

4(2,4). PR: PCB 3044, BSC 4312C, and graduate standing or C.I. Survey of the general ecological principles that guide restoration ecology: the process of assisting the recovery of degraded, damaged or destroyed ecosystems.

*COS-Biology*

**PCB 6095. Professional Development in Biology I**

1(1,0). PR: M.S. Biology student. Methods in experimental design, research, and the ethics of animal research. Graded S/U.

*COS-Biology*

**PCB 6096. Professional Development in Biology II**

1(1,0). PR: PCB 6095. Preparation and presentation of research grants, scientific presentations, and scientific papers. Graded S/U.

*COS-Biology*

**PCB 6107C. Advanced Cell Biology**

4(3,2). PR: PCB 3063 and PCB 3023, and graduate standing, or C.I. Review of selected topics in cell biology with emphasis on current research in areas of membrane structure, protein targeting, cytoskeleton, signalling and cell cycle.

*COS-Biology*

**PCB 6108. Concepts in Plant Cell Biology**

4(4,0). PR: Graduate standing or C.I. Survey of current topics in plant cell biology, including cytoskeletal dynamics, cell signaling, cell cycle regulation, protein targeting and organelle structure and function.

*COS-Biology*

**PCB 6256C. Advanced Developmental Biology**

4(3,2). PR: PCB 3063, and ZOO 4603C or equivalent, and graduate standing, or C.I. Lecture and literature review of emerging areas in plant and animal developmental biology.

*COS-Biology*

**PCB 6328C. Landscape Ecology**

4(3,2). PR: PCB 3044 and STA 2023, and graduate standing or C.I. Influence of spatial heterogeneity on ecological processes. Emphasizes quantitative methods (e.g., GIS, remote sensing and modeling) to characterize landscape patterns and dynamics.

*COS-Biology*

**PCB 6365. Environmental Physiology**

3(3,0). PR: Physiology and Ecology or C.I. The effects of major environmental factors on the physiology of plants and animals.

*COS-Biology*

**PCB 6415. Advanced Topics in Behavioral Ecology**

1(1,0). PR: Graduate standing and ecology or evolution course. Discussion of the most recent literature (research) in behavioral ecology. Graded S/U. May be repeated for credit.

*COS-Biology*

**PCB 6466. Methods in Experimental Ecology**

3(3,0). PR: STA 5175 and STA 4173, and graduate standing, or C.I. An introduction to methods of population ecology. Experimental design, statistics, experimental variables and treatments and measurements of organisms and the environment.

*COS-Biology*

**PCB 6480C. Quantitative Conservation Biology**

4(3,2). PR: MAC 2311, PCB 3044, STA 2014C, and graduate standing, or C.I. Current methods of data analysis and modeling to evaluate biological population dynamics. May be used in the degree program a maximum of two times.

*COS-Biology*

**PCB 6528. Plant Molecular Biology**

3(3,0). PR: PCB 4524 or C.I. Structure and function of plant genomes, genes, gene products and experimental approaches for genetic engineering for production of edible vaccines, antibodies or other pharmaceuticals.

*COM-Molecular & Microbiology*

**PCB 6556. Conservation Genetics**

3(3,0). PR: PCB 3063 and PCB 4683, and graduate standing or C.I. Applications of genetic models to the understanding and conservation of animal and plant populations.

*COS-Biology*

**PCB 6585C. Advanced Genetics**

4(3,2). PR: Graduate standing and PCB 3063 or C.I. Recent advances in genetics, stressing molecular and developmental trends.

*COS-Biology*

**PCB 6595. Regulation of Gene Expression**

3(3,0). PR: Advanced course in molecular biology of BSC 6407C. Concepts of molecular biology focusing on major areas in transcriptional and translational processes.

*COM-Molecular & Microbiology*

**PCB 6596. Bioinformation and Genomics**

3(3,0). PR: Admission to Biomolecular Sciences Ph.D. of C.I. New scientific approaches, technologies, and tools for analysis of genomic data-genome sequencing projects.

*COM-Molecular & Microbiology*

**PCB 6655. Advanced Invertebrate Genetics**

1(0,2). PR: PCB 3063 or equivalent, graduate standing. Literature based discussion of recent developments in classical and molecular genetics of invertebrates. May be used in the degree program a maximum of 3 times.

*COS-Biology*

**PCB 6675C. Evolutionary Biology**

4(3,2). PR: PCB 3044 and PCB 3063 or C.I. Review of modern concepts and theories in evolutionary biology with emphasis on readings in the primary literature.

*COS-Biology*

**PCB 6677. Molecular Evolution**

3(3,0). PR: PCB 3063 and PCB 4683, and graduate standing, or C.I. Provides an overview of molecular methods currently used to analyze diversity within and among species.

*COS-Biology*

**PCB 6727. Comparative Animal Physiology**

3(3,0). PR: An undergraduate course in animal physiology or equivalent. Comparison of structural and functional adaptations of animal organ systems. Emphasis upon maximization of fitness under given environmental conditions.

*COS-Biology*

**PCB 6930. Current Topics in Ecology**

1(1,0). PR: Graduate standing or C.I. Research on current ecological topics will be added. The instructor will assign readings on a weekly basis. Students will lead discussion. Graded S/U. May be repeated for credit.

*COS-Biology*

**PCB 6933. Contemporary Studies in Biology**

2(2,0). PR: Graduate standing. Analysis of current publications and developments in theory and concepts of biological sciences. May be repeated for credit only when course content is different.

*COS-Biology*

**PCB 6934. Molecular Mechanisms of Fertilization: Journal Club**

1(1,0). PR: Graduate standing or C.I. Current topics in fertilization research includes analysis and discussion of primary literature in both vertebrate and invertebrate systems. Graded S/U.

*COS-Biology*

**PCB 6935. Advanced Topics in Cardiovascular Science**

2(2,0). PR: Graduate standing. Cutting-edge research in cardiovascular science is presented with emphasis on molecular mechanisms of cardiac development, vascular inflammation, oxidative stress, and neural regulation of the cardiovascular system. Graded S/U.

*COM-Molecular & Microbiology*

**PCB 6936. Current Research in Marine Vertebrate Ecology**

1(1,0). PR: Graduate standing. Current research in the area of marine vertebrate ecology: readings, presentations and discussions. Graded S/U. May be used in the degree program a maximum of five times.

*COS-Biology*

**PCB 6939. Topics in Genomics**

1(1,0). PR: PCB 3063. Review current literature in Genomics, one of the fastest growing fields in Biology. Graded S/U.  
*COS-Biology*

**PCB 6959. Cell Biology: Journal Club**

1(1,0). PR: Graduate standing or C.I. Reading and critical analysis of current research in cell biology with emphasis on cell-cell communication, cell-ecm interaction and protein targeting. Graded S/U.  
*COS-Biology*

**PCB 7047. Conservation Biology Theory**

4(4,0). PR: One graduate level course in Ecology or closely related field (i.e. environmental science) and C.I. Review and analysis of the literature of conservation biology.  
*COS-Biology*

**PCB 7049C. Conservation Biology Practice**

4(2,6). PR: Acceptance into the Conservation Biology PhD program. Case studies and evaluation of local and regional conservation issues from a biological perspective.  
*COS-Biology*

**PCB 7052. Seminar in Conservation Biology**

1(1,0). PR: Admission to PhD in Conservation Biology. Discussions and presentations addressing the history and development of the field of Conservation Biology and its relevance to modern society. Graded S/U. May be used in the degree program a maximum of three times.  
*COS-Biology*

**PCB 7090. Advanced Research Communication I**

1(1,0). PR: Admission to the PhD program in Conservation Biology. Philosophy and history of science, scientific ethics, scientific design, and presentation of scientific findings as related to conservation biology. Graded S/U.  
*COS-Biology*

**PCB 7091. Advanced Research Communications II**

1(1,0). PR: PCB 7090. Advanced skills for critically evaluating science to prepare and present research grants in the biological sciences. Graded S/U.  
*COS-Biology*

**PEM 5408C. Controlling Classroom Violence**

3(2,1). PR: Graduate standing; certified teacher. A hands-on course dealing with controlling disruption and violence as well as how teachers can protect themselves.  
*ED-Child, Family & Comm Sci*

**PEO 5645C. Coaching Football**

3(2,1). PR: C.I. Advanced principles and methods common to the coaching of football. Includes teaching and training methods, organization, motivation and strategies.  
*ED-Child, Family & Comm Sci*

**PET 5355. Exercise and Health**

3(3,0). PR: Admission to master's program or certificate program. Will provide educators an in-depth understanding of energy pathways, and neuromuscular, cardiovascular, and respiratory systems during exercise. Emphasis on understanding principles of exercise adaptations and applying those principles to fitness/wellness settings.  
*ED-Child, Family & Comm Sci*

**PET 5635. Advanced Human Injuries**

3(3,0). PR: PET 2622C or C.I. The application of medical knowledge to sport with the emphasis on preserving the health of an athlete before, during and after performance.  
*ED-Child, Family & Comm Sci*

**PET 5766. Advanced Coaching Theory**

3(3,0). PR: C.I. Advanced study of theories and methods of coaching for optimum sports performance.  
*ED-Child, Family & Comm Sci*

**PET 5931. Current Issues and Trends in Physical Education and Sport**

3(3,0). PR: Admission to the Physical Education graduate program or C.I. Examination of the current issues and trends encountered by professionals in physical education and sport.  
*ED-Child, Family & Comm Sci*

**PET 6062C. Perceptual Motor Development**

3(2,1). Theoretical and laboratory study of the relationship between perceptual motor development and learning. Special attention is given to identifying and remediating motor deficit.  
*ED-Child, Family & Comm Sci*

**PET 6086. Exercise As Preventive Medicine**

3(3,0). PR: PET 6388. Prevention of select major risk hazards through exercise intervention.  
*ED-Child, Family & Comm Sci*

**PET 6088. Wellness Development in Children**

3(3,0). An analysis of wellness characteristics and concepts as they affect the wellness of children.  
*ED-Child, Family & Comm Sci*

**PET 6089. Personal and Organizational Wellness**

3(3,0). Professional implications of the U.S. Wellness Movement and assessment of the nature and quality of corporate and other instructional programming.  
*ED-Child, Family & Comm Sci*

**PET 6217. Peak Performance in Sports**

3(3,0). PR: Admission to graduate certificate in Coaching or C.I. An in-depth study of mental and physical performance, including mental rehearsal, motivation, effort, and persistence.  
*ED-Child, Family & Comm Sci*

**PET 6330. Kinesiology**

3(3,0). PR: Admission to the graduate certificate in Coaching or C.I. The study of man in motion with emphasis on temporal analyses; kinematics with two-and three-dimensional observations and kinetic analyses of the relationship between internal and external forces in translation and rotational movements.  
*ED-Child, Family & Comm Sci*

**PET 6357C. Environmental Perturbation and Human Performance**

3(3,2). A study of physiological adaptation resulting from prescribed physical activity programs.  
*ED-Child, Family & Comm Sci*

**PET 6366. Exercise, Nutrition and Weight Control**

3(3,0). PR: Graduate standing or C.I. Explores the interrelationship between nutrition, energy metabolism and exercise performance.

*ED-Child, Family & Comm Sci*

**PET 6367. Bioenergetics of Human Movement and Performance**

3(3,0). PR: PET 4351C (or equivalent). Analysis of substrate metabolism at rest, during acute exercise and following exercise training.

*ED-Child, Family & Comm Sci*

**PET 6381. Physiology of Neuromuscular Mechanisms**

3(3,0). Human body morphology and function critical in producing motion, strength, power, and endurance.

*ED-Child, Family & Comm Sci*

**PET 6388. Cardiovascular Physiology**

3(3,0). PR: Anatomy and Physiology or equivalent. Operation of the cardiovascular system in vivo.

*ED-Child, Family & Comm Sci*

**PET 6391. Training and Conditioning Techniques for Coaches**

3(3,0). PR: PET 5355. Knowledge and application of training and conditioning as it relates to the improvement of physical athletic performance and fitness.

*ED-Child, Family & Comm Sci*

**PET 6416. Administrative Principles of Sport and Physical Education**

3(3,0). PR: Admission to master's program or certificate program. Will direct physical educators and coaches towards a practical understanding of strategies and tools necessary for effective management in sport and physical education.

*ED-Child, Family & Comm Sci*

**PET 6505. Wellness Technology in Physical Education**

3(3,0). PR: Graduate standing in Education or C.I. Knowledge to perform health risk appraisals, fitness assessments utilizing wellness technology in a physical education setting.

*ED-Child, Family & Comm Sci*

**PET 6515C. Measurement in Kinesiology and Physical Education**

3(3,0). Techniques of measurement and evaluation of human performance and their applications to physical education.

*ED-Child, Family & Comm Sci*

**PET 6521. Exercise Physiology Instrumentation**

3(3,0). Instrumentation management and assessment protocols related to select exercise physiological parameters: anthropometric, bioenergetic, blood lactate, joint flexibility, and muscle rheology, strength and fatigue curve measurements.

*ED-Child, Family & Comm Sci*

**PET 6645. Advanced Studies in Adapted Physical Education**

3(3,1). PR: EEX 5050. Survey course that addresses the development, educational, and socialization needs of exceptional children. A minimum of 15 observation hours are required.

*ED-Child, Family & Comm Sci*

**PET 6646. Methods and Curriculum in Adapted Physical Education**

4(3,1). PR: PET 6645, PET 6655. Individualized educational and developmental programming for exceptional children. Presents models of service delivery and instruction. Practicum required.

*ED-Child, Family & Comm Sci*

**PET 6647. Program Development in Adapted Physical Education**

3(3,1). PR: C.I. Development of appropriate physical education programs for exceptional children. Course includes teacher-consultant, collaboration, in-service training, legislative issues, resource utilization.

*ED-Child, Family & Comm Sci*

**PET 6655. Developmental Aspects of Motor Disabilities**

3(3,1). PR: C.I. Addresses developmental aspects of motor and health disabilities. A developmental focus is presented. Observation required.

*ED-Child, Family & Comm Sci*

**PET 6690. Exercise Testing and Prescription for Special Populations**

3(3,0). PR: PET 6388. Designed to provide the student the basic understanding of exercise testing and prescription as it pertains to special populations.

*ED-Child, Family & Comm Sci*

**PET 6910. Problem Analysis - Review of Literature**

3(3,0). PR: EDF 6432 and C.I. Comprehensive review of literature related to a selected topic in physical education; identification, analysis, and evaluation of developments, issues, and research problems. May be repeated for credit.

*ED-Child, Family & Comm Sci*

**PET 6946. Practicum, Clinical Practice**

3(3,0).

*ED-Child, Family & Comm Sci*

**PET 7365. Cardiovascular Dynamics During Exercise**

3(3,0). PR: Doctoral standing, PET 6388 or equivalent, or C.I. An examination of the cardiovascular regulatory mechanism responsible for the adjustment to acute and chronic exercise.

*ED-Child, Family & Comm Sci*

**PET 7368. Regulation of Metabolism During Exercise**

3(3,0). PR: Doctoral standing or C.I. An examination of the metabolic regulatory mechanism responsible for the adjustment to acute and chronic exercise.

*ED-Child, Family & Comm Sci*

**PET 7535. Research & Experimental Design in Exercise Physiology**

3(3,0). PR: Doctoral standing or C.I. An examination of different experimental designs and application to exercise physiology research.

*ED-Child, Family & Comm Sci*



**PGY 5108C. Advanced Techniques and Concepts in Photography**  
3(2,4). PR: PGY 2401C, PGY 3410C and PGY 4420C, or admission into MFA graduate program. Advanced techniques and concepts in photography, introducing historic and contemporary photographic works. May be used in the degree program a maximum of three times.  
*CAH-Art*

**PHC 6000. Epidemiology**  
3(3,0). PR: Graduate status. A study of the distribution and determination of diseases and injuries in human populations.  
*HPA-Health Professions*

**PHC 6003. Epidemiology of Chronic Diseases**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. Selected topics in chronic disease with critical analysis of the current epidemiologic literature is covered; opportunity to study methodological issues, contemporary findings and future direction of research.  
*HPA-Health Professions*

**PHC 6010. Quantitative Methods in Epidemiology**  
3(3,0). PR: Admission to MS Health Sciences graduate program and PHC 6000. Principles of managerial epidemiology, quantitative methods, application of prostatistics, use of personal computers to handle data and solve problems.  
*HPA-Health Professions*

**PHC 6020. Introduction to Clinical Trials**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. An overview of clinical trials theory and design characteristics provides the background necessary to conduct single center and multi-center studies.  
*HPA-Health Professions*

**PHC 6146. Health Planning and Policy**  
3(3,0). Review of the determinants of the revolution of the health care system in the United States; analysis of public health, preventive medicine, and therapeutic medicine in terms of quality, access, and cost; methodologies and issues in comprehensive health planning; and trends in health policy development.  
*HPA-Health Professions*

**PHC 6160. Health Care Finance**  
3(3,0). PR: Graduate status. The identification of resources available to health care institutions, allocation of resources, and control of resource expenditures.  
*HPA-Health Professions*

**PHC 6164. Health Care Finance II**  
3(3,0). PR: PHC 6160. Course facilitates the development of strategic financial plans and its application to current health care management issues.  
*HPA-Health Professions*

**PHC 6411. Health and Society**  
3(3,0). Understanding health and illness as defined by patients, providers, and other persons in the social system.  
*HPA-Health Professions*

**PHC 6420. Case Studies in Health Law**  
3(3,0). Health law including patient care, liability, malpractice, workmen's compensation, and legal responsibilities of health personnel.  
*HPA-Health Professions*

**PHC 6706. Introduction to Clinical Research**  
3(3,0). PR: Admission to Health Sciences MS Clinical and Lifestyle Sciences Track or C.I. This course offers an introductory overview to clinical research. Course content focuses on key concepts beginning with an overview of the conception of research question.  
*HPA-Health Professions*

**PHI 5225. Philosophy of Language**  
3(3,0). PR: Admission to graduate certificate in Cognitive Sciences or C.I. Philosophy of the nature of language and relationships between language, reality, cognition, and culture.  
*CAH-Philosophy*

**PHI 5325. Topics in Philosophy of Mind**  
3(3,0). PR: Admission into graduate certificate program in Cognitive Sciences or C.I. Contemporary issues in philosophy of mind, including explanatory gap, and the problem of other minds.  
*CAH-Philosophy*

**PHI 5327. Topics in the Cognitive Sciences**  
3(3,0). PR: Admission to graduate certificate program in Cognitive Sciences or C.I. Theoretical issues and empirical studies in the cognitive sciences, including contemporary discussions of mind, brain, artificial intelligence, pathologies, behavioral capacities.  
*CAH-Philosophy*

**PHI 5328. Philosophies of Embodiment**  
3(3,0). PR: Admission to graduate certificate in Cognitive Sciences or C.I. Relations among mind, body, and nature. Knowledge of self, world and others as articulated by Western philosophy, with special emphasis on embodied cognition.  
*CAH-Philosophy*

**PHI 5329. Philosophy of Neuroscience**  
3(3,0). PR: Admission to graduate certificate in Cognitive Sciences or C.I. Neurophilosophy, including discussion of promises and limitations of neuroscience for understanding of the mind.  
*CAH-Philosophy*

**PHI 5340. Research Methods in the Cognitive Sciences**  
3(3,0). PR: Admission to graduate certificate program in Cognitive Sciences or C.I. Interdisciplinary research methods in the cognitive sciences.  
*CAH-Philosophy*

**PHI 5627. Theoretical and Applied Ethics**  
3(3,0). PR: Senior undergraduate standing and at least one of the following: PHI 3670, PHI 3638, or graduate standing or C.I. A seminar in theoretical and applied ethics with emphasis on application in professional fields. Variable content.  
*CAH-Philosophy*

**PHI 5634. Medical Ethics**

3(3,0). PR: Graduate standing or C.I. Ethics for practitioners of clinical medicine, health care delivery and medical research.

