FLORIDA A&M UNIVERSITY

GENERAL CATALOG

2014/2015

WWW.FAMU.EDU/CATALOG

General Information
An Historical Overview

The Florida Agricultural and Mechanical University electronic catalog is updated annually and constitutes the University's official document of record. The catalog includes general information about the University and information on degree requirements, academics programs, admission and campus life.

The provisions of the catalog do not constitute a contract, expressed or implied, between any applicant, student, or employee, member and the University. The University and its Board of Trustees reserve the right to withdraw courses at any time, to change fees, calendars, curricula, graduation procedures, and any other requirements affecting students. Changes will become effective policies as duly appropriate and will apply both to prospective students and to those already enrolled.

While every effort is made to assure accurate and up-to-date information, the University does not assume any responsibility for any misrepresentation made through error in the preparation of this or any other of its catalogs or through failure to give notice of changes in its requirements, policies, tuition and fees, course offerings, and other matters affecting students or applicants.

The FAMU General Catalog is produced by the Office of Publications in conjunction with the Division of Academic Affairs.

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General Administration

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Commissioner of Education
The Honorable Pam Stewart

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Benjamin L. Perry, Jr., Ph.D., President Emeritus (deceased)

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Ruena Norman, Ph.D., Dean, School of Nursing

Victor M. Ibeanusi, Ph.D., Dean, School of the Environment

REVISED* FAMU OFFICIAL UNIVERSITY CALENDAR SUMMER, 2014*

Activity	Term (A) May 7, 2014- June 17, 2014	Term (B) June 25, 2014- August 1, 2014	Term (C) May 7, 2014- August1, 2014
In-State Residency Re-Classification Period	Mar 17-Apr 11	Mar 17-Apr 11	Mar 17-Apr 11
Regular Registration	Mar 24-May 6	Mar 24-May 6	Mar 24-May 6
Open enrollment for on-line registration begins for Fall, 2014	Apr 12-Aug. 24	Apr 12-Aug. 24	Apr 12-Aug. 24
FAMU/FSU Co-Op & Non-Degree-Seeking Student Applications Due	April 25	June 13	April 25
Residence Halls Open	May 6	June 16	May 6
New Student Orientation	May 6	June 17-19	May 6
Complete "Student Intent To Graduate Form on Registrar's website	May 6	June 25	May 6
Begin to apply for graduation on-line via iRattler	May 6	N/A	May 6
Registration for State/FAMU Employees Non-Degree Seeking	May 6	June 25	May 6
First class meeting	May 7	June 25	May 7
Late Registration. A $100 late fee will be assessed to your account	May 7	June 25	May 7
Last day to apply on-line for graduation (Apply through iRattler)	May 14	June 25	May 14
Last day to pay 100% of all fees without a late penalty of $100	May 13	July 1	May 13
Last day for add/drop of classes	May 13	July 1	May 13
Last day to Appeal: Repeat Course Charge; Academic appeals (Late add/drop requests)	May 16	July 3	May 16
Holiday—University closed for Memorial Day	May 26	N/A	May 26
Holiday—University closed for Independence Day	N/A	July 4	July 4
Last day to withdraw (Course/University) fee liable	June 2	July 18	June 27
Last day of classes	June 13	July 30	July 30
Final Exams	June 16-17	July 31	July 31
Residence halls close at 9 a.m.	June 18	Aug 2	Aug 2
Last day to submit "I," "N," DIS grade or name change	June 17	July 31	July 31
Last day to submit Final Grades before 5:00 p.m.	June 19	Aug 4	Aug 4
Grades available for students to view	June 20	Aug 5	Aug 5
Last day to conduct master's and doctoral defenses	June 27	June 27	June 27
Last day to submit doctoral dissertations	July 7	July 7	July 7
Last day to submit master's theses	July 14	July 14	July 14
Commencement @ Lawson Center, 6:00 p.m. (Degree Conferred Date)	Aug 1	Aug 1	Aug 1
Deadline to submit Degree Certifications to the Registrar's Office	Aug 8	Aug 8	Aug 8

. *FAMU Law School's calendar is different and is listed separately.

** FAMU/FSU College of Engineering students. Your FSU classes may begin May 12, 2014. Go to your college website for more information. FAMU Law School's calendar is different and is listed separately.

FAMU OFFICIAL UNIVERSITY CALENDAR FALL, 2014*

April 7-11, 2014	**Fall 2014 on-line Registration begins *(By Appointment ONLY)***
April 12 – August 24, 2014	**Regular Registration *(Open Enrollment)***
May 12, 2014	**Last day to apply for admission for Fall 2014**
June 30 – August 1, 2014	**In-State Residency Re-classification Period**
July 25, 2014	**Non-Degree Seeking and CO-OP Student Applications Are Due**
August 20 -22, 2014 August 20, 2014 August 21, 2014 August 22, 2014	**Opening for Housing Residents** **FAMU Village Gibbs, Paddyfote, Sampson, Truth and Young ONLY** **Palmetto South and Phase III ONLY** **ALL Facilities**
August 25, 2014	**Late Registration. *$100 late fee will be assessed*** **Begin add/drop**
August 25, 2014	**1st Class Meeting**
August 25 – August 29, 2014	**Registration for State/FAMU Employees and Non-Degree Seeking Students**
August 29, 2014	**Complete "Student Intent to Graduate" form.** **Begin to apply for graduation on-line**
August 29, 2014	**Last day to pay 100% of all fees *Without a late fee ($100):*** **End of add/drop**
September 1, 2014	**Holiday – University Closed in observance of Labor Day**
September 2, 2014	**Last day to appeal:** - **Repeat Course Charges** - **Academic appeals/adjustments**
September 19, 2014	**Last day to apply on-line for graduation**
October 27, 2014	**Spring 2015 on-line Registration (By appointment ONLY) begins**
November 1 – January 6, 2015	**Spring 2015 Regular on-line Registration**
November 7, 2014	**Last Day to Withdraw (Course/Term)** ***Last day to conduct master's and doctoral defenses***
November 11, 2014	**Holiday – University Closed in observance of Veterans Day**
November 14, 2014	***Last day to submit master's thesis*** ***Last day to submit doctoral dissertations***
November 27-28, 2014	**Holiday – University Closed in observance of Thanksgiving**
December 5, 2014	**Last day for instructors to submit "I", "N", or a "DIS" grade or title change**
December 5, 2014	**Last day of classes**
December 8-12, 2014	**Final Exams**
December 12, 2014	**Commencement held at the Alfred Lawson Multipurpose Teaching Gym @ 6:00 p.m. [Degree Conferred Date]**
December 13, 2014	**Residence Halls close @ 9:00 a.m.**
December 8-16, 2014	**Submit Final Grades before 5:00 p.m.**
December 17, 2014	**Grades available for students to view**
December 19, 2014	**Deadline for degree Certification**

Dates and times subject to change. Refer to the Registrar's website http://www.famu.edu\Registrar. College of Law calendar is separate.