*CAH-Philosophy*

**PHI 5665. Knowledge, Responsibility, and Society**

3(3,0). PR: Senior undergraduate standing and at least one of the following: PHI 3670, PHI 3638, PHI 4300, PHI 4341, PHI 4400, PHI 4633, PHI 4931 or Graduate standing. A seminar exploring the relationship between ethics and epistemology with application to social concerns. Variable content.

*CAH-Philosophy*

**PHI 5687. Ethics in Science and Technology**

3(3,0). PR: Graduate standing or C.I. The relationship between ethics and the pursuit and application of human knowledge, emphasizing the responsibility of scientists to society.

*CAH-Philosophy*

**PHM 5035. Environmental Philosophy**

3(3,0). PR: PHI 3640, PHI 2630, graduate status or senior standing, or C.I. This course will provide an in-depth examination of the major contemporary positions in environmental philosophy, including deep ecology, ecofeminism, and social ecology.

*CAH-Philosophy*

**PHT 5003. Foundations of Physical Therapy I**

2(2,0). PR: Admission to the Physical Therapy program. Introduction to the profession of physical therapy.

*HPA-Health Professions*

**PHT 5005. Foundations of Physical Therapy II**

2(2,0). PR: Foundations of Physical Therapy I. Psychosocial aspects of disability. Focus on cultural diversity issues, communication skills, and different styles of learning and teaching.

*HPA-Health Professions*

**PHT 5115. Gross Anatomy/Neuroscience I**

2(2,0). PR: Admission to Physical Therapy program. In-depth study of human morphology emphasizing the back, spinal cord, cranial nerves, and upper and lower extremities. Regional cadaver dissection.

*HPA-Health Professions*

**PHT 5118. Gross Anatomy/Neuroscience II**

2(2,0). PR: Gross Anatomy/Neuroscience I and Lab; CR Gross Anatomy Neuroscience II Lab. In-depth study of human morphology emphasizing the brain, the cervical spine, pelvis, and the internal organs.

*HPA-Health Professions*

**PHT 5125. Clinical Kinesiology**

2(2,0). CR: PHT 5125L. Investigates the mechanical aspects of human movement, joint mechanics of the upper and lower extremity, the vertebral column and tissue mechanics of relevant human tissues.

*HPA-Health Professions*

**PHT 5125L. Clinical Kinesiology Lab**

2(0,2). CR: PHT 5125. Concerned with the evaluation and practical application of aspects of human movement, joint mechanics of the upper and lower extremity, vertebral column and soft tissues.

*HPA-Health Professions*

**PHT 5156L. Physiology of Therapeutic Exercise Lab**

2(0,4). CR: PHT 6156C. Lab course emphasizing the clinical application of exercise physiology.

*HPA-Health Professions*

**PHT 5218. Theories and Procedures I**

2(2,0). PR: CR Theories and Procedures I Lab. Theories of physical agents, heat, light, cold, water, sound, and massage; problem solving rationale and selection of interventions for inflammation, pain, edema, and weakness.

*HPA-Health Professions*

**PHT 5218L. Theories and Procedures I lab**

1(0,2). PR: CR Theories and Procedures I. Lab course on the clinical applications of heat, light, cold, water, sound, and massage.

*HPA-Health Professions*

**PHT 5240. Physical Assessment**

1(1,0). PR: Physical Assessment Lab. Extensive theory and practice in the examination of the patient. Incorporate a systems approach, utilizing screening, and patient problem solving.

*HPA-Health Professions*

**PHT 5240L. Physical Assessment Lab**

2(0,4). PR: CR Physical Assessment. Lab course emphasizing the examinations required to perform an evaluation of physical therapy patient.

*HPA-Health Professions*

**PHT 5241. Therapeutic Exercises I**

2(2,0). PR: CR Therapeutic Exercises I Lab. Theory of developing, implementing, and evaluating a therapeutic exercise program for patients with musculoskeletal dysfunction.

*HPA-Health Professions*

**PHT 5241L. Therapeutic Exercise Lab I**

2(0,4). PR: Therapeutic Exercise I. Lab course emphasizing therapeutic exercise skills for the treatment of patients with musculoskeletal dysfunction.

*HPA-Health Professions*

**PHT 5260. Patient Care Skills**

2(2,0). CR: Patient Care Skills Lab. Affective, cognitive, and psychomotor skills, regarding patient care. Basic skills of patient care, transfers, mobility skills, draping, gait training.

*HPA-Health Professions*

**PHT 5260L. Patient Care Skills Lab**

1(0,2). CR: Patient Care Skills. Skills of patient care, transfers, mobility skills.

*HPA-Health Professions*

**PHT 5718. Neurological Physical Therapy**  
2(2,0). PR: CR Neurological Physical Therapy Lab. Analysis of selected neuromotor theories and their clinical applications. Examinations and interventions for the evaluation and treatment of neurological patients presented.  
*HPA-Health Professions*

**PHT 5718L. Neurological Physical Therapy Lab**  
1(0,2). PR: CR Neurological Physical Therapy. Lab Course emphasizing the clinical application of selected neuromotor theories.  
*HPA-Health Professions*

**PHT 6070C. Radiology/Imaging for Physical Therapy**  
4(3,1). PR: Admission to DPT program. A diagnostic imaging course focusing on clinical implications in rehabilitation. The focus will be on patients with neurological and orthopedic disorders.  
*HPA-Health Professions*

**PHT 6115C. Gross Anatomy/Neuroscience I**  
6(3,6). PR: Admission to DPT program. Study of human anatomy via lecture and cadaver dissection emphasizing upper and lower extremity, musculoskeletal, peripheral vascular and peripheral nervous systems, thoracic and abdominopelvic cavities.  
*HPA-Health Professions*

**PHT 6118C. Gross Anatomy/Neuroscience II**  
6(3,6). PR: Gross Anatomy/Neuroscience I. Comprehensive study of anatomy and physiology of the nervous system to develop DPT students' improved treatment strategies for patients with neurological problems.  
*HPA-Health Professions*

**PHT 6156C. Applied Human Physiology for Health Sciences**  
5(4,5). PR: Admission to Physical Therapy Program or M.S.in Health Sciences. Course provides in-depth study of human cardiovascular, hemopoietic, respiratory, gastrointestinal, renal and reproductive systems with emphasis on mechanisms responsible for maintaining homeostasis.  
*HPA-Health Professions*

**PHT 6219. Theories and Procedures II**  
2(2,0). PR: Theories and Procedures I and lab; CR: Theories and Procedures II Lab. Continuation of Theories and Procedures I. Focus on electrodiagnosis and electrophysiologic examinations and the interventions used in the treatment of pain and dysfunction.  
*HPA-Health Professions*

**PHT 6219L. Theories and Procedures II Lab**  
1(0,2). PR: Theories and Procedures I and lab; CR: Theories and Procedures II. Lab course focusing on electrodiagnosis and electrophysiologic examinations, and the interventions used in the treatment of pain and dysfunction.  
*HPA-Health Professions*

**PHT 6242. Orthopedic Physical Therapy**  
2(2,0). PR: CR Orthopedic Physical Therapy Lab. Examination and interventions for the evaluation and treatment of specific orthopedic cases and injuries presented.  
*HPA-Health Professions*

**PHT 6242L. Orthopedic Physical Therapy Lab**  
1(0,2). PR: CR Orthopedic Physical Therapy. Lab course emphasizing the examinations and interventions for the evaluation and treatment of specific orthopedic cases and injuries.  
*HPA-Health Professions*

**PHT 6245. Therapeutic Exercise II**  
3(3,0). PR: Therapeutic Exercise I; CR: Therapeutic Exercise II Lab. Exploration of the various therapeutic exercise modalities, and their application to the rehabilitation course of treatment.  
*HPA-Health Professions*

**PHT 6245L. Therapeutic Exercise II Lab**  
1(0,2). PR: Therapeutic Exercise I and Lab; CR: Therapeutic Exercise II. Lab course emphasizing the use of the various therapeutic exercise modalities.  
*HPA-Health Professions*

**PHT 6306. Pathology/Pharmacology**  
4(4,0). PR: Admission to DPT program. Organized seminars on the pathophysiology and clinical manifestations and treatments of various medical conditions as they relate to medical management in physical therapy practice.  
*HPA-Health Professions*

**PHT 6322C. Pediatric Physical Therapy**  
3(2,2). PR: Admission to DPT program. Study of the normal neurodevelopmental sequences for pediatric clinical assessment and physical therapy intervention provided to clients with abnormal diseases and dysfunction.  
*HPA-Health Professions*

**PHT 6374. Gerontology in Physical Therapy**  
2(2,0). PR: Admission to DPT program. Normal aging processes and health status of older people. Clinical decision making is emphasized in the care of the elderly.  
*HPA-Health Professions*

**PHT 6381C. Cardiopulmonary Physical Therapy**  
2(2,1). PR: Admission to DPT program. Examinations and interventions for the management of chronic and acute cardiopulmonary problems. Teaching patient strategies for preventing/managing dysfunction.  
*HPA-Health Professions*

**PHT 6521. Management of Physical Therapy Services**  
3(3,0). PR: Admission to DPT program. Planning, organizing, delivering and evaluating physical therapy services within a health care system, including quality management, third party payers, DRG's and legislative impact.  
*HPA-Health Professions*

**PHT 6606. Research Methods in Physical Therapy**  
2(2,0). PR: Admission to DPT program. Methods of research applied to clinical environment of physical therapy. Coverage of the language, logic, design and analysis of clinical research.  
*HPA-Health Professions*

**PHT 6618. Research Applications in Physical Therapy**  
2(2,0). PR: Research methods in Physical Therapy - PHT 6606. To evaluate research studies, focus on evidence-based practice. SPSS and principles of epidemiology will be introduced.  
*HPA-Health Professions*

**PHT 6716C. Advanced Orthopedic Physical Therapy**  
2(2,1). PR: Orthopedic Physical Therapy; CR: Advanced Orthopedic Physical Therapy Lab. Specific rehabilitative protocols regarding particular orthopedic injuries and illnesses are presented. Focus on the previous course work in therapeutic modalities, anatomy, physiology, and therapeutic exercises incorporated.  
*HPA-Health Professions*

**PHT 6717C. Functional Rehabilitation**  
2(2,1). PR: Admission to DPT program. Physical therapy assessment and intervention with spinal cord injury clients which include wheelchair, home and business evaluation and modifications. Include prosthetics and orthotics.  
*HPA-Health Professions*

**PHT 6719. Advanced Neurological Physical Therapy**  
2(2,0). PR: Neurological Physical Therapy and Lab; CR: Advanced Neurological Physical Therapy Lab. Examinations and interventions for the evaluation and treatment of the neurological patient. Emphasis on patients with spinal cord injury and neurological diseases.  
*HPA-Health Professions*

**PHT 6719L. Advanced Neurological Physical Therapy Lab**  
1(0,2). PR: Neurological Physical Therapy and Lab; CR: Advanced Neurological Physical Therapy. Course Emphasizing examinations and interventions for the evaluation and treatment of patients with neurological disease. Emphasis on patients with spinal cord injury and neurological disease.  
*HPA-Health Professions*

**PHT 6720. Wound Care and Professional Issues**  
1(1,0). PR: Admission to Physical Therapy program. Instruction in specialized care provided by physical therapists and in professional issues relevant to the contemporary practice.  
*HPA-Health Professions*

**PHT 6723C. Physical Therapy Integration II**  
2(2,1). PR: Physical Therapy Integration I. Focus on examinations and interventions for the evaluation and treatment of the spine. Various theoretical models explored. Case studies used for integration of information.  
*HPA-Health Professions*

**PHT 6805C. Clinical Education I**  
3(1,15). PR: Admission to DPT program. Collaborative course where students meet to analyze, synthesize and discuss current professional, ethical and moral decision-making in physical therapy setting, culminating in a six-week clinical internship. Graded S/U.  
*HPA-Health Professions*

**PHT 6823. Advanced Clinical Applications II**  
1(0,12). PR: Advanced Clinical Application I. Full-time 12 week internship under the supervision of a physical therapist. Student practices and integrates skills with treatment knowledge from previous course work. Graded S/U.  
*HPA-Health Professions*

**PHT 7722C. Physical Therapy Integration I**  
2(2,1). PR: Admission to DPT program. This course emphasizes the differential diagnostic skills required of a physical therapist when deciding if physical therapy care is appropriate.  
*HPA-Health Professions*

**PHT 7822C. Advanced Clinical Education I**  
6(1,40). PR: Admission to DPT program. Collaborative course for 2nd year students to meet, analyze, synthesize and discuss current ethical, legal, and moral decision-making in physical therapy clinical setting culminating in internship. Graded S/U.  
*HPA-Health Professions*

**PHY 5015C. Physics for Teachers II**  
3(2,2). PR: Graduate status or senior standing or C.I. "Hands-on" lecture-laboratory course. Dynamics, electricity, magnetism, optics, nuclear radiation.  
*COS-Physics*

**PHY 5100. Topics in Contemporary Physics for Teachers**  
1(1,0). PR: Graduate status or senior standing or C.I. The study of recent findings in a selected area such as particle physics, surface physics, planetary atmospheres, lasers, geophysics, etc. May be repeated for credit.  
*COS-Physics*

**PHY 5140C. Ion-Solid Interactions**  
3(3,2). PR: PHY 4604 or PHY 4324, graduate status or senior standing, or C.I. Physical principals and related scientific and technological applications of ion-solid interactions.  
*COS-Physics*

**PHY 5200C. Newtonian Mechanics for Teachers**  
1(0.5,1.5). PR: Graduate status or senior standing or C.I. A lab, lecture, demonstration course studying selected topics in classical mechanics.  
*COS-Physics*

**PHY 5300C. Electricity for Teachers**  
1(0.5,1.5). PR: Graduate status or senior standing or C.I. Circuits, multimeters, oscilloscopes, circuit elements.  
*COS-Physics*

**PHY 5302C. Electromagnetism for Teachers**

1(0.5,1.5). PR: Graduate status or senior standing or C.I. Gauss' Law, Biot-Savart Law, Ampere's Law, Faraday's Law, Lenz's law, motors, generators, AC circuits and Maxwell's Equations.

*COS-Physics*

**PHY 5346. Electrodynamics I**

3(3,0). PR: PHY 4324, and graduate status or senior standing or C.I. Boundary value problems in electrostatics and magnetostatics. Maxwell's equations. EM fields in matter, wave generation and propagation; wave guides, resonant cavities.

*COS-Physics*

**PHY 5401C. Optics for Teachers**

1(0.5,1.5). PR: Graduate status or senior standing or C.I. Geometrical and physical optics, spectrometers and lasers.

*COS-Physics*

**PHY 5455. Modern X-ray Science**

3(3,0). PR: Graduate status or senior standing or C.I. An introduction to the science and applications of modern X-ray optics, X-ray lasers, etc., with a review of basic properties of X-rays.

*COS-Physics*

**PHY 5466C. Wave Motion for Teachers**

1(0.5,1.5). PR: Graduate status or senior standing or C.I. Water waves, waves on strings, sound and vibrations.

*COS-Physics*

**PHY 5500C. Thermal Physics for Teachers**

1(0.5,1.5). PR: Graduate status or senior standing or C.I. Engines, heat pumps, kinetic theory, phase changes, radiation, weather.

*COS-Physics*

**PHY 5524. Statistical Physics**

3(3,0). PR: PHY 3513, STA 3032, and graduate status or senior standing or C.I. A study of physical concepts and methods appropriate for the description of systems involving many particles. Ensemble theory, partition functions. Maxwell Boltzmann, Bose-Einstein, Fermi-Dirac statistics.

*COS-Physics*

**PHY 5606. Quantum Mechanics I**

3(3,0). PR: PHY 4605, and graduate status or senior standing or C.I. Basic postulates of quantum mechanics, operators, eigenvalues, parity, potential wells, harmonic oscillator, time dependent and time independent Schrodinger equation, matrix formulation, and time independent perturbation theory.

*COS-Physics*

**PHY 5650. Introduction to Quantum Computation**

3(3,0). PR: C.I. Theoretical fundamentals and physical implementations of quantum computation for science and engineering students.

*COS-Physics*

**PHY 5817L. Building Physics Apparatus**

1(0,3). PR: Graduate standing or senior standing and C.I. Hands-on shop course. Focus will be machine shop practice with possible extension to printed circuit boards and glass work.

*COS-Physics*

**PHY 5846C. Methods of Experimental Physics**

3(3,3). PR: Graduate status or senior standing or C.I. Introduction to methods of experimental physics, including instrumental design, data acquisition, vacuum, cryogenics, sample preparation, nuclear physics, transport, and spectroscopy.

*COS-Physics*

**PHY 5933. Selected topics in biophysics of macromolecules**

3(3,0). PR: PHY 3101, CHM 2046, and graduate status or senior standing or C.I. Physical concepts and techniques used in the spectroscopic study of dynamic structure and function of biological macromolecules such as proteins; Connections with other complex systems. May be repeated for credit.

*COS-Physics*

**PHY 6246. Classical Mechanics**

3(3,0). PR: C.I. Variational principles. Lagrange, Hamiltonian, and Poisson bracket formulations of mechanics. Hamilton's principle of least action. Hamilton-Jacobi theory. Perturbation theory. Continuous systems. Chaos.

*COS-Physics*

**PHY 6347. Electrodynamics II**

3(3,0). PR: PHY 5346 or C.I. Dynamics of charged particles in electromagnetic fields. Antennas; radiation by moving charges; magnetohydrodynamics; multipole radiation and electrostatics of materials.

*COS-Physics*

**PHY 6353. Accelerator Physics**

3(3,0). PR: PHY 6347. Dynamics of charged particles in electromagnetic fields, electron optics, details of the electrostatic accelerator, the linear accelerator, and cyclic accelerators; properties of cavities and orbiting electrons; new accelerator schemes, including the free electron laser.

*COS-Physics*

**PHY 6355. Physics of Free Electrons**

3(3,0). PR: PHY 6347. Interaction between electrons and fields, transmission lines, microwave tubes and waveguides, synchrotron radiation and undulators, the free electron laser in both the Compton and Raman regimes.

*COS-Physics*

**PHY 6420. First Principles Computational Methods in Condensed Matter Physics**

3(3,0). PR: PHY 5606 Quantum Mechanics I. Introduction to density functional theory and first principles computational methods used in modern condensed matter physics with hand-on sessions using computers.

*COS-Physics*

**PHY 6624. Quantum Mechanics II**

3(3,0). PR: PHY 5606 or C.I. Time dependent perturbation theory, exchange symmetry, Dirac Equation, second quantization, and scattering theory.  
*COS-Physics*

**PHY 6667. Quantum Field Theory I**

3(3,0). PR: PHY 6347 and PHY 6624 or C.I. Second quantization and fields, relativistic equations, path integral quantization, gauge fields.  
*COS-Physics*

**PHY 6673. Advanced Quantum Mechanics**

3(3,0). PR: PHY 6624. Fields, radiation, Klein-Gordon equation, Dirac equation, relativistic quantum scattering, photon propagator.  
*COS-Physics*

**PHY 6939. Physics Research Seminar**

3(3,0). PR: Graduate standing or C.I. Modern Experimental and Theoretical Research Methods and Current Topics will be presented by local practitioners from UCF's Department of Physics.  
*COS-Physics*

**PHY 6964. Graduate Candidacy Workshop**

3(3,0). PR: PHY 5606, PHY 6624, PHZ 5156, AND PHY 5524. Preparation for the Ph.D. candidacy exam. Graded S/U.  
*COS-Physics*

**PHY 7423. Physics of Nanostructures**

3(3,0). PR: PHY 6624 or C.I. Electronic properties of mesoscopic nanostructures, conductance as transmission, s-matrix and Green's functions, localization, universal conductance fluctuations, single electron tunneling, chaos, nonequilibrium transport.  
*COS-Physics*

**PHY 7669. Quantum Field Theory II**

3(3,0). PR: PHY 6667 or C.I. Regularization, renormalization, spontaneous symmetry breaking, unification, topological objects, supersymmetry.  
*COS-Physics*

**PHZ 5156. Computational Physics**

3(3,0). PR: PHZ 3151 or C.I. Computational methods applied to the solution of problems in many branches of physics. May be repeated for credit.  
*COS-Physics*

**PHZ 5304. Nuclear and Particle Physics**

3(3,0). PR: PHY 4604 or equivalent, and graduate status or senior standing or C.I. Particles and nuclei, symmetries and conservation laws, interactions, models.  
*COS-Physics*

**PHZ 5405. Condensed Matter Physics**

3(3,0). PR: PHY 4604, PHY 3101, and graduate status or senior standing or C.I. Crystal lattice cell structure, phonons, free electron model, band theory of solids, Fermi surface, solid state applications, and polymers.  
*COS-Physics*

**PHZ 5425C. Electron Solid Interactions**

3(3,3). PR: Undergraduate senior or graduate status or C.I. The physics and applications of electron interactions with solids. Classroom and hands-on laboratory content.  
*COS-Physics*

**PHZ 5432. Introduction to Soft Condensed Matter Physics**

3(3,0). PR: PHY 3513 or C.I. Introduction to the physics of polymers, colloids, surfactants using basic tools of statistical mechanics. Graded S/U.  
*COS-Physics*

**PHZ 5437. Nanoscale Surface Physics**

3(3,0). PR: Undergraduate Quantum Mechanics at the level of PHY 4604 or C.I. Overview of physical and chemical properties of nanoscale surfaces.  
*COS-Physics*

**PHZ 5505. Plasma Physics**

3(3,0). PR: PHY 4324, and graduate status or senior standing or C.I. Introduction to theory and experimental basis of both weakly and highly ionized plasmas. Instabilities, plasma waves, nonlinear effects, controlled thermonuclear fusion.  
*COS-Physics*

**PHZ 5600. Special Relativity for Teachers**

1(1,0). PR: Graduate status or senior standing or C.I. Length contraction, time dilation, simultaneity, conservation of mass-energy, conservation of momentum, Compton scattering.  
*COS-Physics*

**PHZ 6234. Atomic Physics**

3(3,0). PR: PHY 6624 or OSE 6347. Brief review of spectroscopy, photoionization, inner shell processes, Auger effect, atom-atom collisions, electron-atom collisions, spin polarization.  
*COS-Physics*

**PHZ 6426. Condensed Matter Physics I**

3(3,0). PR: PHY 5606, and either PHY 6624 or OSE 6347. Quantum theory of crystalline solids: crystals, electronic band structure, metals, insulators, semiconductors, electron interactions in solids, lattice dynamics.  
*COS-Physics*

**PHZ 6428. Condensed Matter Physics II**

3(3,0). PR: PHZ 6426. Many-body theory: Green's functions, Feynman diagrams, screening in the electron gas, linear response theory, magnetism, conductivity, electron-phonon interactions, superconductivity, superfluids.  
*COS-Physics*

**PLA 5587. Current Issues in Cyberlaw**

3(3,0). PR: Graduate standing or C.I. Advanced examination and discussion of free speech, copyright, trademark, patent and privacy issues in the online environment through interactive class discussions, online discussions, postings, case study reviews, and legal research projects.  
*HPA-Criminal Justice/Legal St*

**PLA 5937. Seminar in Contemporary Legal Problems**  
3(1,2). PR: C.I. Analysis of current trends in legislation and court decisions and their significance to American society.  
*HPA-Criminal Justice/Legal St*

**PLA 6486. Administrative Law for Criminal Justice Professionals**  
3(3,0). PR: Graduate standing or C.I. The study of administrative law and procedure on the federal, state and local levels, with particular emphasis on Florida criminal justice administration.  
*HPA-Criminal Justice/Legal St*

**POS 6045. Seminar in American National Politics**  
3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Examines major aspects of the American system, including mass behavior, public opinion, and political institutions.  
*COS-Political Science*

**POS 6127. State Politics**  
3(3,0). PR: Graduate or postbac status. The graduate course in state politics surveys political behavior, processes, institutions and policies among the fifty states.  
*COS-Political Science*

**POS 6174. Seminar in Southern Politics**  
3(3,0). PR: Graduate standing or C.I. Will provide an overview of the political and social changes that have occurred in the American South in the post-World War II period.  
*COS-Political Science*

**POS 6207. Political Behavior**  
3(3,0). PR: Graduate status. A review of theory and findings in regard to mass political behavior, including participation, voter choice, public opinion, collective action, and communication.  
*COS-Political Science*

**POS 6403. Teaching American Political Institutions**  
3(3,0). PR: Postbac or graduate status. Seminar will equip students with essential knowledge of American politics and explore technologies for transfer of this knowledge into the secondary and college level classroom.  
*COS-Political Science*

**POS 6415. The American Presidency**  
3(3,0). PR: Graduate standing or C.I. Presidency research with attention to historical, personal, institutional, and political development.  
*COS-Political Science*

**POS 6427. Congress and the Legislative Process**  
3(3,0). PR: Graduate standing or C.I. Examination of Congress as a dynamic institution with emphasis on general legislative procedures, legislator recruitment, institutional rules, legislative norms, and the committee system.  
*COS-Political Science*

**POS 6639. Seminar in Public Law and Judicial Politics**  
3(3,0). PR: Graduate or post bac status. This course is intended to acquaint students broadly with the scholarly literature in the subfield of Public law. It surveys the meaning of the field and its development, using books and articles to illustrate the major research and teaching concentrations in the subfield.  
*COS-Political Science*

**POS 6743. Geographic Tools for Political Science Research**  
3(3,0). PR: Graduate standing or C.I. Provides an introduction to the theoretical assumptions, analytical possibilities and application of geographic tools of analysis for political science research.  
*COS-Political Science*

**POS 6746. Quantitative Methods in Political Research**  
3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Methods of model building and research design, including conceptualization and measurement of political variables; techniques of data collection and quantitative analysis and computer usage.  
*COS-Political Science*

**POS 6747. Advanced Topics in Quantitative Political Analysis**  
3(3,0). PR: Admission to the graduate program and successful completion of POS 6746, or equivalent, or C.I. Advanced topics in quantitative political analysis, including OLS variants, regression problems, time series, limited dependent variables and SPSS.  
*COS-Political Science*

**POS 6938. Special Topics/Political Analysis**  
3(3,0). This course title covers all political analysis special topics courses which are not listed in the catalog with a course number. May be repeated for credit only when course content is different.  
*COS-Political Science*

**POT 6007. Seminar in Political Theory**  
3(3,0). PR: Admission to a graduate degree-seeking program or C.I. An examination of analytic and normative theories of politics and society, using selected topics as a substantive focus.  
*COS-Political Science*

**PPE 5055. Personality Theories**  
3(3,0). PR: Graduate status or senior standing or C.I. Critical theoretical models of personality development with applications to counseling, psychotherapy and psychological assessment.  
*COS-Psychology*

**PSB 5005. Physiological Psychology**  
3(3,0). PR: PSB 3002 and graduate status or senior standing or C.I. An advanced survey of the physiological basis of behavior, emphasizing the relationship between the nervous system and behavior.  
*COS-Psychology*

**PSB 6446. Advanced Abnormal and Clinical Psychopharmacology**

3(3,0). PR: Graduate admission and C.I. Diagnosis of psychopathology and drug treatment of these disorders. Examination of the efficacy of psychoactive drugs.  
*COS-Psychology*

**PSY 5605. History and Systems of Psychology**

3(3,0). PR: Acceptance to Clinical Psychology PhD program or C.I. An examination of modern American psychology from its origins in the late 19th century to the present time. This course is intended for the Ph.D. in Clinical Psychology; in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**PSY 6216. Advanced Research Methodology I**

4(3,2). PR: Graduate admission and C.I. Logic and procedures of psychological research and evaluation; application of experimental and non-experimental techniques in analyzing psychological variables; review of relevant psychological research.  
*COS-Psychology*

**PSY 6217. Advanced Research Methodology II**

4(3,2). PR: PSY 6216, graduate admission, and C.I. Structure and planning of complex psychological experiments; internal and external validity; application of advanced experimental procedures in analyzing psychological variables; review of relevant psychological research.  
*COS-Psychology*

**PSY 6219C. Advanced Research Methods III**

4(3,2). PR: PSY 6216 and PSY 6217. Application of research design and statistical problems to selected human factors, industrial and/or clinical settings.  
*COS-Psychology*

**PSY 6308. Psychological Testing I**

4(3,2). PR: PSY 6216. Theory of test construction, including test reliability and validity.  
*COS-Psychology*

**PSY 6318. Applied Testing and Selection**

3(3,0). PR: PSY 6308, graduate admission, and C.I. Issues in selecting employees and an examination of currently used tests in industry.  
*COS-Psychology*

**PSY 6909. Research Report**

3(3,0). PR: PSY 6918. Preparation of a written report of a project completed in PSY 6918. This report will be in the form of a research publication of technical report. May be repeated for credit.  
*COS-Psychology*

**PSY 6918. Directed Research**

var. PR: PSY 6217, EXP 6257, PSY 6935, ten additional graduate hours in PSY, and C.I. Directed Research involves supervised research activity in an agency setting. The student will devote 15 hours per week in the assigned setting to work on an applied research problem with joint supervision by faculty and agency staff. May be repeated for credit.  
*COS-Psychology*

**PSY 6933. Administration Seminar/Practicum**

3(3,0). PR: Acceptance to Clinical Psychology PhD program or C.I. The theories, issues, and techniques of administration in a mental health care delivery system. This course is intended for the PhD in Clinical Psychology; in certain instances graduate students in other programs may enroll.  
*COS-Psychology*

**PSY 6935. Research Planning Seminar I**

1(1,0). Clinical graduate student initiation of thesis proposal formulation under faculty supervision. Graded S/U.  
*COS-Psychology*

**PSY 6939. Research Planning Seminar II**

1(1,0). PR: PSY 6935. Clinical graduate student continued progress on thesis proposal formulation under faculty supervision.  
*COS-Psychology*

**PSY 6940C. Research Practicum**

1(0,2). PR: Graduate admission and C.I. The implementation of knowledge, skills, and abilities to conduct independent research. May be repeated for credit.  
*COS-Psychology*

**PSY 7315. Psychometric Theory and Practice**

3(3,0). PR: PSY 6216 and graduate admission. The construction, evaluation, and use of psychological measures; classical test theory, views of reliability, and item analysis; validity; generalizability theory; item response theory.  
*COS-Psychology*

**PUP 6007. Public Policy Analysis**

3(3,0). Examination of the role of the state and the policy process (agenda-setting, formulation, implementation), and case studies in environmental, economic, education, welfare or other policy.  
*COS-Political Science*

**PUP 6015. Comparative Public Policy**

3(3,0). PR: Graduate standing or C.I. Comparative public policy theories applied to immigration, education, trade, taxation, and fiscal policy.  
*COS-Political Science*

**PUP 6201. Urban Environmental Policy**

3(3,0). PR: Graduate standing or C.I. Covers the relationship between public policy, ecology, and the urban political landscape by tracing the trajectory of its development and prospects for sustainable cities.  
*COS-Political Science*

**PUP 6207. Politics of Sustainability**

3(3,0). Probes the multiple political meanings of sustainability and illuminates the political consequences surrounding its use in various local and global contexts.  
*COS-Political Science*

**PUP 6208. Environmental Politics**

3(3,0). PR: Admission to a graduate degree-seeking program or C.I. Examines the political ideas and practices which have shaped environmental politics and practices in the U.S.  
*COS-Political Science*



**PUP 6247. Contemporary Issues in Environmental Politics**

3(3,0). PR: Graduate standing. A detailed examination of recent developments in one or more areas of environmental politics. Topics may include land and water regulation and pollution control.

*COS-Political Science*

**PUP 6324. Women and Public Policy**

3(3,0). PR: Graduate standing. Analyzes U.S. public policies with differential impact on women, including policies regarding employment, family, health, reproduction and sexuality. Strong theoretical emphasis.

*COS-Political Science*

**PUP 6607. Politics of Health**

3(3,0). PR: Graduate or postbac status. Analysis of public health policies, primary focus upon political processes, policy makers, and interest groups. Comparative health practices.

*COS-Political Science*

**PUP 6938. Special Topics/Public Policy**

3(3,0). This course title covers all public policy special topics courses which are not listed in the catalog with a course number. May be repeated for credit only when course content is different.

*COS-Political Science*

**PUR 6403. Crisis Public Relations**

3(3,0). PR: CI. The course examines the management of crisis situations from a PR perspective, as well as how to manage issues to prevent them from becoming crises.

*COS-Communication*

**QMB 7565. Applied Statistical Business Decision Models**

3(3,0). PR: Admission to Business doctoral program; ECO 6416 or equivalent; or C.I. Logic and procedures used in research and data evaluation in the business sciences applying advanced statistical models to decision-making problems.

*BA-Economics*

**RED 5147. Developmental Reading**

3(3,0). PR: EDG 4323. Principles, procedures, organization, and current practices in the elementary reading program. Materials and methods of instruction.

*ED-Teaching & Learning Princ*

**RED 5517. Classroom Diagnosis and Development of Reading Proficiencies**

3(3,1). PR: RED 5147 or equivalent. Classroom diagnosis and corrective teaching in reading; instructional materials. Case study required.

*ED-Teaching & Learning Princ*

**RED 6116. Trends in Reading Education**

3(3,0). PR: Basic Teacher Certificate or C.I. Analysis of historical development and current trends; management systems; instructional strategies and investigation of research.

*ED-Teaching & Learning Princ*

**RED 6148. Severe Language-Based Reading and Writing Disabilities**

3(3,0). PR: Graduate status. Development, assessment, and instruction of reading, writing, and spelling, with emphasis on phonemic awareness, decoding, text comprehension, spelling, and written expression.

*HPA-Commun Sci & Disorders*

**RED 6336. Reading in the Content Areas**

3(3,0). PR: Basic Teacher Certificate or C.I. Identification and evaluation of reading skills, diagnosis of reading problems, and development of methods and materials to increase student reading performance.

*ED-Teaching & Learning Princ*

**RED 6337. Reading in the Secondary School**

3(3,0). PR: RED 6336, Basic Teacher Certification, or C.I. Nature of the adolescent reader; organizational patterns, principles, and procedures; diagnostic and remediation materials.

*ED-Teaching & Learning Princ*

**RED 6746. Management of Reading Programs**

3(3,0). Overview of K-12 reading instruction goals and program management models; role of reading supervisor and in-service needs assessment and delivery.

*ED-Teaching & Learning Princ*

**RED 6845. Advanced Evaluation and Instruction in Reading**

3(3,0). PR: RED 5517 or C.I. Administration and interpretation of formal and informal evaluation strategies. Factors and instructional techniques contributing to reading achievement. Case studies, parent involvement.

*ED-Teaching & Learning Princ*

**RED 6846. Reading Practicum**

6(0,6). PR: RED 6845 or C.I. Evaluation and instructional practices for individualization of reading instruction in a laboratory setting. Parent interview and case report.

*ED-Teaching & Learning Princ*

**RED 6946. Practicum, Clinical Practice**

3(3,0).

*ED-Teaching & Learning Princ*

**RET 5910. Research Methods in Cardiopulmonary Physiology**

3(3,0). Introduction to methods used in scientific and medical research in cardiopulmonary physiology.

Literature review, experimentation, and data analysis.

*HPA-Health Professions*

**SCE 5315. Methods in Elementary School Science**

3(3,0). PR: EDG 4323. Organization of instruction in elementary school science including methods, evaluation, materials, strategies, and current practices.

*ED-Teaching & Learning Princ*

**SCE 5325. Teaching Middle School Science**

3(3,0). PR: EDG 6236 or C.I. This course will provide experiences that promote effective science teaching in grades 5-9 including interdisciplinary teaming, technology use, ESOL, and inquiry in science.