FAMU OFFICIAL UNIVERSITY CALENDAR Spring, 2015*

October 27 – October 31, 2014	**Early 2015 Spring Registration by Appointment *(By Appointment ONLY)***
November 1, 2014 – January 6,, 2015	**Regular Registration *(Open Enrollment)***
November 14, 2014	**Last day to apply for admission for Spring 2015**
November 17 – December 12, 2014	**In-State Residency Re-Classification Period**
November 24 – December 12, 2014	**Non-Degree Seeking, State Employees and FAMU/FSU CO-OP Student Applications Due**
December 15, 2014	**Begin submitting completed "Student Intent to Graduate" form for Spring 2015 to Advisor**
January 2	**Resident Halls Open**
January 5	**New Student Orientation**
January 2	**Registration Points**
January 7 - 9	**Late Registration begins *($100 late fee will be assessed)* Add/drop**
January 7	**1st Class Meeting**
January 9	**Intent to Graduate – Advisors place service indicators (ETA) on iRattler. Students may begin to apply for graduation on-line**
January 5 - 9	**Registration for Non-Degree Seeking, State/FAMU Employees and FAMU/FSU CO-OP**
January 13	**Last day to pay 100% of all fees *Without a late fee ($100):* End of Add/drop**
January 16	**Last day to appeal:** **- Repeat Course Charge** **- Academic appeals/Late add/drop requests**
January 19	**Holiday – (Martin Luther King, Jr.)**
February 6	**Last day to apply on-line for graduation (Apply on-line through iRattler)**
March 9 – 13	**SPRING BREAK**
March 27	**Last day to withdraw: course/university (100% Fee Liable)** **Last day to conduct master's and doctoral defenses**
April 6 - 10	**Early Fall 2015 on-line Registration (By appointment ONLY) begins**
April 11, 2014 – August 23, 2015	**Regular Fall 2015 Regular on-line Registration**
April 10	***Last day to submit master's thesis*** ***Last day to submit doctoral dissertations***
April 24	**Last day for instructors to submit "I", "N", or a "DIS" grade or title change**
April 24	**Last day of classes**
April 27-May 1, 2015	**Final Examinations**
April 29 – May 4	**Submit Final Grades before 5:00 p.m.**
May 2, 2015	**Commencement held at the Alfred Lawson Multi-Purpose Teaching Gym @ 9:00 a.m., 2:00 p.m. and 6:00 p.m. (Degree Conferred Date)**
May 3	**Residence Halls close @ 9:00 a.m.**
May 5	**Grades available for students to view**
May 8	**Deadline for Degree Certification**

****Dates and times subject to change. Refer to the Registrar's website http://www.famu.edu\Registrar. College of Law calendar is separate.***

Florida A&M University College of Law

Academic Calendar – 2014-2015

Fall Semester, 2014 (14 Weeks)

First-Year Orientation	August 4-8	Monday-Friday
Classes Begin	August 11	Monday
Last day to add or drop classes	August 15	Friday
Labor Day Holiday	September 1	Monday
Veteran's Day Holiday	November 11	Tuesday
Last day to withdraw from a course without receiving a failing grade	November 12	Wednesday
Labor Day make-up	November 17	Monday
Veteran's Day Make-up/ Classes End	November 18	Tuesday
Reading Period	November 19-30	Wednesday-Sunday
Thanksgiving Holiday	November 27-28	Thursday-Friday
Exams Begin	December 1	Monday
Exams End	December 12	Friday
University Commencement	TBA	TBA

Florida A&M University College of Law

Academic Calendar – 2014-2015

Spring Semester, 2015 (14 Weeks)

Classes begin	January 5	Monday
Last day to add or drop classes	January 9	Friday
Martin Luther King, Jr. Day holiday	January 19	Monday
Spring Break	March 9-13	Monday-Friday
Last day to withdraw from a course without receiving a failing grade	April 13	Monday
Martin Luther King, Jr. Day make-up; classes end	April 20	Monday
Reading Period	April 21-26	Tuesday-Sunday
Exams Begin	April 27	Monday
University Commencement	May 2	Saturday
Exams End	May 8	Friday
College of Law Hooding Ceremony	May 9	Saturday

Florida A&M University College of Law

Academic Calendar – 2014-2015

Summer Semester 2015 (10 Weeks of Instruction)

Classes begin	May 13	Wednesday
Last day to add or drop classes	May 20	Wednesday
Memorial Day holiday	May 25	Monday
Independence Day holiday	July 2	Thursday
Last day to withdraw from a course without receiving a failing grade	July 16	Thursday
Memorial Day make-up with ***Monday*** schedule	July 22	Wednesday
Independence Day Make-up	July 23	Thursday
Classes End	July 23	Thursday
Reading Period	July 24-26	Friday-Sunday
Exams Begin	July 27	Monday
Exams End	July 31	Friday
University Commencement	July 31	Friday

General Information

A Historical Overview

Florida Agricultural and Mechanical University was founded as the State Normal College for Colored Students, and on October 3, 1887, it began classes with fifteen students and two instructors. Today, FAMU, as it has become affectionately known, is the premiere school among historically black colleges and universities. Prominently located on the highest hill in Florida's capital city of Tallahassee, Florida A&M University remains the only historically black University in the 12-member State University System of Florida.

In 1884, T**homas Van Renssaler Gibbs**, a Duval County educator, was elected to the Florida legislature. Although his political career ended abruptly because of the resurgence of segregation, Representative Gibbs was successful in orchestrating the passage of House Bill 133, in 1884, which established a white normal school in Gainesville, FL, and a colored school in Jacksonville. The bill passed, creating both institutions; however, the stated decided to relocate the colored school to Tallahassee.

Thomas DeSaille Tucker [1887-1901], an attorney from Pensacola, was chosen to be the first president. Former State Representative Gibbs joined Mr. Tucker as the second faculty member. In 1891, the College received $7,500 under the Second Morrill Act for agricultural and mechanical arts education, and the State Normal College for Colored Students became Florida's land grant institution for colored people. The original College was housed in a single white-framed building and had three departments of study and recreation. At about this time, the College was relocated from its original site on Copeland Street to its present location, and its name was changed to the State Normal and Industrial College for Colored Students.

In 1905, management of the College was transferred from the Board of Education to the Board of Control. This event was significant because it officially designated the College as an institution of higher education. The name was changed in 1909 to Florida Agricultural and Mechanical College for Negroes (FAMC). The following year, with an enrollment of 317 students, the college awarded its first degrees. In spite of a setback caused by a tragic fire that destroyed Duval Hall, the main building which housed the library, administrative offices, cafeteria and other college agencies, progress was made when a gift of $10,000 was presented to the College by Andrew Carnegie for the erection of a new library facility. This facility held the distinction of being the only Carnegie Library located on a black land-grant college campus. President Nathan B. Young [1901-1923] directed the growth of the College to a four-year degree-granting institution, despite limited resources, offering the Bachelor of Science degree in education, science, home economics, agriculture and mechanical arts.

Under the administration of John Robert Edward Lee, Sr., [1924-1944], the College acquired much of the physical and academic image it has today. Buildings were erected; more land was purchased; more faculty were hired; courses were upgraded, and accreditation was received from several state agencies. By 1944, FAMC had constructed 48 buildings, accumulated 396 acres of land, and had 812 students and 122 staff members. In 1949, under the guidance of William H. Gray, Jr. [1944-1949], expansion, along with reorganization, continued; the College obtained an Army ROTC unit, and student enrollment grew to more than 2,000.

Perhaps one of the greatest achievements came under the presidency of **Dr. George W. Gore** [1950-1968]. The Florida legislature elevated the College to University status, and in 1953, Florida A&M College became Florida Agricultural and Mechanical University. Obtaining University status meant restructuring existing programs and designing new academic offerings to meet the demands of producing quality students at the professional and graduate levels. Between 1953 and 1968, the Schools of Pharmacy, Law, Graduate Studies, and Nursing were created.

During the years 1950-1968, the University experienced its most rapid growth. Twenty-three buildings were constructed and renovated with costs totaling more than $14 million. These facilities included the Dairy Barn, Faculty Duplexes, Law Wing of Coleman Library, Gibbs Hall, Tucker Hall, Truth Hall, Agriculture and Home Economics Building [Perry Paige], Student Union Building, Demonstration School Building, Cafeteria, Health and Physical Education Building, Music and Fine Arts Complex, High School Gymnasium, Stadium, and Health and Physical Education Building. The FAMU Hospital was completed and became fully operational in 1956, serving as the only medical facility for Negroes within 150 miles of Tallahassee. FAMU achieved a significant accomplishment by becoming the second Negro institution to become a member of the Southern Association of Colleges and Schools (SACS). Enrollment grew to more than 3,500, and the number of faculty increased by more than 500.

The 50's and 60's were times of social unrest and change in the nation. The students of Florida A&M University were integral in sparking a boycott of the buses in Tallahassee that successfully staged integrated the city's public transportation. As a result of their courage and determination, the students of Florida A&M University established a legacy of social involvement and responsibility as a part of the collegiate experience for future generations of Rattlers.

The period following the turbulent 60's brought unprecedented growth to the University. At a time when federal laws were demanding desegregation, **Dr. Benjamin L. Perry, Jr.** [1968-1977] was credited with preserving the autonomy of Florida A&M. In 1971, FAMU was recognized as a full partner in the nine-University, public higher education system of Florida. The program and academic areas within the institution were extended to include the Black Archives Research Center and Museum, established as a state repository for Black History and Culture; the Division of Sponsored Research; the Program in Medical Sciences (PIMS), in conjunction with Florida State University

and the University of Florida; the development of the School of Architecture; a Naval ROTC unit; establishment of the cooperative programs in agriculture; and a degree-granting program in Afro-American Studies. Enrollment increased from 3,944 (1960) to 5,024 (1970).

The University was re-organized into academic areas instead of departments. The University's physical plants increased with the addition of the Women's Complex (apartment-type dormitory), Clifton Dyson Pharmacy Building, new poultry building and dairy cattle resting shed, and renovation of University Commons, Coleman Library and Tucker Hall. The University Hospital, which was closed in 1971, was renovated and became the Foote-Hilyer Administration Center.

During the administration of **Dr. Walter L. Smith** [1977-1985], the University grew to eleven schools and colleges and a Division of Graduate Studies and Continuing Education. In 1984, the University was granted the authority to offer its first Doctor of Philosophy degree, the Ph.D. in Pharmacology. The 80's also saw the expansion of the Gaither Athletic Center, which included the construction of a new Women's Athletic Complex equipped with a track, an Olympic pool, men's and women's weight training rooms, and softball and baseball fields. Bragg Memorial Stadium was renovated and expanded to provide seating for 25,000 spectators, and a modern field house was erected. The old laundry was converted into the Industrial Education Classroom Laboratory. New facilities were constructed to house the Schools of Allied Health Sciences, Architecture, Business and Industry and Nursing. Construction and renovation projects amounted to more than $34 million. As the University prepared to observe one hundred years of its existence, the Smith administration launched the Centennial Celebration Fund to establish a University Endowment.

In 1985, **Dr. Frederick S. Humphrie**s [1985-2001] became the eighth president of Florida A&M University. The Humphries Years were heralded as a time of unprecedented expansion and achievement. President Humphries presided over the University's Centennial Celebration that began with his inauguration and ended with the burying of a time capsule. During Humphries' tenure, enrollment soared from 5,100 [1985] to 9,551 [1992]. And by the 1998-1999 school year, enrollment had reached 12,000 students. Aggressive and competitive recruitment campaigns attracted more talented students, and FAMU consistently ranked nationally among the top five colleges and universities for enrolling National Achievement finalists. In 1992, 1995 and 1997, FAMU enrolled more National Achievement finalists than Harvard, Yale and Stanford. In 1999, Black Issues in Higher Education cited FAMU for awarding more baccalaureate degrees to African-Americans than any other institution in this nation.

During the 110th Anniversary Celebration, Florida A&M University was selected by the TIME Magazine-Princeton Review as **The 1997-1998 College of the Year**. FAMU was selected from among some of the most prestigious schools in the country to be the first recipient of this honor.

In 2002, as the State of Florida's education system underwent massive reorganization, **Dr. Henry L. Lewis, III**, Dean of the College of Pharmacy and Pharmaceutical Sciences was appointed interim president. Later the same year, on May 17, 2002, the Board of Trustees of Florida A&M University appointed Dr. Fred Gainous [2002-2004], an alumnus, as the ninth president. Dr. Gainous returned to Tallahassee with a vision of creating One FAMU.