*ED-Teaching & Learning Princ*

**SCE 5337. Issues and Methods in Secondary School Science**

3(3,0). PR: EDG 6236 or C.I. Secondary science education special methods course is designed to augment students' understanding of instructional methods and their applications to middle and high school science curriculum.  
*ED-Teaching & Learning Princ*

**SCE 5836. Space Science for Educators**

3(3,0). PR: Senior standing or C.I. Introduction to space science, manned space flight, and space education curriculum.  
*ED-Teaching & Learning Princ*

**SCE 6105. Trends in Elementary School Science Education**

3(3,0). PR: Basic Teacher Certification or C.I. Study of historical development and current trends; analysis of science curricula, materials.  
*ED-Teaching & Learning Princ*

**SCE 6137. Science Programs in Secondary School**

3(3,0). PR: Basic Teacher Certificate or C.I. Study of historical development and current trends; analysis of science curricula, materials.  
*ED-Teaching & Learning Princ*

**SCE 6338. Inquiry in the Sciences**

3(3,1). PR: Graduate standing or science certification. Teaching science by inquiry in the secondary school and development of inquiry lessons.  
*ED-Teaching & Learning Princ*

**SCE 7146. Professional Issues in Science Education**

3(3,0). PR: Admission to the PhD in Education or C.I. Students will study issues and forces that have shaped science education policies, classroom practices, ethics development, and professional identity.  
*ED-Teaching & Learning Princ*

**SCE 7746. Teaching Theory and Research in Science Education**

3(3,0). PR: Admission to the PhD in Education or C.I. Course will provide students means to become familiar with trends and current status of research in science teaching and learning.  
*ED-Teaching & Learning Princ*

**SCE 7864. Science Technology and Society**

3(3,0). PR: Admission to the PhD in Education or C.I. The course is focused on the history of science in the U.S. with particular emphasis on institutional configurations that emerged in the period since nationhood.  
*ED-Teaching & Learning Princ*

**SCE 7935. Seminar--Professional Writing/Grants in Science Education**

3(3,0). PR: Admission to the PhD in Education or C.I. The focus of the course is on scholarly writing and grant writing in science teaching, learning, assessment and relationships.  
*ED-Teaching & Learning Princ*

**SCE 7942. Internship/Practicum in Science Education**

6(6,0). PR: Admission to the PhD in Education or C.I. The focus of this course is students' participation in current research projects in science/science education.  
*ED-Teaching & Learning Princ*

**SDS 6200. Procedures for Group Testing**

3(2,1). PR: EGC 5005 or EGC 6426, EDF 6481 or EDF 6482. Survey of various educational and psychological objective instruments used in schools to measure achievement, aptitude, interests, ability. Emphasis on administration and score interpretation.  
*ED-Child, Family & Comm Sci*

**SDS 6347. Career Development**

3(3,0). PR: C.I. A study of career development theories, occupational and educational information, approaches to career decision-making life-style and leisure in the development of the whole person.  
*ED-Child, Family & Comm Sci*

**SDS 6411. Counseling with Children and Adolescents**

3(3,0). PR: EGC 6436 and EDF 6155 or C.I. Study of counseling theory, process, and techniques as applied to children and adolescents. Course will contain an experiential component.  
*ED-Child, Family & Comm Sci*

**SDS 6426. Guidance and Counseling of Gifted/Talented Individuals**

3(3,0). Guidance and counseling procedures and strategies for gifted/talented students; self-assessment; group dynamics; communication with parents; career goals; alternate educational opportunities.  
*ED-Child, Family & Comm Sci*

**SDS 6620. Coordination of Comprehensive Professional School Counseling Programs**

3(3,0). PR: MHS 5005, MHS 6400, MHS 6401, MHS 6500, MHS 6702. In-depth analysis of comprehensive developmental professional school counseling programs, including the coordination of these programs.  
*ED-Child, Family & Comm Sci*

**SDS 6947. Internship in Professional School Counseling**

1-6(1, 1-6). PR: MHS 5005, MHS 6400, MHS 6401, MHS 6500, MHS 6702, MHS 6803, SDS 6620. Supervised fieldwork experience in professional school counseling, emphasizing experiences that support the development of student interns' counseling competencies and delivery of comprehensive services to all students. May be repeated for credit. Graded S/U.  
*ED-Child, Family & Comm Sci*

**SOP 5059. Advanced Social Psychology**

3(3,0). PR: SOP 3004, graduate status or senior standing, or C.I. The major findings and theories in social psychology including an in-depth review of relevant research.  
*COS-Psychology*

**SOW 5105. Human Behavior and Social Environment I: Individual**

3(3,0). PR: Admission to MSW program. Study of human development and psychosocial functioning of individuals at various life stages with particular attention to implications of human diversity.  
*HPA-Social Work*

**SOW 5106. Human Behavior and Social Environment II: Social Systems**

3(3,0). Study of the patterns and dynamics of families, groups, organizations, and communities from a social work and a systems perspective.

*HPA-Social Work*

**SOW 5109. Violence Against Women: A Global Perspective**

3(3,0). PR: Graduate status or C.I. An introduction to the types of violence that impact women from a global perspective. Community, political, and economic issues that support violence against women will be discussed by country, ethnic group(s) within countries, and religious principles.

*HPA-Social Work*

**SOW 5132. Diverse Client Populations**

3(3,0). Study of human diversity, focusing on the needs, resources, problems, and service issues of several identified minority client populations.

*HPA-Social Work*

**SOW 5235. Social Welfare Policies and Services**

3(3,0). Study of societal responses to human needs; forces shaping social welfare systems; introduces frameworks for analyzing social policies and services

*HPA-Social Work*

**SOW 5305. Social Work Practice I: Generalist Practice**

3(3,0). Study of social work functions, knowledge, values, roles and skills; the use of a generalist model of practice.

*HPA-Social Work*

**SOW 5306. Social Work Practice II: Intervention Approaches**

3(3,0). Study of selected social work theories, strategies, and techniques for helping people and improving system responsiveness to human needs.

*HPA-Social Work*

**SOW 5355. Studies in Social Work Practice**

3(3,0). PR: C.I. Analysis of one or more urban practice issues and approaches. May be repeated for credit.

*HPA-Social Work*

**SOW 5387. Nonprofit Resource Development**

3(3,0). PR: Admission to certificate program or C.I. Resource Development in nonprofit organizations, including board development and leadership, volunteer program development, staff development, grant funding, fundraising, marketing, and government contract development and management.

*HPA-Social Work*

**SOW 5404. Social Work Research**

3(3,0). Study of group research designs in social work; quantitative analyses; and related ethical issues.

*HPA-Social Work*

**SOW 5432. Evaluating Social Work**

3(3,0). Study of single case designs in social work; recording methods; behavioral and standardized measures; applications to individuals, families, groups, programs, communities.

*HPA-Social Work*

**SOW 5532. Generalist Field Education I**

2(2,0). PR: Admission to MSW Program. Supervised practice of social work in an agency for 224 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5533. Generalist Field Education II**

2(2,0). PR: MSW. Continuation of SOW 5532 Generalist Field Education I in the same field agency for 224 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5534. Generalist Field Education Integrative Seminar I**

1(1,0). PR: Admission to MSW program. CR: SOW 5532. Seminar designed to facilitate student integration of generalist social work practice and theory while strengthening partnerships in the community. Graded S/U.

*HPA-Social Work*

**SOW 5538. Full-Time MSW Generalist Field Education and Seminar I**

3(3,0). PR: Graduate standing or C.I.; CR: SOW 5305. Field education for full-time MSW generalist students; includes seminar and supervised practice of social work in an agency for 250 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5539. Full-Time MSW Generalist Field Education and Seminar II**

3(3,0). PR: SOW 5538; CR: SOW 5306. Field education for full-time MSW generalist students; includes seminar and supervised practice of social work in an agency for 250 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5546. Generalist Field Education Integrative Seminar I**

1(1,0). PR: Admission to MSW program. CR: Generalist Field Education II. Continuation of generalist field education integrative seminar 1 to facilitate student integration of generalist social work practice and theory while strengthening partnerships in the community. Graded S/U.

*HPA-Social Work*

**SOW 5565. Part-Time MSW Generalist Field Education and Seminar I**

2(2,0). PR: SOW 5305; CR SOW 5306. Field education for part-time MSW generalist students; includes seminar and supervised practice of social work in an agency for 180 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5566. Part-Time MSW Generalist Field Education and Seminar II**

2(2,0). PR: SOW 5565; CR: SOW 5306. Field Education for part-time MSW generalist students; includes seminar and supervised practice of social work in an agency for 180 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5567. Part-Time MSW Generalist Field Education and Seminar III**

2(2,0). PR: SOW 5566. Field Education for part-time MSW generalist students; includes seminar and supervised practice of social work in an agency for 140 clock hours. Graded S/U.

*HPA-Social Work*

**SOW 5603. Social Work in Health Settings**

3(3,0). PR: Graduate standing or C.I. Study of social work roles, interventions, and issues related to helping clients in health settings.

*HPA-Social Work*

**SOW 5624. Social Work Practice in Mexican Culture**

3(3,0). PR: C.I. The practice of social work in Mexican culture through cultural immersion, seminars, field visits and language instruction.

*HPA-Social Work*

**SOW 5625. Social Work with Women**

3(3,0). Alternative approaches to the treatment of women in the urban setting.

*HPA-Social Work*

**SOW 5635. Social Work Practice in Schools**

3(3,0). PR: Social Work Graduate standing or C.I. Study of knowledge, skills and abilities necessary for competent practice with students, their teachers, families, schools and communities.

*HPA-Social Work*

**SOW 5642. Aging In Social Situations**

3(3,0). PR: Admission to MSW program or Gerontology Certificate Program or C.I. Knowledge about elderly in social situations or environmental context.

*HPA-Social Work*

**SOW 5644. Interventions with Elderly and Their Families**

3(3,0). PR: Admission to Gerontology graduate certification program or MSW program or C.I. Study of concepts, skills, models and theories for intervening with aged. Special attention is given to minority populations.

*HPA-Social Work*

**SOW 5652. Children Services in Social Work**

3(3,0). PR: Graduate standing. Study of societal responses to children's needs. Development of skills for preventing family breakdown, placing children in alternative care, and reuniting children with their families.

*HPA-Social Work*

**SOW 5662. Strategies in Employee Assistance Programs**

3(3,0). Techniques for establishing, providing, and evaluating services to people with problems which affect job performance.

*HPA-Social Work*

**SOW 5670. Gay and Lesbian Experience in American Society**

3(3,0). PR: seniors or graduate status. Sexual orientation in a cultural context: resources and policies affecting gay and lesbian people; and professional considerations in interventions with and for gay and lesbian clients.

*HPA-Social Work*

**SOW 5712. Interventions with Substance Abusers**

3(3,0). Strategies for working with persons who abuse drugs, alcohol, and other substances.

*HPA-Social Work*

**SOW 5713. Prevention and Treatment of Adolescent Substance Abuse**

3(3,0). PR: Graduate Status or C.I. An in-depth review of prevention, intervention and treatment of Adolescent Substance Abuse.

*HPA-Social Work*

**SOW 5735. Documentation Skills for Helping Professionals**

3(3,0). PR: MSW students, C.I. Study of documentation skills and record keeping for helping professionals.

*HPA-Social Work*

**SOW 5756. Introduction to Forensic Social Work Theory and Practice**

3(3,0). PR: Graduate standing or C.I. Course develops the understanding of the role of social workers within the course and criminal justice system.

*HPA-Social Work*

**SOW 6123. Psychosocial Pathology**

3(3,0). PR: All first-year courses in the MSW Program SOW 5305, SOW 5105, SOW 5404, SOW 5235, SOW 5306, SOW 5106, SOW 5432, SOW 5532, SOW 5132, SOW 5533. Study of psychosocial dynamics of dysfunctional behavior in individuals.

*HPA-Social Work*

**SOW 6155. Human Sexuality in Social Work Practice**

3(3,0). PR: Admission to Master of Social Work program, Graduate Certificate in Gender Studies or C.I. Study of human sexuality with emphasis on assessment and intervention skills for social workers with clients experiencing problems involving sexual issues.

*HPA-Social Work*

**SOW 6246. Policy Analysis and Social Change**

2(2,0). PR: All first-year courses in the MSW program SOW 5305, 5105, 5404, 5235, 5105, 5404, 5235, 5532, 5306, 5106, 5432, 5132, 5533. Study of urban problems, policies, and planning from the perspective of their impact on individuals and families.

*HPA-Social Work*

**SOW 6324. Clinical Practice with Groups**

3(3,0). PR: Advanced standing in MSW program. Group work theories, interventions and techniques applied to persons with emotional, social and psychological problems.

*HPA-Social Work*

**SOW 6348. Clinical Practice with Individuals**

3(3,0). PR: Advanced standing in MSW program. Behavioral, crisis, and psychosocial theories applied to persons with emotional, social, and psychological problems.

*HPA-Social Work*

**SOW 6373. Clinical Supervision**

3(3,0). PR: MSW graduate student, PhD status. or C.I. Supervisory theory and practice in clinical settings.

*HPA-Social Work*

**SOW 6383. Social Work Administration**

3(3,0). PR: Graduate standing. Designed as a general introduction to the multi-faceted nature of social work administration in public and private non-profit settings.  
*HPA-Social Work*

**SOW 6384. Administrative Supervision in Social Work**

3(3,0). PR: Graduate standing in social work. Administrative social work supervision within various community-based public and non-profit settings.  
*HPA-Social Work*

**SOW 6386. Seminar in Social Welfare Planning and Implementation**

3(3,0). PR: Admission to PhD program or C.I. Social welfare planning, implementation, and evaluation at the community and organizational levels. Emphasizes planning needs of oppressed groups.  
*HPA-Social Work*

**SOW 6399. Advanced Administration in Social Welfare**

3(3,0). PR: Admission to PhD program or C.I. Attributes, skills, behaviors, and problems with executive roles in public human service organizations. Emphasizes the mission of the organization as well as mobilization of resources.  
*HPA-Social Work*

**SOW 6492. Theory Building in Social Work**

3(3,0). PR: Admission to the PhD program or C.I. Epistemological, ontological, and methodological implications of knowledge building in social work.  
*HPA-Social Work*

**SOW 6531. Full Time MSW Clinical Field Education and Seminar I**

4(4,0). PR: SOW 5538 and SOW 5539; CR SOW 6123, SOW 6348, SOW 6612, SOW 6324. Field education for full time MSW students; includes seminar and supervised practice of social work in an agency for 275 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6535. Clinical Field Education I**

3(3,0). PR: SOW 5532 and SOW 5533 CR: SOW 6548. Supervised specialist practice in a field agency for 304 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6536. Full Time MSW Clinical Field Education and Seminar II**

4(4,0). PR: SOW 6531. Field education for full time MSW clinical students; includes seminar and supervised practice of social work in an agency for 275 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6548. Clinical Field Integrative Seminar I**

1(1,0). PR: SOW 5532 and SOW 5533; CR: SOW 6535. Seminar designed to facilitate student integration of clinical social work practice and theory while strengthening partnerships in the community. Graded S/U.  
*HPA-Social Work*

**SOW 6549. Clinical Field Integrative Seminar II**

1(1,0). PR: MSW. Continuation of Clinical Field Integrative seminar I to facilitate student integration of clinical social work practice and theory while strengthening partnerships in the community. Graded S/U.  
*HPA-Social Work*

**SOW 6561. Part-Time MSW Clinical Field Education and Seminar 1**

3(3,0). PR: SOW 5567; SOW 6123; SOW 6348; SOW 6612; CR: SOW 6324. Field education for part-time MSW students; includes seminar and supervised practice of social work in an agency for 200 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6562. Part Time MSW Clinical Field Education and Seminar II**

2(2,0). PR: SOW 6561. Field education for part time MSW clinical students; includes seminar and supervised practice of social work in an agency for 150 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6563. Part-Time MSW Clinical Field Education and Seminar III**

3(3,0). PR: SOW 6562. Field education for part-time MSW clinical students; includes seminar and supervised practice of social work in an agency for 200 clock hours. Graded S/U.  
*HPA-Social Work*

**SOW 6604. Medications in Social Work Practice**

3(3,0). PR: Admission to MSW program or certificate or C.I. The study of the effects that psychotropic medications can have within the counseling/helping relationship.  
*HPA-Social Work*

**SOW 6612. Clinical Practice with Families**

3(3,0). PR: Advanced standing in MSW program. Family-focused models of intervention applied to families in transition and to problems such as divorce, single parenting, and blended families.  
*HPA-Social Work*

**SOW 6655. Child Abuse: Treatment and Prevention**

3(3,0). PR: Admission to MSW degree or SW or Criminal Justice Certificate program. Study of various forms of child abuse, the social worker's role and interventions with victims of child abuse and their family members.  
*HPA-Social Work*

**SOW 6656. Clinical Practice with Children and Adolescents**

3(3,0). PR: Advanced standing in MSW program. Social work practice and treatment of children and adolescents.  
*HPA-Social Work*

**SOW 6689. Sex Therapy**

3(3,0). Intervention approaches for sex-related problems.  
*HPA-Social Work*

**SOW 6846. Spirituality in Clinical Social Work Practice**  
3(3,0). PR: Admission to MSW or Social Work Certificate program. Faith development theory, study of spirituality in various settings and development of strategies for use in practice designed to heighten sensitivity to spiritual dimensions of life.

*HPA-Social Work*

**SOW 6914. Intergrative Research Project in Clinical Practice**

2(2,0). PR: Advanced standing in MSW program. Student-selected research on an issue of clinical practice in urban settings.

*HPA-Social Work*

**SPA 5473. Multicultural Aspects of Communication Differences and Disorders**

3(3,0). PR: Graduate standing. Introduction to cultural and linguistic diversity among individuals with communication differences and disorders. Special emphasis on African, Hispanic, Asian, and Native-American cultures.

*HPA-Commun Sci & Disorders*

**SPA 5554. Counseling in Communicative Disorders**

3(3,0). PR: Senior Status or C.I. Interviewing and counseling for individuals with communication disorders and their families.

*HPA-Commun Sci & Disorders*

**SPA 5564. Aging and Communication**

3(3,0). PR: Senior status or CI. Study of the changes in communication with normal aging, focusing on assessment and management of older individuals with communication disorders.

*HPA-Commun Sci & Disorders*

**SPA 6057. Methods in School Speech-Language Pathology**

3(3,0). PR: Graduate standing. The study of essential concepts, methods and procedures used in school-based speech-language pathology.

*HPA-Commun Sci & Disorders*

**SPA 6132. Advanced Speech Science**

3(3,0). PR: Graduate status. Advanced study of the anatomy and physiology for speech production, the acoustic and physiological measurement of speech, application of speech science to clinical practice.

*HPA-Commun Sci & Disorders*

**SPA 6204. Articulation/Phonological Disorders**

3(3,0). PR: Graduate standing or C.I. SPA 3112 and SPA 3112L. Advanced theory, diagnosis, and treatment of articulation/phonological disorders including developmental apraxia of speech, dysarthria, and cleft palate; communicative differences vs. disorders emphasized.

*HPA-Commun Sci & Disorders*

**SPA 6211C. Voice Disorders**

4(3,1). PR: Graduate standing. Study of the etiology, evaluation, and management of voice disorders in children and adults, with laboratory demonstration and participation.