On December 14, 2004, the Florida A&M University Board of Trustees made history by appointing **Dr. Castell Vaughn Bryant** as interim president. Dr. Bryant, an alumna, was the first woman to lead the University in its 117 years of existence. President Bryant came with the mission of revitalizing and restructuring the University for the twenty-first century.

Originally designed to meet the needs of the underrepresented and the underprivileged, Florida A&M University continues to serve the citizens of Florida and the world through its provision of pre-eminent educational programs. These programs are the building blocks of a legacy for the hallmark of Florida A&M University: "Excellence with Caring." FAMU, Florida's "opportunity university," is committed to meeting the challenges and need of future generations.

On July 2, 2007, **Dr. James H. Ammons**, became the tenth president of Florida A&M University. Prior to his appointment, he had served as Chancellor of North Carolina Central University (NCCU) from 2001 through 2006 and as provost and vice president for Academic Affairs at FAMU. While provost at Florida A&M University, he developed more than 22 bachelor's, master's and Ph.D. degree programs, and he worked to reestablish the FAMU College of Law. During Dr. Ammons' presidency, he built a top-notch, strong leadership team. In addition, he secured accreditation from the Accreditation Council for Pharmacy Education in which the board voted to reaffirm the College's accreditation status through June 30, 2010. Under his leadership, FAMU also received its first unqualified audit in three years from the Auditor General's Office; and enrolled students in a new doctorate program in physical therapy.

On Aug. 15, 2012, **Dr. Larry Robinson** was named interim president of Florida A&M University. Robinson had served twice as University provost and also had been assistant secretary of commerce for oceans and atmosphere at the National Oceanic and Atmospheric Administration,

Making history as the first permanent female president in the institution's 127-year legacy, **Dr. Elmira Mangum** began her tenure as the 11th president of Florida Agricultural and Mechanical University on April 1, 2014. She is focusing her administration at FAMU on "Building a Brand that Matters in the 21st Century and Beyond." A seasoned administrator, Dr. Mangum has served at the executive level of nationally recognized institutions of higher learning for more than 28 years. From 2010 until her appointment at FAMU, Dr. Mangum served as vice president for planning and budget at Cornell University. Prior to that, President Mangum served in various administrative capacities for nine years at the University of North Carolina – Chapel Hill, including serving as senior associate provost.

Florida A&M's Presidents

Thomas DeSaille Tucker [1887-1901]
Nathan B. Young [1901-1923]
W. H. A. Howard [1923-1924]*
John Robert Edwards Lee, Sr. [1924-1944]
Jubie B. Bragg [1944]*
William H. Gray, Jr. [1944-1949]
H. Manning Efferson [1949-1950]*
George W. Gore [1950-1969]
Benjamin L. Perry [1968-1977]
Walter L. Smith [1977-1985]
Frederick S. Humphries [1985-2001]
Henry Lewis, III [2002]*
Fred Gainous [2002-2004]
Castell Vaughn Bryant [2004-2007]*
James H. Ammons [2007 - 2012]
Larry Robinson [2012-2014]*
Elmira Mangum [2014-Present]

* Served/Serving in an acting or interim capacity

Governance

Florida A&M University, a member of the State University System (SUS), is under the supervision of the FAMU Board of Trustees. The FAMU Board of Trustees is comprised of twelve citizens and one student representative.

The president of the University is appointed by the board and administers the affairs of the University with the assistance of administrative officers, faculty, and staff.

Statements of Purpose

General Purpose: Role of FAMU within the State University System-One of 12 universities in the State University System of Florida, Florida A&M University receives the definition of its role from the Board of Governors, the governing body of the State University System. The University is designated as a general purpose institution with curricular offerings in most of the arts and sciences, business, and education at the baccalaureate level and in some graduate degree programs. Further, the University has been directed to develop a set of academic programs to attract a statewide, rather than a more limited regional, student population, (CF Plans for Equalizing Educational Opportunities in Public Higher Education in Florida, February, 1974, Addenda, pp.7).

Specific Purpose - Within the Board of Governors' guidelines, the FAMU community endorses a more specific statement of purpose for the University.

Philosophically, the University is dedicated to the traditional ideals of learning, focusing its attention and efforts upon the creation, transmission, and application of knowledge. These ideals dictate that FAMU's primary purpose is to advance learning and, thereby, contribute to improving the quality of life for its constituents and their society.

Vision Statement

Florida A&M University (FAMU) will be internationally recognized as a premier land grant and research institution committed to teaching, research, and service preparing transformational graduates with high ethical values dedicated to solving complex issues impacting our global society (2014-2015 Work Plan).

Mission Statement

Florida Agricultural and Mechanical University (FAMU), as an 1890 land-grant institution, is dedicated to the advancement of knowledge, resolution of complex issues and the empowerment of citizens and communities. The University provides a student-centered learning environment consistent with its core values. The faculty is committed to educating students at the undergraduate, graduate, doctoral and professional levels, preparing graduates to apply their knowledge, critical thinking skills and creativity in their service to society. FAMU's distinction as a doctoral/research institution will continue to provide mechanisms to address emerging issues through innovative research, engaging cooperative and public service. While the University continues its historic mission of educating African Americans, FAMU embraces persons of all races, ethnic origins and nationalities as life-long members of the University community.

Florida Agricultural and Mechanical University holds the following values essential to the achievement of the University's mission:

SCHOLARSHIP
EXCELLENCE
OPENNESS
FISCAL RESPONSIBILITY
ACCOUNTABILITY
COLLABORATION
DIVERSITY
SERVICE
FAIRNESS
COURAGE
INTEGRITY/ETHICS
RESPECT
COLLEGIALITY
FREEDOM

Florida A&M University Non-Discrimination Policy Statement

It is the policy of Florida A & M University that each member of the University community is permitted to work or attend class in an environment free from any form of discrimination including race, religion, color, age, disability, sex, sexual harassment, sexual orientation, gender identity, gender expression, marital status, national origin, and veteran status as prohibited by state and federal statutes. This commitment applies to all areas affecting students, employees, applicants for admission and applicants for employment. It is also relevant to the University's selection of contractors, suppliers of goods and services, and any employment conditions and practices. Questions concerning this policy and procedures for filing complaints under the policy should be directed to Mrs. Carrie Gavin (EOP Director/University Title IX Coordinator), located in the Office of Equal Opportunity Programs.