*HPA-Commun Sci & Disorders*

**SPA 6225C. Fluency Disorders**

4(3,1). PR: Graduate standing. Study of the theories, etiology, symptomatology and development of fluency disorders as well as assessment, differential diagnosis and management of disorders of fluency in children and adults with fluency failures.

*HPA-Commun Sci & Disorders*

**SPA 6236. Motor Speech Disorders in Adults and Children**

3(3,0). PR: Graduate standing. Evaluation and treatment of dysarthrias, apraxias, and other motor speech disorders in adults and children associated with neurological problems, brain injury and systemic disease.

*HPA-Commun Sci & Disorders*

**SPA 6245. Communication Disorders in Cleft Palate-Velopharyngeal Dysfunction**

3(3,0). PR: Graduate status. Introduction to the management of communication and feeding disorders related to cleft palate and/or velopharyngeal dysfunction.

*HPA-Commun Sci & Disorders*

**SPA 6309. Auditory Processing of Language**

3(3,0). PR: Graduate status. Diagnosis, intervention and management of auditory-specific language and information processing deficits in children.

*HPA-Commun Sci & Disorders*

**SPA 6327. Aural Habilitation/Rehabilitation**

3(3,0). PR: SPA 6204, SPA 6402. Principles and procedures involved in speech and language acquisition, management, utilization of residual hearing, speech reading, and the use of hearing aids.

*HPA-Commun Sci & Disorders*

**SPA 6401. Language Disorders in Infants and Toddlers**

3(3,0). PR: Graduate status. Assessment and intervention of communication disorders in infants and toddlers incorporating transdisciplinary and family-centered models.

*HPA-Commun Sci & Disorders*

**SPA 6402. Preschool Language Disorders**

3(3,0). PR: SPA 4400 or equivalent. Application of the normal process of early language acquisition to the evaluation and management of preschool children with spoken and written language disorders.

*HPA-Commun Sci & Disorders*

**SPA 6403. School-Aged Language Disorders**

3(3,0). PR: SPA 4400 or equivalent. Application of the normal process of later language acquisition to the evaluation and management of school-aged children with spoken and written language disorders.

*HPA-Commun Sci & Disorders*

**SPA 6410. Aphasia and Related Disorders**

3(3,0). PR: Graduate standing. Evaluation and treatment of language disorders in adults with damage to the central nervous system, with an emphasis on etiology and differential diagnosis.

*HPA-Commun Sci & Disorders*

**SPA 6417. Cognitive/Communicative Disorders**

3(3,0). PR: SPA 6410. Evaluation and treatment of right hemisphere dysfunctions, traumatic brain injury, and dementias, with special emphasis on memory, cognition, pragmatics and other issues affecting functional communication.

*HPA-Commun Sci & Disorders*

**SPA 6432. Issues in Autism**

3(3,0). PR: Graduate standing. Study of the diagnosis, assessment and intervention strategies for autism and related disorders.

*HPA-Commun Sci & Disorders*

**SPA 6437. Communication Foundations & Assistive/Instructional Technology for Communication**

3(3,0). PR: Graduate standing. Classroom approaches involving assistive/instructional technology used to meet communication needs of students with autism spectrum disorders and other communicative disorders.

*HPA-Commun Sci & Disorders*

**SPA 6451. Theory & Clinical Aspects Cognitive-Commun. Disorders in Traumatic Brain Injury**

3(3,0). PR: Graduate standing or C.I. Impact of traumatic brain injury on neurological, cognitive-communication and social performance of school-aged and post-secondary students, including identification of co-morbid conditions, recovery patterns and interviewing.

*HPA-Commun Sci & Disorders*

**SPA 6452. Assessment of Cognitive-Communication Disorders in Traumatic Brain Injury**

3(3,0). PR: SPA 6451 or C.I. Assessment of cognitive-communication disorders in traumatic brain injury of school-aged and post-secondary students, including measurement theory, test selection, administration and interpretation, and reporting.

*HPA-Commun Sci & Disorders*

**SPA 6453. Management of Cognitive-Communication Disorders in Traumatic Brain Injury**

3(3,0). PR: SPA 6452, graduate standing, or C.I. Management of cognitive-communication disorders in traumatic brain injury of school-aged and post-secondary students with emphasis on attention, perceptual skills, executive function, learning and social interaction.

*HPA-Commun Sci & Disorders*

**SPA 6474. Assessment and Management of Culturally and Linguistically Diverse Populations**

3(3,0). PR: SPA 4478 or SPA 5473. Role of native and second languages, dialects and culture in the assessment and management of individuals from culturally and linguistically diverse backgrounds.

*HPA-Commun Sci & Disorders*

**SPA 6503. Entry-Level Clinical Practicum**

3(0,6). PR: SPA 4501L. Entry-level supervised practicum in evaluation and management of speech, language and hearing disorders. May be repeated for credit.

*HPA-Commun Sci & Disorders*

**SPA 6553. Differential Diagnosis In Speech and Language**

3(3,0). PR: SPA 6943C; CR: SPA 6553L. Procedures for diagnosing speech and language disorders in children and adults, with emphasis on interviewing, test administration and interpretation, and report writing.

*HPA-Commun Sci & Disorders*

**SPA 6553L. Differential Diagnosis in Speech and Language Laboratory**

1(0,4). PR: SPA 6943C; CR: SPA 6553. Practice in the differential diagnosis of speech and language disorders with emphasis on interviewing, test administration and interpretation, report writing, and case presentations. May be repeated for credit.

*HPA-Commun Sci & Disorders*

**SPA 6559. Augmentative and Alternative Communication**

3(3,0). PR: SPA 6402 or C.I. The total integrated network of techniques, aids, strategies, and skills individuals use to supplement or replace inadequate natural speaking ability.

*HPA-Commun Sci & Disorders*

**SPA 6565. Feeding and Swallowing Disorders**

3(3,0). PR: SPA 6236, SPA 6211C. Evaluation and management of feeding and swallowing disorders in children and adults.

*HPA-Commun Sci & Disorders*

**SPA 6570. Administration and Management of Communication Disorders Programs**

3(3,0). PR: Graduate standing or C.I. Methods and techniques for organization and administration of speech-language and hearing disorders in public school, hospital, rehabilitation center, and private practice facilities.

*HPA-Commun Sci & Disorders*

**SPA 6805. Research in Communicative Disorders**

3(3,0). PR: STA 2014C or STA 2023 or equivalent. Introduction to empirical research in communicative disorders, with emphasis on hypothesis testing, research design, data analysis, and interpretation of results.

*HPA-Commun Sci & Disorders*

**SPA 6820. Leadership Project in School Speech-Language Pathology**

3(3,0). PR: Graduate standing. Development and completion of a clinical or research project pertaining to school-based practice.

*HPA-Commun Sci & Disorders*

**SPA 6843. Severe Language-Based Reading and Writing Disabilities**

3(3,0). PR: Graduate status. Development, assessment, and instruction of reading, writing, and spelling, with emphasis on phonemic awareness, decoding, text comprehension, spelling, and written expression.

*HPA-Commun Sci & Disorders*

**SPA 6942C. Intermediate Clinical Practicum**

3(1,6). PR: SPA 6503. Intermediate supervised practicum in evaluation and management of speech, language and hearing disorders. Includes 1 hour weekly meeting. May be repeated for credit.

*HPA-Commun Sci & Disorders*

**SPA 6943C. Advanced Clinical Practicum**

3(1,6). PR: SPA 6942C. Advanced supervised practicum in evaluation and management of speech, language and hearing disorders. May be repeated for credit.

*HPA-Commun Sci & Disorders*

**SPA 6952. Clinical Research Project**

variable. PR: SPA 6805 or C.I. Completion of a research project on a relevant topic in Communicative Disorders.

*HPA-Commun Sci & Disorders*

**SPA 7490. Advanced Studies in Language Disorders**

3(3,0). PR: Doctoral standing or C.I. Evaluation and management of language impairment and associated disorders in preschool and school-age children.

*HPA-Commun Sci & Disorders*

**SPA 7491. Advanced Studies in Language Development**

3(3,0). PR: Doctoral standing or C.I. Linguistic theories and their implications for language learning in children and youth.

*HPA-Commun Sci & Disorders*

**SPA 7492. Evidence-Based Research and Practice in Speech Language Pathology**

3(3,0). PR: Doctoral standing or C.I. Systematic review of evidence-based research, with emphasis on concepts, methods and procedures from problem formulation to consumer reporting.

*HPA-Commun Sci & Disorders*

**SPA 7493. Advanced Studies in School Speech-Language Pathology**

3(3,0). PR: Doctoral standing or C.I. Theoretical foundations, advanced program design, team-based practice and leadership practices in school speech-language pathology.

*HPA-Commun Sci & Disorders*

**SPA 7494. Doctoral Seminar I: Spoken & Written Language Disorders Preschool and Early Elem**

3(3,0). PR: Doctoral standing or C.I. Research, theory and practice on spoken and written language disorders in preschool through early elementary school.

*HPA-Commun Sci & Disorders*

**SPA 7495. Doctoral Seminar II: Spoken and Written Language Disorders**

3(3,0). PR: Doctoral standing or C.I. Research, theory and practice on spoken and written language disorders in upper elementary, secondary and post-secondary students.

*HPA-Commun Sci & Disorders*

**SPA 7945. Internship in Clinical Supervision**

2(2,0). PR: Doctoral standing or C.I. Supervised experience in observing, supervising and evaluating internship performance in a clinical or school practicum in communication sciences and disorders.

*HPA-Commun Sci & Disorders*

**SPA 7947. Internship in College Instruction**

2(2,0). PR: Doctoral standing or C.I. Supervised experience in the design, delivery and evaluation of a college course in communication sciences and disorders.

*HPA-Commun Sci & Disorders*

**SPB 6106. Intercollegiate Sport Industry**

1.5(1.5,0). PR: CBA Masters foundation core and admission to the Master of Sport Business Management. Examines the structure, evolution and governance of intercollegiate sport management and offers a framework for sound business decision making.

*BA-College-BA*

**SPB 6206. Professional Sport Industry**

1.5(1.5,0). PR: CBA master's foundation core and admission to the Master of Sport Business Management. Examines the structure, evolution and governance of professional sport management and offers a framework for sound business decision making.

*BA-College-BA*

**SPB 6406. Sport Law**

3(3,0). PR: CBA master's program of study foundation core and admissions to the Sport Business Management Program. Legal issues applicable to a sports context, developing familiarity with the legal terminology and broad understanding of key concepts in tort, contract, constitutional and common law. Employment, labor, antitrust, and agency law are also key components of this course.

*BA-College-BA*

**SPB 6506. Moral and Ethical Issues in Sport**

1.5(1.5,0). PR: CBA master's program of study foundation core, and acceptance into the Sport Business Management program. Broad understanding of the moral and ethical issues in sport including a special focus on the responsibility of governing bodies and decision-makers in sport including faculty, coaches, athletic directors, presidents, league commissioners, the NCAA, and the media. Issues will also include equity for women and people of color, academic abuses of student-athletes at the high school and college level, illegal recruitment of student-athletes, use of performance enhancing drugs, agents, and gambling.

*BA-College-BA*

**SPB 6605. Sport and Social Issues**

1.5(1.5,0). PR: CBA master's program of study foundation core, and acceptance into the Sport Business Management program. Provides a broad understanding of how social issues impact sport and how sport impacts society. Included will be an historical overview of sport, athletes' rights, race and gender in sport, the Olympics and international sport, youth sport, the commercialization of sport, and the influence of the media on sport. Lab required.

*BA-College-BA*

**SPB 6606. Diversity and Social Issues in Sport Business Management**

1.5(1.5,0). PR: CBA master's foundation core and admission to the Master of Sport Business Management. The impact of diversity and social issues in sport as business imperative to achieve social responsiveness and financial performance in professional, collegiate, and Olympic sport.

*BA-College-BA*



**SPB 6607. Service Learning in Sport**

1(1,0). PR: Admission to Master of Sport Business Management. Designed to help students understand how the power of sport can affect meaningful social change through project-based service-learning course.  
*BA-College-BA*

**SPB 6715C. Professional Selling in Sport**

3(3,1). PR: CBA master's program of study foundation core, and admission to the Sport Business Management program. This course offers a comprehensive understanding of the sales process in the sport area. An overview of sales theory and its applications in sports are examined.  
*BA-College-BA*

**SPB 6716C. Strategic Sport Marketing**

3(3,1). PR: CBA master's program of study foundation core, and admission to the Sport Business Management program. This course offers a comprehensive understanding of the marketing of sport and marketing through sport. Theoretical and practical applications of sport marketing are examined.  
*BA-College-BA*

**SPB 6725. Leadership in Sport**

1.5(1.5,0). PR: CBA master's program of study foundation core, and admission to the Sport Business Management Program. Theory, research, and practice of leadership in sports organizations. Special attention is given to contemporary leadership issues with leaders of sports industry leading many of the discussions. Examines the multiple roles that leaders can help sports organizations play in serving the community, including both traditional and creative philanthropy and case studies of model community service programs of sports teams, leagues, and college athletics departments. Lab required.  
*BA-College-BA*

**SPB 6735. The Global Environment of Sport**

3(3,0). PR: CBA Masters Program of Study Foundation Core, and acceptance into the Sport Business Management program. With the continuing development of sport as a global enterprise comes the need to understand the global environment. The focus of this course is on the international business environment and how sport may best operate within that environment.  
*BA-College-BA*

**SPB 6806. Business of Sport Media**

3(3,0). PR: CBA master's program of study foundation core, and acceptance into the Sport Business Management program. History of how media has evolved from radio, network television and magazines into the multi-dimensional world of regional and national cable, the internet, the networks, huge rights fees and other new elements. The way sports media provides so much of the revenue for sports as an entertainment industry has made it the anchor for the sports industry.  
*BA-College-BA*

**SPC 6219. Modern Communication Theory**

3(3,0). Comparative analysis of theories and models of human communication, behavior systems, encoding and decoding processes, interaction variables, and social context  
*COS-Communication*

**SPC 6442. Small Group Communication**

3(3,0). A study of communication and its effect on small group behavior  
*COS-Communication*

**SPM 5155. Introduction to Sports Administration**

3(3,0). PR: C.I. This course will provide an overview of the sports industry. Fundamental leadership administration and research theories as well as information on current issues are emphasized.  
*ED-Child, Family & Comm Sci*

**SPM 5308. Marketing and Promoting Sports and Fitness Programs**

3(3,0). PR: C.I. Introduces students to all aspects of sports marketing including planning, organizing, marketing, evaluating, and conducting special and sport events.  
*ED-Child, Family & Comm Sci*

**SPM 5506. Financial Issues in Sports and Fitness**

3(3,0). PR: C.I. Examines basic financial concepts including understanding annual reports, developing budgets, financial analysis, and examining methods for increasing revenue and controlling cost in the sport industry.  
*ED-Child, Family & Comm Sci*

**SPM 6106. Planning and Operating Facilities for Sports and Fitness Programs**

3(3,0). PR: C.I. This course will provide students with an understanding of the factors involved in planning, designing, equipping, and managing of sport facilities and event logistics.  
*ED-Child, Family & Comm Sci*

**SPM 6108. Facilities and Event Management**

3(3,0). PR: CBA master's program of study foundation core and admission to the Sport Business Management program. This course takes a comprehensive look into the discipline of public assembly facility management and event planning. Sports activities are held in large facilities that create unique opportunities for the manager. Various events held in such facilities also create unique opportunities. Those unique opportunities are examined in-depth.  
*BA-College-BA*

**SPM 6158. Leadership and Management in Sports and Fitness Programs**

3(3,0). PR: C.I. Examines leadership, management fundamentals, professional knowledge, sports personnel and evaluation systems, leadership ethics, and communication skills required of leaders in the sports industry.  
*ED-Child, Family & Comm Sci*

**SPM 6726. Legal Issues in Sports and Fitness Programs**

3(3,0). PR: C.I. This course examines major legal issues in sports leadership. Emphasis is on providing legally sound programs that reduce the risk of litigation.  
*ED-Child, Family & Comm Sci*

**SPN 5502. Hispanic Culture of the United States**

3(3,0). PR: Graduate status or senior standing or C.I. An analysis of the Hispanic culture of the United States, past and present.  
*CAH-Modern Languages*

**SPN 5505. Spanish Peninsular Culture and Civilization**  
3(3,0). PR: Graduate status or senior standing or C.I. An analysis of the salient characteristics of Spanish culture and civilization.

*CAH-Modern Languages*

**SPN 5506. Spanish American Culture and Civilization**  
3(3,0). PR: Graduate status or senior standing or C.I. An analysis of the salient characteristics of Spanish American culture and civilization.

*CAH-Modern Languages*

**SPN 5705. Introduction to Spanish Linguistics**  
3(3,0). PR: Graduate status or senior standing or C.I. An introduction to main concepts and methods of analyses focusing on Spanish morphology, syntax, semantics, and phonology as well as dialectology and sociolinguistics.

*CAH-Modern Languages*

**SPN 5825. Spanish Dialectology**

3(3,0). PR: Graduate status or senior standing or C.I. This course is a survey of the diversity found within the Spanish language with respect to phonological constraints, morphosyntax, second language influences, and historical development.

*CAH-Modern Languages*

**SPN 5845. History of the Spanish Language**

3(3,0). PR: Graduate status or senior standing or C.I. An overview of linguistic characteristics of Latin and its evolution into Spanish with historical development of phonetic, morphological, and syntactic properties.

*CAH-Modern Languages*

**SPN 5920. AP Spanish Language**

3(3,0). PR: Graduate status or senior standing or C.I. Participants will enhance their knowledge of the language and culture of Spanish-speaking peoples and develop further proficiency in listening, comprehension, speaking, reading, and writing.

*CAH-Modern Languages*

**SPN 6805. Spanish Morphosyntax**

3(3,0). A study of Spanish morphology and syntax from different perspectives.

*CAH-Modern Languages*

**SPN 6940. Teaching Methods for the Spanish Classroom**

3(3,0). PR: Graduate standing and acceptance into the GTA program. Practical training for all GTA's who will be involved in teaching lower division Spanish classes.

Graded S/U.

*CAH-Modern Languages*

**SPS 6125. Infant Development Assessment**

3(2,1). PR: Graduate admission and C.I. Analysis of test theory and practice in administration, scoring, and interpretation of instruments assessing cognitive, visual-motor ability and adaptive behavior to pre- and primary school children.

*ED-Child, Family & Comm Sci*

**SPS 6175. Cultural Diversity and Nonbiased Assessment**  
3(3,0). An investigation of some of the major multicultural issues with emphasis on administration, scoring, and interpretation of instruments related to this population.

*ED-Child, Family & Comm Sci*

**SPS 6191. Individual Psychoeducational Diagnosis I**

4(4,0). PR: Graduate admission and C.I. CR: SPS 6206. Measurement of intellectual and cognitive functioning of children and adults. Administration, scoring and interpretation of Wechsler scales and selected psychometric instruments.