Please also see University Regulation 10.103 Non-Discrimination Policy and Discrimination and Harassment Complaint Procedures, and University Regulation 10.112 Consensual Relationships.The Affirmative Action Plan/Program for Minorities and Women is available for review ONLY at the Office of Equal Opportunity Programs by anyone, upon request, during regular business hours (Monday through Friday, 8 a.m. – 5 p.m.).

The Affirmative Action Plan/Program for Veterans and Persons with Disabilities is available for review by anyone, upon request, during regular business hours (Monday through Friday, 8 a.m. - 5 p.m.) at the following locations:

Office of Human Resources
211 Foote-Hilyer Bldg.
Florida A&M University
Tallahassee, FL 32307
(850) 599-3611
TDD (850) 561-2998

Office of Equal Opportunity Programs
674 Gamble Street
Florida A&M University
Tallahassee, FL 32307
(850) 599-3076

Accreditations

Florida Agricultural and Mechanical University is accredited by the Southern Association of Schools and Colleges Commission on Colleges to award baccalaureate, master's, professional and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia, 30033 or call 404-679-4500 for questions about the accreditation of Florida Agricultural and Mechanical University.

Specialized Accreditations

Accrediting Board for Engineering and Technology, Inc. (ABET)
• Computing Accreditation Commission
• Engineering Accreditation Commission
• Engineering Technology Accreditation Commission
Accreditation Council for Business Schools and Programs (ACBSP)
Accreditation Commission for Education in Nursing (ACEN)
Accrediting Council for Collegiate Graphic Communication (ACCGC)
Accrediting Council for Occupational Therapy Education (ACOTE)
Accreditation Council for Pharmacy Education (ACPE)
Accrediting Council on Education in Journalism & Mass Communication (ACEJMC)
American Bar Association (ABA)
American Chemical Society (ACS)
American Veterinary Medical Association (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA)
Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC)
Association of University Programs in Health Administration (AUPHA)
Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
Commission on Accreditation in Physical Therapy Association (CAPTE)
Commission on Accreditation for Respiratory Care (CoARC)
Council for the Accreditation of Educator Preparation (CAEP)
Council on Education for Public Health (CEPH)
Council on Social Work Education (CSWE)
International Association of Counseling Services, Inc.(IACS)
International Facilities Management Association (IFMA)
National Architectural Accrediting Board (NAAB)

Physical Plant, Facilities, Planning and Construction

The University campus is comprised of 156 buildings situated on 423 acres in the heart of Tallahassee. These physical assets are valued at approximately $409,829,000. As the University modernizes and expands to accommodate its increasing academic and professional programs, the physical plant and facilities planning functions continue to grow.

The most recent capital improvement projects completed by the University include: Jones Hall Renovation, $16,558,534; Tucker Hall Renovation, $16,558,534; Sampson & Young Halls Renovation, $8,827,696; Crestview Rural Diversity Healthcare Facility (Site 11), $9,500,000; GORE Education Complex, $10,044,760; Renovation of the University Track Field, $955,749; FAMU Club House Renovation, $350,000; and the 800-Bed Residence Hall (The Villages), $51,150,410.

In addition to the $17 million that the Physical Plant spent in the Phase I utility improvements to support projects and campus developments with electrical upgrades and general infrastructure technology improvements, campus outdoor lighting, walkways and, utility systems and roadway infrastructure systems throughout campus, and general infrastructure improvements; the Physical Plant has also recently begun its Phase II Performance Contract. To date, an estimated $12,500,000 has been expended via this Phase II contract which is funding energy efficiency projects such as steam decentralization system upgrades and controls upgrades. This project is currently ongoing.

Current projects which are either in design and negotiations or on the University's latest PECO-Eligible Project Requests (2015-2016 Capital Improvement Program) submitted to the Florida Legislature via the Florida Board of Governors include Phase II of the College of Pharmacy and Pharmaceutical Sciences; the construction of a Student Affairs Building; a FAMU-FSU College of Engineering; Dyson Building Remodeling; and an Engineering Technology Building.

Carrie Meek-James N. Eaton, Sr. Southeastern Regional Black Archives Research Center and Museum

Founding
In 1971, the Florida Legislature passed a law, Florida Statute 241.477 that established this research center and museum. The center officially opened in FAMU's historic Carnegie Library, the first Carnegie Library constructed on a Black land-grant college campus. Presently, the entire two-story facility is utilized for museum exhibitions featuring memorabilia on FAMU history and African Americans in the South, especially their institutions and organizations. In keeping with its original mission of historical preservation, efforts supported by the Black Archives resulted in the entire FAMU campus being designated as a National Historic District by the U.S. Department of the Interior in 1996.

Union Bank of Florida Partnership
In 1996, FAMU and the Black Archives embarked upon a collaborative public service endeavor with the Florida Department of State. This led to the opening of the Black Archives' satellite

museum at the historic Union Bank of Florida. The Union Bank, located one block south of the Old Capitol in Tallahassee's downtown tourist district, is Florida's oldest surviving banking structure. It was built in 1841, primarily by slave labor, and served as a Freedmen's Bureau Bank in the years following the Civil War. The Union Bank was listed on the National Register of Historic Places in the early 1970s. As a specialty museum, the Union Bank accentuates the State and FAMU's multi-cultural heritage by helping to welcome visitors of all ages, ethnicities and interests to Florida's Capital City.

Meek-Eaton Expansion Facility

In the late 1980s, due to its impressive collections, and aggressive recovery and rescue campaign, the center began experiencing serious space constraints. As a response, in 1998, Florida Congressional members, Senators Bob Graham and Connie Mack, and Representatives Carrie Meek and Allen Boyd, sponsored a bill that resulted in the center receiving nearly $4 million in federal funds to help expand the Black Archives into a regional research facility. In 2006, the Florida Legislature named the new expansion facility, which adjoins Carnegie Library, the Carrie Meek - James N. Eaton, Sr. Southeastern Regional Black Archives Research Center and Museum.

Archival and Museum Holdings

The center houses an impressive collection of rare historical memorabilia and unique primary materials relating to the African-American experience. Presently, the center maintains more than 500,000 individual archival records and more than 5,000 individual artifacts. Archival materials include: films, journals, manuscripts, newspapers, photographs, sound records, and yearbooks belonging to local and national organizations and individuals.

Faculty and Student Support

The Black Archives is a training facility for undergraduate and graduate students who serve as interns, graduate assistants, student employees and volunteers. Students use this training to pursue careers in the fields of archives, art, museums, public history, business and other areas, especially those related to the cultural heritage industry

Organization of Instruction

Residence Instruction-In response to changing occupational needs and interests of its students and in an effort to attract a more diversified student population to the University, Florida A&M University has undergone reorganization. The University now has seven colleges and seven schools.

COLLEGE OF AGRICULTURE AND FOOD SCIENCES
Division of Agricultural Sciences
Division of Naval Sciences

COLLEGE OF SOCIAL SCIENCES, ARTS AND HUMANITIES

Department of English and Modern Languages
Department of History, Political Science, Geography and African American Studies
Department of Music
Department of Psychology
Department of Social Work
Department of Sociology and Criminal Justice
Department of Visual Art, Humanities and Theatre
Department of Military Science and Leadership

COLLEGE OF SCIENCE AND TECHNOLOGY
Department of Biology
Department of Chemistry
Department of Computer Information Sciences
Department of Mathematics
Department of Physics

COLLEGE OF EDUCATION
Department of Educational Leadership and Counseling
Department of Elementary Education
Department of Health, Physical Education, and Recreation
Department of Industrial Arts and Vocational Education
Department of Secondary Education,Technology Education, and Foundations
Florida A&M University Developmental Research School

FAMU-FSU COLLEGE OF ENGINEERING
Department of Chemical and Biomedical Engineering
Department of Civil and Environmental Engineering
Department of Electrical and Computer Engineering
Department of Industrial Engineering
Department of Mechanical Engineering

COLLEGE OF LAW

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES
Division of Basic Pharmaceutical Sciences
Division of Pharmacy Practice
Division of Economic, Social and Administrative Pharmacy
Institute of Public Health

SCHOOL OF ALLIED HEALTH SCIENCES
Division of Health Care Management
Division of Health Informatics and Information Management
Division of Occupational Therapy
Division of Physical Therapy
Division of Cardiopulmonary Science

SCHOOL OF ARCHITECTURE AND ENGINEERING TECHNOLOGY
Division of Architecture
Division of Engineering Technology

SCHOOL OF THE ENVIRONMENT
Environmental Sciences
Environmental Studies
Center for Environmental Equity and Justice
FAMU Center for Environmental Technology Transfer

SCHOOL OF GRADUATE STUDIES AND RESEARCH

SCHOOL OF BUSINESS AND INDUSTRY
Department of Accounting & Finance
Department of Economics & Professional Leadership Development
Department of Information Systems & Operations Management
Department of Management & Marketing

SCHOOL OF JOURNALISM AND GRAPHIC COMMUNICATION
Division of Graphic Communication
Division of Journalism

SCHOOL OF NURSING

COLEMAN MEMORIAL LIBRARY
University and Developmental Research School Libraries

ACADEMIC AND RELATED SERVICE FUNCTIONS
Academic Computer Service
Honors Program
Instructional Media Center
Sponsored Research
Test Service Bureau
Title III Programs
Undergraduate Student Success Center

Academic Learning Compacts
FAMU will provide students access to information on Academic Learning Compacts for each baccalaureate degree program. The Academic Learning Compact for each program identifies 1) content knowledge and skills in the discipline, 2) communication skills and 3) critical thinking skills as well as the methods for monitoring the achievement of those skills. Students are expected to demonstrate mastery of these skills prior to graduation. Students may obtain copies of Academic Learning Compacts for each baccalaureate degree program from that program's departmental office or online at
http://www.famu.edu/index.cfm?Assessment&CurrentALCs

Degree Offerings
The following degrees can be earned through appropriate courses of study at Florida A&M University (symbols following each degree listed: B-bachelor's degree, DPH- doctor of physical therapy, DrPH-doctor of public health; M-master's degree, P-professional degree, Ph.D-doctor of philosophy), and J.D. (juris doctorate). Consult the department for information regarding additional tracks available through these degree programs.

Accounting, B
African-American Studies, B
Agricultural Business, B
Agricultural Sciences, B, M
Applied Social Sciences, M
Architecture, B, M
Architectural Studies, B
Biological and Agricultural Systems Engineering, B
Biology, B, M
Biomedical Engineering, M, Ph.D.
Business Administration, B, M
Cardiopulmonary Science, B
Chemical Engineering, B, M, Ph.D.
Chemistry, B, M
Civil Engineering, B, M, Ph.D.
Community Psychology, M
Computer Engineering, B
Computer Information Systems, B
Computer (Information) Science B, M
Construction Engineering Technology, B
Counselor Education, M
Curriculum and Instruction, M
Criminal Justice, B
Dramatic Arts/Theater, B
Economics, B
Pre-Kindergarten, Primary Education, B
Educational Leadership, M, Ph.D.
Electrical Engineering, B, M, Ph.D.
Electronic Engineering Technology, B
Elementary Education, B, M
English, B
English Education, B
Electrical Engineering, B, M, Ph.D.
Electrical Engineering Technology, B
Entomology, Co-op, Ph.D. w/UF
Environmental Sciences, B, M, Ph.D.
Environmental Studies, B
Graphic Design, B
Health Administration, M
Health Care Management, B
Health Informatics and Information Management, B
Health, Physical Education/Fitness, B
Health Science, B
History, B
Industrial Engineering B, M, Ph. D
Information Technology, B
Interdisciplinary Studies, B
Journalism, B
Law, J.D.
Mathematics, B
Mathematics Education, B
Mechanical Engineering, B, M, Ph.D.
Music, B
Music Education, B
Nursing, B, M
Occupational Therapy, M
Pharmacy, P
Pharmaceutical Sciences B*, M, Ph.D.
Philosophy and Religion, B
Physical Education, B
Physical Therapy, DPT
Physics, B, M, Ph.D.
Political Science, B
Psychology, B
Public Health, M, DrPH
Public Relations, B
Science Education, B
Social Science Education, B
Social Work, B, M

Sociology, B
Sport Management, M
Studio/Fine Art, B
Technology Education, B, M

*Approved, but not implemented

Admissions and Related Matters General Policies

Florida A&M University utilizes the FAMU undergraduate application for admission. Applicants can apply on-line or download FAMU's application from our website at www.famu.edu. You may also check the status of your application on-line at our website. Admissions contact information is (850) 599-3796 or by e-mail at ugrdadmissions@famu.edu.