*ED-Child, Family & Comm Sci*

**SPS 6192. Individual Psychoeducational Diagnosis II**

4(4,0). PR: Graduate admission and C.I. CR: SPS 6948. Measurement of intellectual and cognitive functioning of children and adults. Administration, scoring, and interpretation of Binet IV, K-ABC, Woodcock-Johnson, and other psychometric instruments.

*ED-Child, Family & Comm Sci*

**SPS 6194. Assessment of Special Needs**

3(3,0). PR: SPS 6191, SPS 6192. Measurement of social, behavioral, and emotional functioning in children and adolescents.

*ED-Child, Family & Comm Sci*

**SPS 6206. Psychoeducational Interventions**

3(3,0). PR: SPS 6191. This course will enable school psychology students to link psychoeducational assessment results to appropriate prescriptive interventions.

*ED-Child, Family & Comm Sci*

**SPS 6225. Behavioral and Observational Analysis of Classroom Interactions in Schools**

3(3,0). PR: Graduate admission. An intensive review of the principles and procedures of applied behavioral and observational analysis and assessment as they relate to changing behavior in schools.

*ED-Child, Family & Comm Sci*

**SPS 6601. Introduction to Psychological Services in Schools**

3(3,1). PR: Graduate admission and C.I. A course presenting an overview of the philosophy, organization, programs, and operation of school psychological services.

*ED-Child, Family & Comm Sci*

**SPS 6606. School Consultation Techniques**

3(3,0). PR: C.I. Theories and models of school consultation and clinical practice in the consultative role.

*ED-Child, Family & Comm Sci*

**SPS 6608. Seminar in School Psychology**

3(3,0). PR: C.I. Diagnostic, instructional, and prescriptive intervention techniques.

*ED-Child, Family & Comm Sci*

**SPS 6703. Child and Adolescent Deviant Behavior and Treatment**

3(3,0). PR: Graduate admission and C.I. Behavior disorders in school-age children and adolescents as classified in current terminology, and a review of treatment options such as therapy and medication.

*ED-Child, Family & Comm Sci*

**SPS 6801. Developmental Bases of Diverse Behaviors**

3(3,0). PR: Graduate admission and C.I. The major social and educational policy concerns posed by developmental and cultural diversity in our society, with implications for teaching, learning and intervention.

*ED-Child, Family & Comm Sci*

**SPS 6815. Legal and Ethical Issues in Professional School Counseling**

3(3,0). PR: MHS 5005 and MHS 6400. Ethical and legal standards, their evolution, and application specific to professional school counseling will be presented in the form of case studies and ethical dilemmas.

*ED-Child, Family & Comm Sci*

**SPS 6931. Ethical and Legal Issues in School Psychological Services**

3(3,0). PR: Graduate admission. Introduction to ethical codes, professional standards, ethical-legal decision-making models and case studies impacting the delivery of school psychological services.

*ED-Child, Family & Comm Sci*

**SPS 6946. Practicum in School Psychology**

3(0,3). Provides each student with an orientation to public schools and experiences which broadly sample the spectrum of psychoeducational assessment and interventions for practicing school psychologists. Graded S/U.

*ED-Child, Family & Comm Sci*

**SPS 6948. School Psychology Internship**

6(0,6). PR: Graduate admission and C.I. Supervised placement in school setting. Graded S/U.

*ED-Child, Family & Comm Sci*

**SPW 5741. Contemporary Spanish American Southern Cone Literature**

3(3,0). PR: Enrolled in Spanish M.A. Program or C.I. Regional as well as international literary cultures and disciplines in southern cone literature.

*CAH-Modern Languages*

**SPW 6216. Spanish Golden Age Prose and Poetry**

3(3,0). PR: Admission into Spanish M.A. program. Outstanding authors of the Spanish Renaissance and Spanish Baroque periods.

*CAH-Modern Languages*

**SPW 6217. Spanish American Prose I**

3(3,0). A study of the principal characteristics of Spanish American prose from Colonial times to post-independence.

*CAH-Modern Languages*

**SPW 6218. Spanish American Prose II**

3(3,0). A study of the principal characteristics of Spanish American prose from modernism to the present.

*CAH-Modern Languages*

**SPW 6269. Nineteenth Century Spanish Novel**

3(3,0). A study of the major writers and literary movements of the 19th century with emphasis on the novels of Valera, Perez Galdos, Clarin and Pardo Bazan.

*CAH-Modern Languages*

**SPW 6306. Spanish American Drama**

3(3,0). PR: Admission into Spanish M.A. program. Critically recognized Spanish American Theater texts and pre-Hispanic theatrical works.

*CAH-Modern Languages*

**SPW 6315. Golden Age Drama**

3(3,0). An analysis of the meaning and artistic values of selected theatrical works of the Spanish Golden Age.

*CAH-Modern Languages*

**SPW 6356. Spanish American Poetry**

3(3,0). A study of the different movements and their contribution to Spanish American poetry.

*CAH-Modern Languages*

**SPW 6358. Modernismo**

3(3,0). PR: Admission to Spanish M.A. program. The first Spanish American literary movement (approximately 1880-1910) that impacted the 20th century Spanish language and culture.

*CAH-Modern Languages*

**SPW 6405. Medieval Spanish Literature**

3(3,0). An intensive study of the major genres of the period. Emphasis on selected works by major writers.

*CAH-Modern Languages*

**SPW 6485. Contemporary Peninsular Literature**

3(3,0). A study of the major writers and literary movements from the Generation of 1927 to the present.

*CAH-Modern Languages*

**SPW 6725. The Generation of 1898**

3(3,0). An analysis of the major works of writers of the Generation of 1898 such as Ganivet, Unamuno, Baroja, Azorin, and Machado.

*CAH-Modern Languages*

**SPW 6775. Spanish Caribbean Prose**

3(3,0). PR: SPW 6919. Spanish Caribbean writers from Colonial times to the present.

*CAH-Modern Languages*

**SPW 6825. Seminar Series**

3(3,0). PR: Graduate Standing or C.I. A seminar course that focuses on a single author, a geographical area or a specific topic within a period or literary movement from Spain, Latin American or Hispanics in the U.S. May be repeated for credit.

*CAH-Modern Languages*

**SPW 6919. Advanced Spanish Graduate Research**

3(3,0). PR: Graduate student in Spanish MA program. Introduce historical and literary criticism at the graduate level. Teach methods for independent study and provide students with tools needed for research in Spanish linguistics, literary criticism and culture.

*CAH-Modern Languages*

**SSE 5115. Methods in Elementary School Social Science**

3(3,0). PR: EDG 4323. Study of instructional programs in social sciences; objectives; materials; techniques; current research; and their application in elementary school setting.

*ED-Teaching & Learning Princ*

**SSE 5391. Global Education: Theory and Practice**

3(3,0). PR: Graduate standing or C.I. Examines the theoretical underpinnings of teaching about the world along with a variety of theoretically grounded teaching strategies for engaging students in global education.

*ED-Teaching & Learning Princ*

**SSE 5776. Democracy and Education**

3(3,0). PR: Graduate standing or C.I. Explores the intersection of theory and practice with regard to promoting democratic life in schools. Will examine competing theories of democracy and education, investigate problem areas in schools related to democracy, and consider examples of practice.

*ED-Teaching & Learning Princ*

**SSE 5790. Inquiry and Instructional Analysis in Social Science Education**

3(3,0). PR: Admission to M.A. program or alternative certification certificate program. Study of instructional programs in social science education and related scholarship; development of an inquiry about the intersection of theory and practice in social science teaching.

*ED-Teaching & Learning Princ*

**SSE 6387. Teaching with Film**

3(3,0). PR: Graduate standing or C.I. Selected strategies, trends, methods, materials, and legal issues for effectively incorporating film in the K-12 classroom. Selected topics include media literacy, film research, and making movies appropriate to educational settings.

*ED-Teaching & Learning Princ*

**SSE 6388. Digital History in the K-12 Classroom**

3(3,0). PR: Graduate standing or C.I. This course looks at the concept of digital history and how this pedagogical approach can and should be applied in the K-12 social studies classroom environment.

*ED-Teaching & Learning Princ*

**SSE 6617. Trends in Elementary School Social Studies Education**

3(3,0). PR: Basic Teacher Certificate or C.I. Historical development and current trends, strategies for inquiry instruction, intellectual, social, and personal dimensions of social studies.

*ED-Teaching & Learning Princ*

**SSE 6636. Contemporary Social Science Education**

3(3,0). PR: Basic Teacher Certificate of C.I. A survey of recent developments and contemporary programs in all areas of the social sciences.

*ED-Teaching & Learning Princ*

**SSE 7740. History of Social Studies Education**

3(3,0). PR: Doctoral standing. Major themes, ideas, and personalities in the historical development of curriculum and instruction in social studies in the United States since 1880.

*ED-Teaching & Learning Princ*

**SSE 7796. Research in Social Science Education Seminar**

3(3,0). PR: Doctoral standing. Analysis and evaluation of scholarly research in social studies education.

*ED-Teaching & Learning Princ*

**SSE 7797. Content and Program Analysis in Social Science Education**

3(3,0). PR: Doctoral standing. Analysis of social science instructional programs including development of content, materials, processes, and assessment procedures in light of current research and practice.

*ED-Teaching & Learning Princ*

**SSE 7947. Internship in Social Science Education**

3(3,0). PR: Doctoral standing. Student teaching in a classroom under supervision of a certified classroom teacher. May be used in the degree program a maximum of 3 times.

*ED-Teaching & Learning Princ*

**STA 5085. Analytical Reasoning**

3(3,0). PR: Graduate standing. Concepts in probability and statistics through case studies. Seminar and telecommunications format. Analytical/logical thinking in context.

*COS-Statistics & Actuarial Sc*

**STA 5103. Advanced Computer Processing of Statistical Data**

3(3,0). PR: STA 4163 and knowledge of a programming language, graduate status or senior standing, or C.I. Use of SAS and other statistical software packages; data manipulation; graphical data presentation; data analysis; creating analytical reports.

*COS-Statistics & Actuarial Sc*

**STA 5139. Credibility Theory and Loss Distribution**

3(3,0). PR: STA 4322, graduate status or senior standing, or C.I. Full and partial credibility. The credibility premium. Exact credibility. Parametric and nonparametric estimation of credibility. Loss models for claim severities and frequencies. Aggregate claims models.

*COS-Statistics & Actuarial Sc*

**STA 5175. Biometry**

3(3,0). PR: STA 2023, graduate status or senior standing, or C.I. Design and analysis of experiments with emphasis on biological/ecological application; one-way and multi-way ANOVA; regression; ordination; classification.

*COS-Statistics & Actuarial Sc*

**STA 5176. Introduction to Biostatistics**

3(3,0). PR: STA 4163 or STA 4173, graduate status or senior standing, or C.I. Fixed-effects model, random-effects model, repeated measures design, logistic regression, survival analysis, Kaplan-Meier estimates, proportional hazards model.

*COS-Statistics & Actuarial Sc*

**STA 5205. Experimental Design**

3(3,0). PR: STA 4164, STA 5206 or ESI 5219, and graduate status or senior standing, or C.I. Construction and analysis of designs for experimental investigations. Blocking, randomization, replication; Incomplete block designs; factorial and fractional designs; design resolution.

*COS-Statistics & Actuarial Sc*

**STA 5206. Statistical Analysis**

3(3,0). PR: STA 2023; not open to students who have completed STA 4164. Graduate status or senior standing or C.I. Data analysis; statistical models; estimation; tests or hypotheses; analysis of variance, covariance, and multiple comparisons; regression and nonparametric methods.

*COS-Statistics & Actuarial Sc*

**STA 5505. Categorical Data Methods**

3(3,0). PR: STA 4163 or STA 5206, and graduate status or senior standing or C.I. Considers discrete probability distributions, contingency tables, measures of association, and advanced methods, including loglinear modeling, logistic regression, McNemar's Test, Mantel-Haenszel test.  
*COS-Statistics & Actuarial Sc*

**STA 5646. Casualty Insurance**

3(3,0). PR: STA 4322 and STA 4641, graduate status or senior standing, or C.I. Individual risk rating and classification of risk for property/casualty insurance. Re insurance and expense issues. Reserves for insurance and loss adjustment expenses. Investment income.  
*COS-Statistics & Actuarial Sc*

**STA 5703. Data Mining Methodology I**

3(3,0). PR: STA 5103 and STA 5206, graduate status or senior standing, or C.I. Data mining to uncover valuable information through SEMMA (Sample, Explore, Model, Modify, and Access). Process with neural network and decision tree.  
*COS-Statistics & Actuarial Sc*

**STA 5825. Stochastic Processes and Applied Probability Theory**

3(3,0). PR: STA 4321, and graduate status or senior standing or C.I. Conditional probability and conditional expectations, sequences of random variables, branching processes, random walks, Markov chains, recurrent events, renewal theory, queueing theory, and simple stochastic processes.  
*COS-Statistics & Actuarial Sc*

**STA 5940. Statistical Advice for Researchers**

1(1,0). PR: Graduate status or senior standing or C.I. Discussion of student-supplied statistical problem, data sources, sampling techniques, computer package usage, analysis, interpretation. May be repeated for credit. Graded S/U.  
*COS-Statistics & Actuarial Sc*

**STA 5948. Actuarial Science Practicum**

3(3,0). PR: STA 4183 or STA 6185. Study and projects on problems in actual practice; discussions and presentations by practioners from life insurance, casualty, etc.  
*COS-Statistics & Actuarial Sc*

**STA 6106. Statistical Computing I**

3(3,0). Computer systems, approximating probabilities/percentiles, random number generation, linear model computations, and density estimation.  
*COS-Statistics & Actuarial Sc*

**STA 6107. Statistical Computing II**

3(3,0). PR: STA 6329 (or knowledge of matrix algebra), STA 6236 (or knowledge of linear regression), and familiarity with a higher level programming language (e.g., FORTRAN, C++, MATLAB). Linear regression: stepwise regression, Gauss-Jordan pivots, stand-up regression, residual analysis, Nonlinear regression; Gauss-Newton algorithm, derivative-free methods, constraints, iteratively reweighted least squares. General maximum likelihood methods: Newton-Raphson and Fisher-scoring, conjugate gradient and quasi-Newton methods, EM algorithm.  
*COS-Statistics & Actuarial Sc*

**STA 6132. Pension Actuarial Science**

3(3,0). PR: Graduate standing and STA 4322 and STA 4130. Pension plan funding basic theory and applications. Types and calculations of pension benefits, stochastic modeling of pension funding. Practical considerations.  
*COS-Statistics & Actuarial Sc*

**STA 6133. Life Contingencies and Insurance Models I**

3(3,0). CR: STA 6326 or C.I. Economics of insurance and utility theory, life tables, life insurance premiums and reserves evaluation.  
*COS-Statistics & Actuarial Sc*

**STA 6135. Life Contingencies and Insurance Models II**

3(3,0). PR: STA 6133. Multiple life and multiple decrement risk analysis and insurance models with options and expenses.  
*COS-Statistics & Actuarial Sc*

**STA 6185. Advanced Theory of Interest**

3(3,0). PR: MAC 2312 and STA 2023, and graduate standing, or C.I. Measurement of Interest, valuation of annuities, determination of yield rates on investments, fixed income securities, mortgages, etc.  
*COS-Statistics & Actuarial Sc*

**STA 6207. Response Surface and Mixture Experiments**

3(3,0). PR: STA 5205. Approximating response functions; first-order and second-order response surfaces; ridge systems; mixture problems, component proportions, and the analysis of mixture data.  
*COS-Statistics & Actuarial Sc*

**STA 6226. Sampling Theory and Applications**

3(3,0). PR: STA 4321. Different techniques of sampling, sampling for proportions, choosing sample size, ratio estimates, effects of sampling and non-sampling errors.  
*COS-Statistics & Actuarial Sc*

**STA 6236. Regression Analysis**

3(3,0). PR: MAS 3105 and STA 4164. General linear model, model aptness and remedial measures, regression through the origin, independent and dependent indicator variables, multicollinearity, outliers, biased regression.  
*COS-Statistics & Actuarial Sc*

**STA 6237. Nonlinear Regression**

3(3,0). PR: STA 6236 (or knowledge of linear regression). Nonlinear regression: model specification, diagnostics. Estimation: nonlinear least squares, SAS, Gauss Newton algorithm. Robust regression: M-estimation adaptive robust regression. Logistic regression, Poisson regression.  
*COS-Statistics & Actuarial Sc*

**STA 6238. Logistic Regression**

3(3,0). PR: STA 6236. Studies of logistic regression models: estimation, interpretation, model building strategies and assessments, and polytomous regression, SAS programming in the application of logistic regression modeling.  
*COS-Statistics & Actuarial Sc*

**STA 6246. Linear Models**

3(3,0). PR: STA 6329, STA 4164, and STA 4322. Theoretical development of full rank linear statistical models, least squares and maximum likelihood estimation, interval estimation, hypothesis testing, and introduction to less than full rank models.

*COS-Statistics & Actuarial Sc*

**STA 6326. Theoretical Statistics I**

3(3,0). PR: MAC 2313. Distribution of random variables, conditional probability and independence, some special distributions, distributions of functions of random variables, limiting distributions.

*COS-Statistics & Actuarial Sc*

**STA 6327. Theoretical Statistics II**

3(3,0). PR: STA 6326. Point estimation, sufficient statistics, completeness, exponential family, maximum likelihood estimators, statistical hypotheses, best tests, likelihood ratio tests, noncentral distributions.

*COS-Statistics & Actuarial Sc*

**STA 6329. Statistical Applications of Matrix Algebra**

3(3,0). PR: MAC 2313 and STA 4164 or STA 5206. Basic theory of determinants, inverses, generalized inverses, eigenvalues and eigenvectors, partitioned matrices. Diagonalization and decomposition theorems, least squares and statistical applications.

*COS-Statistics & Actuarial Sc*

**STA 6346. Advanced Statistical Inference I**

3(3,0). PR: STA 6327. Decision rules, risk functions, utility theory, the loss function, prior information and subjective probability, Bayesian analysis.

*COS-Statistics & Actuarial Sc*

**STA 6347. Advanced Statistical Inference II**

3(3,0). PR: STA 6346. Minimax analysis, invariance, admissibility, maximal invariants, sequential analysis.

*COS-Statistics & Actuarial Sc*

**STA 6466. Advanced Probability Theory**

3(3,0). PR: STA 6327 or MAP 6111. Basic concepts of probability theory, modes of convergence, probability inequalities, weak law of large numbers, Central Limit Theorem, strong law of large numbers.