Each applicant must submit a $35 non-refundable fee with the admission application. Payments may be made by credit, debit card, or wire transfer for on-line applications. Cashier's check, money order and fee waivers must be submitted with hard copy applications. Fee waivers are accepted from First-Time-in-College Florida residents who can document that they have received a fee waiver based on economic need as determined by the College Board or the American College Testing Program. Submission of applications may be as early as 12 months prior to the anticipated enrollment date and by the deadline stated in the University calendar.

The selection of students for admission is within the jurisdiction of the University but subject to minimum State or Board standards. In all admission actions, the University will give attention to the need to satisfy equal opportunity/affirmative action goals.

Each person admitted and enrolled must have a high school diploma or General Equivalency Diploma (GED). Admission requires high school graduation from a regionally accrediting agency recognized by the U.S. Secretary of Education or the Council for Higher Education. Earning a Certificate of Completion does not qualify applicants for admission.
Florida Statute 1006.53, Rule 6C-6.001 FAC, and Rule 6C-6.007 FAC establish immunization requirements for students attending state colleges and universities. Students are required to complete and submit information on the FAMU Health History and Immunization form along with any required documentation. Each student accepted for admission shall, prior to enrollment, submit proof of immunizations. All entering students born in or after 1957 must provide proof of immunizations which is mandatory. Additional information can be obtained from Student Health Services.

An application or residency affidavit submitted by or on behalf of a student that contains false, fraudulent, or incomplete statements may result in denial of admission or denial of further registration and/or invalidation of FAMU credits. A dependent claiming Florida residency affidavit, which is part of the application for admission, must be completed by the parent or legal guardian. Failure to complete the affidavit will result in the student being assessed out-of-state fees for tuition purposes. Florida Statute 1009.21 requires that proof of Florida residency must be supported by submitting copies of documentation indicated on the residency affidavit.

Admission to FAMU shall be on a selective basis based upon curricula, space, and fiscal limitations. The selection process includes, but may not be limited to, grades; test scores; educational objectives; pattern of courses completed; past conduct; recommendations; and personal records. Admission is contingent upon the subsequent receipt of official high school and college or University transcripts and verification of high school diplomas, associate of arts, baccalaureate and master's degrees. If these documents are not received, it will result in cancellation of admission or registration.

Applicants who are denied admission will be notified in writing via email and postal mail within a reasonable time period of the admission decision.

Confirmation of financial aid, a scholarship, fellowship, or grant-in-aid does not guarantee admission to the University.

When a former student attends another post-secondary institution since last attending FAMU, the admission status requires evaluation.

A limited number of students not meeting the high school foreign language requirement may be admitted; however, these students must fulfill the foreign language requirement prior to completion of the baccalaureate degree. Any undergraduate student admitted without two years of one foreign language or American Sign Language or the equivalent of such instruction at the post-secondary level (except those exempted in BOG Regulation 6.002 (1) h) and 6.004 (2) e) must complete eight semester hours in one foreign language prior to graduation.

Application Deadlines

Spring Term	November 15th
Summer Sessions	March 15th
Fall Term	May 15th
Transfer Applicants	
Pharmacy	February 1st

Freshman Applicants (First-Time-in-College)
A first-time-in-college (FTIC) applicant is required to possess a diploma from a Florida public or regionally accredited high school, an accredited out-of-state high school or, if foreign, its equivalent.

Students applying for admission will submit test scores from the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board or from the American College Testing (ACT) program. ACT and SAT scores must include the combined English/Writing component. International applicants must present scores of at least 500 (Paper-based test), 173 -- (Computer-based test) and 61 (Internet-based test) on the Test of English as a Foreign Language (TOEFL) if the native language is not English.

An applicant who has at least a 3.0 (recalculated) grade point average on a 4.0 scale in core academic units completed in grades 9 through 12 and who submits other appropriate evidence that indicates successful academic progress is academically eligible for admission. When calculating grade point averages, additional

weight is assigned for International Baccalaureate - 1 (IB) courses, Honors - .5 courses, Advanced Placement - 1 (AP), courses and AICE - 1 courses, and Dual Enrollment – 1 courses. Specific high school course units are required for admission as a first year student (an academic unit is a year-long course which is not remedial in nature).

1. FTIC students applying to Florida A&M University for summer 2011 or later may be considered for admission based on the following criteria:

a. An FTIC student may be admitted if he/she has an unweighted high school grade point average (GPA) of 3.00 or higher on a 4.00 scale as calculated by the University, OR

b. An FTIC student may be admitted if he/she has an unweighted high school GPA of 2.5 - 2.99 on a 4.00 scale as calculated by the University. Course work from which a student has withdrawn with passing grades will not be included in the calculation.

- Repeated courses are calculated with the highest grade.

In addition to achieving the minimum GPA, a student must achieve the minimum scores for each SAT Reasoning Test or ACT section as outlined below:

SAT – Critical Reading >= 460 or ACT – Reading >= 19,
SAT – Mathematics >= 460 or ACT – Mathematics >= 19, and
SAT – Writing >= 440 or ACT – Combined English/Writing >=18

2. An FTIC applicant must have completed the secondary academic unit requirements:

Academic Subject	Units Required
English	4
Math	4
Natural Science	3
Social Science	3
Foreign Language	2

Additional academic electives from the above five subject areas and courses to be recommended by the Florida Association of School Administrators, or other groups, and approved by the Articulation Committee of the Department of Education

1. Three of which must have included substantial writing requirements.
2. Algebra 1 and above.
3. Two of which must have included substantial laboratory requirements.
4. Includes: anthropology, history, civics, political science, economics, sociology, psychology and/or geography.
5. Both credits must be in the same language. American Sign Language will be accepted in place of a foreign language.

Total **18**

A student applying for admission who has - a 3.0 average (as calculated by the Admissions Office) in the required academic units described above is eligible for admission regardless of the ACT or SAT test including the combined English/writing component with the exception of programs with specific departmental requirements.

Applicants who are dually enrolled in any course work at a college or University or as a special student must submit an official transcript from that institution.

The Admissions Committee may consider any applicant who does not meet requirements but has other important attributes or special talents. The committee may recommend admission.

In determining eligibility for admission, reasonable substitution for any course or night school unit may be accepted for applicants who are hearing impaired, visually impaired, or dyslexic. Applicants must provide documentation indicating failure to meet the admission requirement related to the disability or must have a specific learning disability. Documents required include, but are not limited to, a physician's statement, vocational rehabilitation records, optometrist, audiologist, psychologist, or other health care professional, and school records maintained as a result of the exceptional child provisions. We encourage you to contact the Center for Disability Access and Resources at (850) 599-3180 if you are seeking admission based on a specific learning disability.