*COS-Statistics & Actuarial Sc*

**STA 6467. Advanced Probability Theory II**

3(3,0). PR: STA 6466. Accuracy of point estimators, relative efficiency, multivariate normal distribution, testing goodness of fit, U-statistics, statistical functionals, density estimation asymptotic normality and efficiency.

*COS-Statistics & Actuarial Sc*

**STA 6507. Nonparametric Statistics**

3(3,0). PR: STA 4321. Theory and methods for one and two sample problems; one and two way layouts; independence problems; regression problems.

*COS-Statistics & Actuarial Sc*

**STA 6662. Statistical Methods for Industrial Practice**

3(3,0). Variance components, PCRs, autocorrelation structures, charting, EVOP, design strategies, calibration, standards, and associated awards.

*COS-Statistics & Actuarial Sc*

**STA 6673. Risk Management and Actuarial Applications**

3(3,0). PR: STA 6326. Risk management theory and practice in actuarial science.

*COS-Statistics & Actuarial Sc*

**STA 6677. Actuarial Models**

3(3,0). PR: STA 4130. Impact of explanatory variables on a failure time distribution, joint distributions, multiple decrement models, and Insurance pricing models.

*COS-Statistics & Actuarial Sc*

**STA 6679. Actuarial Research Methods**

3(3,0). PR: STA 6133 and STA 6185. Research study in actuarial subjects of current interest in life, property/casualty and/or pension.

*COS-Statistics & Actuarial Sc*

**STA 6704. Data Mining Methodology II**

3(3,0). PR: STA 5703 and STA 6106. Statistical techniques for data mining that include discriminant analysis, logistic regression, and factor analysis.

*COS-Statistics & Actuarial Sc*

**STA 6705. Data Mining Methodology III**

3(3,0). PR: Graduate standing and STA 5703. Current topics in data mining.

*COS-Statistics & Actuarial Sc*

**STA 6707. Multivariate Statistical Methods**

3(3,0). PR: MAS 3105, STA 4163, and STA 4322. Concepts of statistical relationships among several variables and methods for inference. Multivariate normal, Hotelling's T-Squared, multivariate analysis of variance, canonical correlations and principal components.

*COS-Statistics & Actuarial Sc*

**STA 6714. Data Preparation**

3(3,0). PR: STA 5103. Variable reduction, variable clustering, missing value imputation, and data survey. Additional data preparation topics associated with data mining techniques.

*COS-Statistics & Actuarial Sc*

**STA 6857. Applied Time Series Analysis**

3(3,0). PR: STA 4322, MAS 3105. Stationarity, autocorrelation, moving averages and autoregressive processes. Non-stationary time series. Identification and estimation. Forecasting.

*COS-Statistics & Actuarial Sc*

**STA 6931. Topics in Actuarial Science**

3(3,0). PR: Graduate standing and at least 9 hours of actuarial science classes. Topics may include: survey of actuarial practices, financial mathematics, ruin theory, insurance law, asset liability management. May be repeated for credit.

*COS-Statistics & Actuarial Sc*

**SYA 5625. ProSeminar**

3(3,0). PR: Graduate standing or C.I. Survey of conceptual issues, methodological concerns, and findings in substantive sociological areas that currently dominate scholarly inquiry, including such topics as crime, deviance, community, alcoholism, education.

*COS-Sociology*

**SYA 5652. Advanced Population**

3(3,0). PR: Graduate standing or C.I. Examines the theories, methods, and information utilized by demographers and focuses on techniques of application of those skills.

*COS-Sociology*

**SYA 6126. Social Theory**

3(3,0). PR: Regular graduate standing or C.I. The study of selected sociological theories in terms of relevance, usefulness, and adequacy for applied sociology.

*COS-Sociology*

**SYA 6305. Social Research**

3(3,0). PR: Regular graduate standing or C.I. Research methodology including problem conceptualization, sampling designs, research proposals, data collection, and evaluation techniques for applied settings.

*COS-Sociology*

**SYA 6315. Qualitative Research Methods**

3(3,0). PR: Graduate Standing. Examination of qualitative research methods, how and when they are employed, and processes of analyzing field observation, oral histories, and in depth interviews

*COS-Sociology*

**SYA 6425. Design and Conduct of Social Surveys**

3(3,0). PR: Graduate standing or C.I. Advanced social survey research methods, including sampling theory and applications, measurement, data collection modalities, questionnaire construction, and data reduction strategies.

*COS-Sociology*

**SYA 6455. Research Analysis**

3(2,2). PR: SYA 6305, undergraduate statistics, regular graduate standing, or C.I. Data management, selection of statistics, data analysis, evaluation, data presentation, and computer skills.

*COS-Sociology*

**SYA 6656. Social Organization and Human Resources**

3(3,0). PR: C.I. Complex organization theory, social systems analysis, competence in group dynamic skills, and use of human resources in agencies, businesses, and industries.

*COS-Sociology*

**SYA 6657. Program Design and Evaluation**

3(3,0). PR: SYA 6305 and SYA 6455 or C.I. Techniques of system and policy assessment, evaluation, and design. Determination of consequences and implications of policies and practices in applied settings.

*COS-Sociology*

**SYA 6660. Seminar in Teaching Sociology**

3(3,0). PR: Graduate standing or C.I. Pedagogical theories and Practices for sociologists.

*COS-Sociology*

**SYA 7019. Advanced Sociological Theory**

3(3,0). PR: SYA 6126 and doctoral standing or C.I. Research seminar in sociological theory.

*COS-Sociology*

**SYA 7309. Advanced Sociological Research Methods**

3(3,0). PR: SYA 6305 and doctoral standing or C.I. Applied research, incorporating aspects of project design, budgeting, grants and contracts, methodological techniques, report writing, and ethical issues.

*COS-Sociology*

**SYA 7407. Advanced Data Analysis**

3(3,0). PR: SYA 6305 and SYA 6455 and doctoral standing or C.I. Multivariate statistical techniques and the development of computer skills.

*COS-Sociology*

**SYA 7457. Topics in Data Analysis**

3(3,0). PR: SYA 7407 and doctoral standing or C.I. Application of multivariate statistical techniques.

*COS-Sociology*

**SYA 7658. Social Policy and Research Analysis**

3(3,0). PR: Doctoral standing or C.I. Sociological perspectives on creation, development, implementation, and consequences of social policy.

*COS-Sociology*

**SYD 5517. Environment and Society**

3(3,0). PR: Graduate standing or C.I. The application of sociological theory and methods to the relationships between communities, societies, and the environment

*COS-Sociology*

**SYD 5795. Class, Race, and Gender in American Society**

3(3,0). PR: Graduate standing or C.I. Using theoretical and empirical studies, this course will provide a sociological examination of the intersections of race, class, and gender in American society.

*COS-Sociology*

**SYD 6417. Contemporary Urban Sociology**

3(3,0). PR: Graduate standing or C.I. Contemporary issues in urban sociology.

*COS-Sociology*

**SYD 6418. Issues in Urban Sociology**

3(3,0). PR: Graduate standing in Sociology or related field, or C.I. Development and current condition of urban residents.

*COS-Sociology*

**SYD 6428. Poverty, Homelessness and the Cities**

3(3,0). PR: Graduate standing in sociology or related discipline or C.I. Poverty, homelessness and their impact on American cities in the 21st century.

*COS-Sociology*

**SYD 6515. Race, Class and Environmental Justice**

3(3,0). PR: Graduate standing or C.I. The sociological study and analysis of the distributional impacts of environmental degradation on poor people and people of color.

*COS-Sociology*

**SYD 6516. Human Dimensions of Natural Resource Management**

3(3,0). PR: Graduate standing or C.I. The dynamic relationship between social and ecological systems, and the integral role of natural resource agencies.

*COS-Sociology*

**SYD 6705. Seminar in Race and Ethnicity**

3(3,0). PR: Graduate standing in Sociology or C.I. A sociological examination of the experiences of racial and ethnic groups in the United States.

*COS-Sociology*

**SYD 6735. Seminar in the Sociology of Aging**

3(3,0). PR: Graduate standing or C.I. Research-oriented seminar covering historical, present and future sociocultural perspectives of aging.

*COS-Sociology*

**SYD 6809. Seminar in Gender Issues**

3(3,0). PR: Graduate standing in Sociology or C.I. Using theoretical and empirical studies, this course will provide a sociological examination of gender issues that influence relationships between women and men.

*COS-Sociology*

**SYO 6175. Social Research in the Family**

3(3,0). PR: Graduate standing or C.I. To offer an overview of current research in the family. The family will be viewed from the institutional level, individual social system, and individual level.

*COS-Sociology*

**SYO 6405. Sociology of Health and Illness**

3(3,0). PR: Graduate standing or C.I. Sociological models of health and illness.

*COS-Sociology*

**SYO 6515. Issues in Social Disorganization**

3(3,0). PR: Graduate standing or C.I. Sociological study and analysis of the manner in which American society is organized and the consequences of the way in which its cultural premises are arranged.

*COS-Sociology*

**SYP 5005. Sociological Social Psychology**

3(3,0). PR: Graduate standing or C.I. An exploration of sociological social psychological theories and their application in understanding the effects of society and groups on the individual.

*COS-Sociology*

**SYP 5525. Sociological Criminology**

3(3,0). PR: Graduate standing or C.I. To examine current sociological knowledge and research on various issues in Criminology, and to further students' skills in developing/ conducting research projects.

*COS-Sociology*

**SYP 5566. Seminar on Domestic Violence: Theory, Research and Social Policy**

3(3,0). PR: Graduate status or senior standing or C.I. A sociological examination and evaluation of theories, empirical research and social policy related to the study of domestic violence.

*COS-Sociology*

**SYP 5615. Sociology of Culture**

3(3,0). PR: Graduate standing or C.I. Major theoretical approaches and empirical studies in the sociology of culture and analysis of cultural processes.

*COS-Sociology*

**SYP 5738. Seminar on the Welfare State and Aging**

3(3,0). PR: Graduate standing or C.I. A sociological examination of old policies from a cross-cultural perspective.

*COS-Sociology*

**SYP 6515. Deviant Behavior Issues**

3(3,0). PR: Graduate standing or C.I. An examination and evaluation of the forms of social deviance, and the organizations designed to respond to them.

*COS-Sociology*

**SYP 6518. Guns, Crime and Violence**

3(3,0). PR: Graduate standing in sociology or related discipline or C.I. Role of firearms in America: Guns in history; civilian gun ownership; guns, crime and criminals; and guns and public policy.

*COS-Sociology*

**SYP 6522. Sociological Perspectives on Victims**

3(3,0). PR: Graduate standing or C.I. An analytical examination of crime victims and victimology from a sociological perspective.

*COS-Sociology*

**SYP 6524. Social Organization of Homicide**

3(3,0). PR: Graduate standing or C.I. An in-depth analysis of the social and cultural context of homicide and of intervention strategies. The primary emphasis is on the contemporary U.S.

*COS-Sociology*

**SYP 6546. Crime, Law, Inequality**

3(3,0). PR: Graduate standing. The consequences of social stratification on criminality and treatment/protection by the legal system. This course examines literature concerning inequality and the sociology of law.

*COS-Sociology*

**SYP 6555. Sociology of Alcohol and Drugs**

3(3,0). PR: Graduate standing in sociology or related fields or C.I. Themes and research literatures in the sociology of alcohol and drug use, misuse and abuse and the social policy response.

*COS-Sociology*

**SYP 6561. Child Abuse in Society**

3(3,0). PR: Graduate standing or C.I. A sociological examination of literature and current research pertaining to child abuse and neglect.

*COS-Sociology*

**SYP 6563. Reactions to Domestic Violence**

3(3,0). PR: Graduate standing or C.I. The reactions by communities, victims, and professionals to domestic violence. Topics include examination of policies on domestic violence, and issues relating to race, class, and gender.

*COS-Sociology*

**SYP 6565. Elder Abuse and Neglect**

3(3,0). PR: Graduate standing or C.I. A sociological examination of elder abuse and neglect in the family and other social settings.

*COS-Sociology*



**TAX 5015. Advanced Tax Topics**

3(3,0). PR: Accounting major or minor, TAX 4001 or equivalent. Advanced tax issues affecting individuals and business entities, including corporations and partnerships.  
*BA-Accounting*

**TAX 6065. Tax Research**

3(3,0). PR: TAX 4001 and graduate standing. Legal and ethical guidelines governing tax practice.  
*BA-Accounting*

**TAX 6135. Taxation of Corporations and Shareholders**

3(3,0). PR: TAX 4001 and graduate standing. Federal taxation relating to corporate organization, distributions, liquidations, accumulations, and reorganizations.  
*BA-Accounting*

**TAX 6205. Partnership Taxation**

3(3,0). PR: TAX 4001 and graduate standing. Federal taxation relating to partnership income including formation, distribution, and retirements.  
*BA-Accounting*

**TAX 6405. Taxation of Estates and Gifts**

3(3,0). PR: TAX 4001 and graduate standing. Federal transfer taxes affecting gifts and estates.  
*BA-Accounting*

**TAX 6505. International Taxation**

3(3,0). PR: TAX 4001 and graduate standing. Study of federal tax issues related to international transactions affecting U.S. and foreign taxpayers.  
*BA-Accounting*

**TAX 6845. Tax Planning and Consulting**

3(3,0). PR: TAX 4001 and graduate standing. Individual and business tax planning.  
*BA-Accounting*

**THE 5205. American Theatre**

3(3,0). PR: THE 5910, and MA or MFA Theatre Graduate. Examination of performance and historical perspectives of American drama.  
*CAH-Theatre*

**THE 5248. Musical Theatre in History**

3(3,0). PR: Admission to MFA Musical Theatre Program. A chronological study of musical theatre from early Viennese operetta to the musicals of the modern age. Course will emphasize the work of composers, librettists, and lyricists as well as representative masterworks of a variety of genre. Emphasis will be placed upon historical trends and theatrical viability.  
*CAH-Theatre*

**THE 5278C. Musical Theatre Lab**

1(1,1). PR: TPP 5157C. Practical course in developing musical theatre skills for the actor.  
*CAH-Theatre*

**THE 5288. Period Costumes, Architecture and Décor I**

3(3,0). PR: Admission into Theatre MFA Design Track. Costumes, architecture and decor from antiquity to the renaissance.  
*CAH-Theatre*

**THE 5289. Period Costumes, Architecture and Décor II**

3(3,0). PR: THE 5288. Costumes, architecture and decor from the Renaissance to present.  
*CAH-Theatre*

**THE 5307. Contemporary Theatre Practice**

3(3,0). PR: THE 3311, THE 3312, THE 3313, Restricted to Theatre majors or departmental consent. Contemporary trends in plays and theatre production in the late 20th century.  
*CAH-Theatre*

**THE 5385. Dramatic Literature for Children**

3(3,0). PR: Admission to MFA graduate program or C.I. An in-depth study of the growth and development of dramatic literature for children.  
*CAH-Theatre*

**THE 5910. Research Methods in Theatre**

3(3,0). PR: MFA and MA in Theatre. Practice knowledge, skills and techniques needed by students to conduct research to include organization, styles, footnotes, and bibliographic forms.  
*CAH-Theatre*

**THE 5945L. Theatre Practicum I**

1(0,20). PR: Graduate status or C.I. A laboratory course designed to develop students' practical working knowledge in Theatre.  
*CAH-Theatre*

**THE 5946L. Theatre Practicum II**

1(0,20). PR: Admission into the graduate program, Theatre Practicum I. A laboratory course designed to develop students' practical working knowledge in theatre.  
*CAH-Theatre*

**THE 6086C. Careers in Professional Theatre**

3(2,2). PR: Admission to the graduate program in Theatre or C.I. Practical courses focusing on job search skills and other aspects of marketing yourself.  
*CAH-Theatre*

**THE 6308. Script and Score Analysis**

3(3,0). PR: Admission to MFA Musical Theatre program. Representative works from the musical theatre repertoire analyzed as dramatic and musical literature.  
*CAH-Theatre*

**THE 6344. Musical Theatre Directing**

3(3,0). PR: Admission to MFA Musical Theatre program. A comprehensive study and practical application of the unique problems of directing for the musical stage.  
*CAH-Theatre*

**THE 6507. Dramatic Theory and Criticism**

3(3,0). PR: Admission into Theatre graduate program and research methods course. Examination of principles of dramatic criticism from Aristotle to the present day.  
*CAH-Theatre*

**THE 6726. Advanced TYA Seminar**

3(3,0). PR: THE 5910 and THE 6756. Historical, theoretical, and international contexts shaping the field of Theatre for Young Audiences.  
*CAH-Theatre*

**THE 6756. Methods of Teaching Drama**

3(3,0). PR: Admission to Theatre graduate program or C.I. Methods of teaching drama in contained classroom settings to youth.

*CAH-Theatre*

**THE 6947L. Theatre Practicum III**

1(0,20). PR: Admission into the graduate program, Theatre Practicum II. A laboratory course designed to develop students' practical working knowledge in theatre.

*CAH-Theatre*

**THE 6948. Professional Internship**

3(3,0). PR: Admission to MFA Musical Theatre Majors. Field work as company members of the Seaside Musical Theatre professional theatre.

*CAH-Theatre*

**TPA 5029C. Lighting Design Studio**

3(2,2). PR: TPA 5042C and TPA 5062C. Advanced work in the process of designing light for the stage with an emphasis on the use of light as artistic expression.

*CAH-Theatre*

**TPA 5042C. Costume Design Studio**

3(2,2). PR: Admission to the graduate program in Theatre or C.I. Project oriented course in the advance study of Costume Design.

*CAH-Theatre*

**TPA 5062C. Scene Design Studio**

3(2,2). PR: Graduate status or C.I. Advanced work in the conceptualization and communication of scenic designs for the theatre.

*CAH-Theatre*

**TPA 5081C. Design Concepts for Youth Theatre**

3(3,3). PR: Admission to the graduate program in Theatre or C.I. A study of design elements (lighting, costume, set) as they apply to youth theatre.

*CAH-Theatre*

**TPA 5085C. Design Seminar for Theatre**

2(2,2). PR: Admission into Theatre MFA Design track. Scenic, costume, lighting and sound design for theatre.

*CAH-Theatre*

**TPA 5095C. Rendering for Theatre I**

1(1,1). PR: Admission to the graduate program in Theatre or C.I. Traditional visual communication skills necessary for scenic, costume, and lighting design.

*CAH-Theatre*

**TPA 5175C. Rendering for Theatre II**

1(1,1). PR: TPA 5095C. Software and technology available for visual communication and documentation.

*CAH-Theatre*

**TPA 5345C. 2D Computer Assisted Design for Theatre**

2(2,2). PR: Admission into the Theatre MFA Design track. Two-Dimensional computer drafting and editing techniques applicable to theatre design.

*CAH-Theatre*

**TPA 5346C. 3D Modeling for Theatre**

2(2,2). PR: TPA 5345C. Three-dimensional computer modeling and editing techniques applicable for theatre design.

*CAH-Theatre*

**TPA 5405. Theatre Management for Non-Majors**

3(3,0). PR: THE 2020 or THE 2000, graduate status, or C.I. Study of university, community and professional theatre management with special attention to the principles of management to include management skills/function and organizational systems/performance as they relate to theatre organizations/institutions.

*CAH-Theatre*

**TPA 5885C. Puppetry**

2(2,2). PR: Admission to MFA graduate program or C.I. Puppetry as an art form in design and performance.

*CAH-Theatre*

**TPA 5946C. Design Practicum I**

1(0,20). PR: Admission into the MFA Design program. Practical experience as a member of the production team as a prop master or assistant scenic, costume, lighting, or sound designer.

*CAH-Theatre*

**TPA 5949C. Design Practicum II**

1(0,20). PR: Admission into the graduate program and TPA 5946C or C.I. Advanced work in the practical application of Properties and/or Design for the Theatre.

*CAH-Theatre*

**TPA 6087C. Advanced Design Seminar for Theatre**

3(3,2). PR: TPA 5085C. Continuation of Design Seminar for Theatre.

*CAH-Theatre*

**TPA 6096C. Advanced Rendering and Modeling for Theatre I**

3(2,2). PR: TPA 5095C. Technology relating to visual communication as well as 3 dimensional communication tools. May be used in the degree program a maximum of 3 times.

*CAH-Theatre*

**TPA 6097C. Advanced Rendering and Modeling for Theatre II**

3(2,2). PR: TPA 6096C. A continuation of Advanced Rendering and Modeling I with an emphasis on creating a professional portfolio of advanced work.

*CAH-Theatre*

**TPA 6106C. Sound Design Studio**

3(2,2). PR: MFA Design candidate, Advanced Problems in Design I. Advanced work in the process of designing sound for the stage with an emphasis on the use of sound as artistic expression.

*CAH-Theatre*

**TPA 6209C. Theatre Crafts**

3(1,12). PR: MFA Design candidates, Advanced Problems in Design I. Advanced practical application course covering various design and technology based skills relating to the realization of departmental productions.

*CAH-Theatre*

**TPA 6288C. Mask Making**

3(2,2). PR: Admission to MFA graduate program or C.I. Masks as an art form in design and performance.  
*CAH-Theatre*

**TPA 6406C. Theatre Management**

3(1,6). PR: Admission to MFA graduate program or C.I. Study and application of concepts and tools of theatre management.  
*CAH-Theatre*

**TPA 6947. Design Practicum III**

1(0,20). PR: TPA 5949C. Practical experience as a member of the production team as a scenic, costume, lighting, or sound designer in an area not previously designed.  
*CAH-Theatre*

**TPA 6948L. Design Practicum IV**

1(0,20). PR: MFA Design Candidate, Design Practicum III. Practical experience as a member of the production team as a scenic, costume, lighting, or sound designer in an area not previously designed  
*CAH-Theatre*

**TPP 5125C. Improvisation Studio**

2(2,2). PR: Acting for Youth Theatre. A study of spontaneous dramatic play and theatre exercises designed to develop self-discipline, creative freedom and resources for the stage and classroom.  
*CAH-Theatre*

**TPP 5156C. Acting Studio I**

3(2,2). PR: Admission to Theatre MFA Acting or Musical Theatre Track. An advanced scene study course with emphasis on scene analysis and character development and application of acting techniques in modern contemporary American plays.  
*CAH-Theatre*

**TPP 5157C. Acting Studio II**

3(2,2). PR: TPP 5156C. Advanced scene study course applying acting methodologies to the works of modern (1850-) European playwrights with emphasis on the works of Ibsen/Chekhov/Shaw.  
*CAH-Theatre*

**TPP 5246C. Circus Arts**

2(2,2). PR: Admission to Theatre graduate program or C.I. Circus skills and history.  
*CAH-Theatre*

**TPP 5248C. Storytelling as a Theatrical Art Form**

2(2,2). PR: Admission to Theatre graduate program or C.I. Application of storytelling as an art form.  
*CAH-Theatre*

**TPP 5273. Musical Theatre Acting I**

2(2,0). PR: TPP 5157C. Integrated study in musical theatre acting, singing and movement applied to musical theatre performance, direction and choreography; emphasizing developing skills in textual and musical interpretation.  
*CAH-Theatre*

**TPP 5289C. Acting Methodologies**

2(2,3). PR: Admission to the graduate program in Theatre or C.I. Approaches to acting.  
*CAH-Theatre*

**TPP 5386C. Directing for Young Audiences**

3(3,3). PR: THE 5910 and THE 5385. Study of the principles, procedures, and practices of stage direction as it applies to theatre for young audiences.  
*CAH-Theatre*

**TPP 5515. Movement Studio I**

2(2,0). PR: Admission to MFA Performance Program. Graduate level course in principles and methods of movement for the stage focusing on relaxation, centering, increased physical control, and physical development of a character.  
*CAH-Theatre*

**TPP 5516C. Movement Studio II**

2(2,1). PR: TPP 5515 or C.I. Principles and methods of movement for the stage focusing on gaining specific knowledge and skills in period styles of movement and basic unarmed combat.  
*CAH-Theatre*

**TPP 5554C. Musical Theatre Dance I**

2(2,4). PR: MFA Musical Theatre Majors. Advanced dance study with particular emphasis on the development of principles of alignment, coordination, isolation, and sequencing.  
*CAH-Theatre*

**TPP 5555C. Musical Theatre Dance II**

2(2,4). PR: TPP 5554C. Advanced dance study with particular emphasis on the development and expression of characterization in dance.  
*CAH-Theatre*

**TPP 5715C. Stage Voice I**

2(2,1). PR: Admission to MFA performance program. An introduction/review class examining the fundamentals of speaking on stage: the correct production of sound, breathing, relaxation of physical tension, and articulation  
*CAH-Theatre*

**TPP 5716C. Stage Voice II**

2(2,1). PR: Admission to the MFA Performance program and TPP 5715C or C.I. Continuation of Graduate Voice Production I, studying Skinner's narrow transcription with consonants, review of all Linklater work, and introduction to the work of Arthur Lessac.  
*CAH-Theatre*

**TPP 5754. Musical Theatre Voice I**

2(2,0). PR: Admission to MFA Musical Theatre program. Voice study devoted to the diagnosis and development of the singing voice and its application to musical theatre performance placing particular emphasis upon vocal technique.  
*CAH-Theatre*

**TPP 5935C. Contemporary Practices in Youth Theatre**

2(2,2). PR: Admission to MFA graduate program or C.I. Investigation of a particular subject in youth theatre. May be used in the degree program a maximum of 5 times.  
*CAH-Theatre*

**TPP 6146. Acting Studio III**

3(2,2). PR: TPP 5157C. An advanced acting course dealing with Shakespeare and other verse playwrights, with emphasis on verse, scene analysis and character development.

*CAH-Theatre*

**TPP 6186C. Advanced Scene Study**

3(3,1). PR: TPP 5156C. Acting process and craft techniques related to the commercial theatre.

*CAH-Theatre*

**TPP 6216C. Theatre for Young Audiences Tour**

3(3,6). PR: Admission to the graduate program in Theatre or C.I. Performance, administration and technical work on a touring production for young audiences.

*CAH-Theatre*

**TPP 6247. Theatre for Social Change**

3(3,0). PR: Methods of Teaching Drama. The study and application of interactive theatre techniques to effect change related to social, cultural, interpersonal and personal issues.

*CAH-Theatre*

**TPP 6267. Acting Studio V: TV/FILM**

3(3,0). PR: TPP 6518C and MFA Theatre Graduate. Technical and practical aspects of acting for Film and Television.

*CAH-Theatre*

**TPP 6274. Musical Theatre Acting II**

2(2,0). PR: TPP 5273. Advanced and integrated study with emphasis on the development of skills in musical theatre characterization.

*CAH-Theatre*

**TPP 6279. Musical Theatre Master Class**

2(2,0). PR: Admission to Theatre MFA Musical Theatre Track. Master classes conducted by permanent staff members and guest artists of the Seaside Music Theatre Company.

*CAH-Theatre*

**TPP 6517. Movement Studio III**

2(2,1). PR: TPP 5516C. Continuation of principles/ methods of movement for the stage covered in Movement Studio II with focus on gaining specific skills in dance for musical theatre/period plays.

*CAH-Theatre*

**TPP 6518C. Movement Studio IV**

2(2,3). PR: Movement Studio III. Covers the principles/ methods of armed/unarmed combat for the stage, including hand to hand, foil, epee, broadsword, sabre, rapier, dagger, and quarter staff combat.

*CAH-Theatre*

**TPP 6556C. Musical Theatre Dance III**

2(2,4). PR: TPP 5555C. Advanced dance study with particular emphasis on the development of jazz and tap technique.

*CAH-Theatre*

**TPP 6557C. Musical Theatre Dance IV**

2(2,4). PR: TPP 6556C. Advanced dance study with particular emphasis on the development of musical theater dance style and choreography.

*CAH-Theatre*

**TPP 6686. Playwriting for Young Audiences**

3(3,0). PR: Dramatic Literature for Children. Practical experience in the creative process of playwriting for young audiences.

*CAH-Theatre*

**TPP 6717C. Stage Voice III**

2(2,1). PR: Grad Voice Stud II. A continuation of the work started in Stage Voice I and II. Study of Shakespeare's language and text in performance.

*CAH-Theatre*

**TPP 6718C. Stage Voice IV**

2(2,3). PR: Stage Voice III. A practical study of American and European dialects with application of Skinner and Lessac transcription.

*CAH-Theatre*

**TPP 6755. Musical Theatre Voice II**

2(2,0). PR: Admission to MFA Musical Theatre program. Advanced voice study placing particular emphasis upon textual analysis and characterization.

*CAH-Theatre*

**TPP 6756. Musical Theatre Voice III**

2(2,0). PR: Admission to MFA Musical Theatre program. Continuation of Musical Theatre Voice II placing particular emphasis upon knowledge of musical theatre repertoire and its application to the history of the art form.

*CAH-Theatre*

**TPP 6757. Musical Theatre Voice IV**

2(2,0). PR: Admission to MFA Musical Theatre program. Continuation of Musical Theatre Voice III placing particular emphasis on synthesizing scene-to-song vocal production.

*CAH-Theatre*

**TSL 5143. ESOL Strategies**

3(3,0). PR: Graduate status or senior standing or C.I. This course will survey cross-cultural communication and understanding, testing and evaluation, curriculum and methods of teaching ESOL to meet the needs of limited English proficient students.

*CAH-Modern Languages*

**TSL 5345. Methods of ESOL Teaching**

3(3,0). This course is designed to develop understanding, knowledge and skills of the current methods used in the teaching of ESOL.

*ED-Teaching & Learning Princ*

**TSL 5376. Reading and Writing in a Second Language**

3(3,0). PR: Graduate standing or C.I. Theoretical and pedagogical approaches to ESOL reading and writing.

*CAH-Modern Languages*

**TSL 5380. Computers and Technology for ESOL**

3(3,0). PR: Graduate standing or C.I. Emphasizes research in computer assisted language learning, as well as design and evaluation of software and websites for learning English as a second language.

*CAH-Modern Languages*

**TSL 5525. ESOL Cultural Diversity**

3(3,0). This course is designed to identify major cultural groups represented by the LEP population in Florida schools and to understand their special needs.

*ED-Teaching & Learning Princ*

**TSL 5528. Teaching Language Minority Students in K-12 Classrooms**

3(3,0). PR: Admission to College of Education Master of Arts Program or C.I. Teaching K-12 limited English proficient (LEP) students. Florida standards regarding cross-cultural communication, ESOL curriculum, and materials, ESOL methodology, testing and evaluation of ESOL students, applied linguistics.

*ED-Teaching & Learning Princ*

**TSL 5940. Issues in TEFL**

3(3,0). PR: Graduate status or senior standing or C.I. Address issues specifically related to TEFL, such as materials adaptation, teaching in multi-level classrooms, learning styles, cultural issues, and curriculum syllabus design.

*CAH-Modern Languages*

**TSL 6142. Critical Approaches to ESOL**

3(3,0). Emphasis placed on current research in second language acquisition as it relates to the development of ESOL curriculum and materials.

*CAH-Modern Languages*

**TSL 6250. Applied Linguistics in ESOL**

3(3,0). Applying linguistics, psycholinguistics, and sociolinguistics to teaching English as a second language with emphasis on pronunciation, intonation, structural analysis, morphophonemics, and decoding from print to sound.

*CAH-Modern Languages*

**TSL 6252. Sociolinguistics for ESOL**

3(3,0). PR: Graduate standing or C.I. Core concepts in the field of sociolinguistics as it relates to the teaching of English as a second language.

*CAH-Modern Languages*

**TSL 6253. Applied Linguistics K-12**

3(3,0). PR: Graduate standing. Applying linguistics to teaching ESOL learners in K-12 with emphasis on pronunciation, ESL grammar, structural analysis, morphophonemics, and decoding from print to sound.

*CAH-Modern Languages*

**TSL 6350. Grammar for ESOL Teachers**

3(3,0). PR: Graduate standing or C.I. Emphasis on English grammar for English as a Second Language teachers. Includes analytical and theoretical background, but primarily examines problematic grammar points for ESOL learners.

*CAH-Modern Languages*

**TSL 6440. Problems in Evaluation in ESOL**

3(3,0). This course provides for the development of sound assessment knowledge necessary to prepare students to apply second language assessment theories, principles, and current research.

*CAH-Modern Languages*

**TSL 6640. Research in Second Language**

3(3,0). PR: EDF 6481. This course focuses on research into language learning processes which serves as a knowledge base for effective teaching of language-minority students.

*CAH-Modern Languages*

**TSL 6642. Issues in Second Language Acquisition**

3(3,0). Focuses on second language acquisition theories, principles, and current research as they relate to language-minority students acquiring English as a Second Foreign Language.

*CAH-Modern Languages*

**TSL 6940. ESOL Practicum**

3(3,0). PR: C.I. Techniques and strategies for creating affective lesson plans for ESOL classroom activities.

Graded S/U.

*CAH-Modern Languages*

**TTE 5204. Traffic Engineering**

3(3,0). PR: TTE 4004. Study of operator and vehicle characteristics, and design for street capacity, signals, signs, and markings.

*ECS-Civil & Environmental*

**TTE 5700. Railroad Engineering**

3(3,0). PR: TTE 4004 and C.I. The major technical factors in location, construction, maintenance, and operation of railroad transportation systems.

*ECS-Civil & Environmental*

**TTE 5805. Geometric Design of Transportation Systems**

3(3,0). PR: TTE 4004 or C.I. Study of highway geometric design in the engineering of transportation systems.

*ECS-Civil & Environmental*

**TTE 5835. Pavement Design**

3(3,0). PR: CEG 4011C. Pavement types, wheel loads, stresses in pavement components; design factors such as traffic configurations, environment, and economy.

*ECS-Civil & Environmental*

**TTE 6205. Highway Capacity**

3(3,0). PR: TTE 4004 or C.I. Highway capacity for all functional classes of highway. Traffic signalization including traffic studies, warrants, cycle length, timing, phasing and coordination.

*ECS-Civil & Environmental*

**TTE 6256. Traffic Operations**

3(3,0). PR: TTE 4004 and STA 3032 or C.I. Fundamental theories and applications of traffic movements on streets and highways.

*ECS-Civil & Environmental*

**TTE 6270. Intelligent Transportation Systems**

3(3,0). PR: TTE 4004 or C.I. Theories and applications of intelligent vehicle highway systems in transportation engineering.

*ECS-Civil & Environmental*

**TTE 6315. Traffic Safety Analysis**

3(3,0). PR: TTE 4004 and C.I. Understanding crash research concepts, and identifying factors contributing to traffic crash occurrence.

*ECS-Civil & Environmental*

**TTE 6526. Planning and Design of Airports**

3(3,0). PR: C.I. Background of aviation and airport development, aircraft characteristics. Planning and design of airport components. Heliport and STOL ports and pavement and drainage design.

*ECS-Civil & Environmental*

**TTE 6625. Mass Transportation Systems**

3(3,0). PR: C.I. Planning, design, construction, operation, and administration of mass transportation systems.

*ECS-Civil & Environmental*

**WST 5347. Research Seminar in Gender Studies**

3(3,0). PR: Graduate status or senior standing, or C.I. Research seminar exploring relationships among feminist theorizing, research, and social change, the development of gender studies programs and their relationships to other academic disciplines.

*CAH-Women's Studies*

**WST 5601. Theories in Gender Studies**

3(3,0). PR: Graduate standing, Gender Studies graduate certificate standing, or C.I. Foundational scholarship in gender studies, with emphasis on theoretical and interdisciplinary approaches to gender and sexuality.

*CAH-Women's Studies*

**ZOO 5456C. Ichthyology**

4(2,6). PR: ZOO 4310C, and graduate status or senior standing or C.I. Introduction to the biology of the fishes, their classification, evolution, and life histories.

*COS-Biology*

**ZOO 5463C. Herpetology**

4(2,6). PR: 6 hours of Zoology, and graduate status or senior standing, or C.I. Introduction to the biology of the amphibians and reptiles, their classification, evolution, and life histories.

*COS-Biology*

**ZOO 5475L. Field Ornithology**

3(0,6). PR: PCB 3044 and graduate standing or C.I. Introduction to the identification, taxonomy, natural history, and biology of birds, with emphasis on survey techniques and systematics.

*COS-Biology*

**ZOO 5486C. Mammalogy**

4(2,6). PR: 6 hours of Zoology, and graduate status or senior standing, or C.I. Introduction to the biology of mammals, their classification, evolution, and life histories.

*COS-Biology*

**ZOO 5520. Behavioral Ecology**

3(3,0). PR: Graduate status or senior standing, and C.I. Introduction to the field of Behavioral Ecology, which studies evolution of animal behavior in the wild.

*COS-Biology*

**ZOO 5745C. Essentials of Neuroanatomy**

4(3,3). PR: Human/Comparative Anatomy, or Human/Animal Physiology or C.I. Fundamental concepts of both morphological and functional organization of the nervous system. Primary emphasis on human structure.

*COM-Molecular & Microbiology*

**ZOO 5748C. Clinical Neuroanatomy**

5(3,2). PR: ZOO 3733C Human Anatomy. Provides the necessary knowledge to understanding the complexities of human nervous system, its normal and pathologic functions, relevant to practice of general medicine and/or neuroscientists.

*COM-Molecular & Microbiology*

**ZOO 5881C. Fisheries Management**

4(3,4). PR: ZOO 4310C, graduate status or senior standing, or C.I. Fisheries management of freshwater environments to include identification, sampling methods, farming and hatchery operations, propagation and population estimates.

*COS-Biology*