Applicants denied admission to the University may appeal the admissions decision to the Admissions Committee if it is felt that there are extenuating circumstances or information not revealed. Appeals for exception should be in writing and directed to the Office of Admissions. In addition, a minimum of two letters of recommendation from teachers, counselors, or principal are required. Petitioning for admission to the University is no guarantee of approval. The decision of the Admissions Committee is final.

Home Schooled Students

Home Education or Other Non-Traditional High School Program participants: A student applying for admission who has participated in a non-traditional high school program must present credentials determined to be equivalent to those described in this regulation. A student whose high school educational program is not measured in Carnegie Units must present a test score of at least 1450 on the SAT (reading, writing, math), a minimum composite score of 21 on the ACT. The University reserves the right to require a student to take an updated version of a test. A 3.0 average, 18 academic-college preparatory units and essay are required for home schooled students. Official transcripts must be certified through the school district.

Undergraduate Transfer Applicants

A transfer is any student who has attended a regionally accredited college or University and has earned 12 or more semester hours (except as high school dual enrolled students).

An international transfer applicant whose native language is not English must present a minimum score of 500 (Paper-based test) or -173 (Computer-based test) or 61 (Internet-based test) on the Test of English as a Foreign Language (TOEFL) or a certificate from an English Language Institute.

To meet graduation requirements for the baccalaureate degree, FAMU requires a student to earn at least 30 semester hours in residency.

Transfer students entering FAMU must have completed two

(2) years of foreign language in high school or eight semester hours (or the equivalent) of a foreign language at an accredited undergraduate institution prior to enrollment.

Some academic programs have limited enrollment and student demands exceed available resources. Due to instructional facilities, laboratory space, equipment, faculty, etc., these programs have selective admissions criteria to limit enrollment. Architecture, Journalism, Public Relations and Nursing are approved limited access programs. Pharmacy and Social Work require applicants to complete departmental applications.

The University subscribes to the Articulation Agreement between the State University System and the Florida State College System. Under this agreement, graduates of Florida public state/community colleges are eligible for admission to non-limited access programs at a state University if they have completed the University parallel program and have received the associate of arts degree and will receive priority admission over out-of-state students. In accordance with the Articulation Agreement, the AA degree must be awarded on the basis of the following:

- At least 60 semester hours of academic work exclusive of occupational courses;
- An approved general education program of at least 36 semester hours; and
- Overall grade point average of at least 2.0 on a 4.0 system. Undergraduate transfer applicants who receive the AA degree from a state University in Florida must meet the same minimum requirements as undergraduate transfers who receive the AA degree from a college in the Florida State College System.

Undergraduate transfer applicants who have not earned the AA degree from a Florida state/community college or from a state University in Florida must meet the following requirements:

1. Must be in good standing and eligible to return to the last institution attended;

2. Must have completed two years of one foreign language in high school or eight semester hours of post-secondary level instruction in one foreign language or American sign language;

3. Must have earned at least 60 semester hours and at least a 2.0 average on a 4.0 scale in all college work attempted from an accredited institution;

4. If an applicant has attended more than one institution, the cumulative grade point average from each institution must be at least 2.0 for the acceptance of transfer credit unless the student has not earned the Associate of Arts degree or higher; and

5. Transfer applicants with less than 60 semester hours must meet first-time-in-college admission requirements in accordance with Admission Regulations.

FAMU requires provisionally admitted transfer students to provide proof of 60 semester hours and at least a 2.0 average on a 4.0 scale in all college work attempted from previous institution(s) prior to registration.

FAMU will consider transfer applicants with at least 24-59 semester hours with a 2.50 (on a 4.0 scale) overall college grade point average; a 2.50 re-calculated high school grade point average in college preparatory courses, and have taken the ACT to include the combined English/Writing or the SAT with the writing component.

Transfer applicants with at least 12-23 semester hours are required to have 2.50 (on a 4.0 scale) overall college grade point average; a 2.50 re-calculated high school grade point average in college preparatory courses, 18 academic units, and SAT - Math - 460, Critical Reading - 460, Writing - 440 or ACT Reading - 19, Math - 19, Combined English/Writing 18

Awarding of credit for military service academic courses is based on recommendations of the American Council of Education (ACE Manuals) when official credentials have been properly presented. However, recommendations by ACE are not binding upon the University. Military service academic course credits are requested at the time of admission.

The associate of science (AS) degree is a two-year terminal degree and does not assure admission or certify the applicant as having completed the general education requirements, or qualify the applicant for upper division status, except under provisions of statewide AS to BS articulation agreements. In case of other AS programs, final determination of AS degree credits rests with the dean of the college or school as applicable. The awarding of any upper division credit for lower division AS degree courses will be at the discretion of the respective FAMU College or School unless explicitly provided for under statewide AS to baccalaureate agreements.

Early Admission

Early admission is a form of dual enrollment through which eligible secondary students are admitted on a full-time basis in courses that are creditable toward both the high school diploma and the students' University degree program.
Early admission is granted to students with outstanding credentials who demonstrate potential to do college-level work. Applications for early admission should be submitted during the junior year along with high school transcripts and SAT or ACT scores. If accepted for Early Admission, the student would enter FAMU as a freshman instead of attending high school for the senior year. A copy of the final high school transcript is required when the diploma is received.

Qualifications for consideration for Early Admission are: 3.0 GPA (as calculated by FAMU) after six semesters of high school.

a) High school grade point average of 3.0 or higher (calculated by FAMU) in academic subjects after six semesters of high school.

b) 18 academic units required
c) SAT - Math - 460, Critical Reading - 460, Writing - 440 or
d) ACT Reading - 19, Math - 19, Combined English/Writing 18
e) A recommendation from the principal (or designated representative) is required.

Transient Students

A Transient student is a currently enrolled student who registers for course(s) at another institution temporarily. There are two types of transient students – outgoing and incoming.

Outgoing: An Outgoing Transient student is a currently enrolled FAMU student who registers for course(s) at another institution for one term with the intention of applying the credit toward his/her degree program. Transient students must receive approval from their academic advisors before taking a course at any other institution.

Incoming: An Incoming Transient student is a student currently enrolled at another institution who wishes to register for course(s) at Florida A&M University for one term. Incoming Transient students should receive approval from their home institution before registering for a course at Florida A&M University.

Enrollment as a transient student in no way implies future admission as a regular student at Florida A&M University. Contact the Registrar's Office for detailed information on enrolling as a transient student.

International Applicants

International students must submit the following for admission to Florida A&M University:

1. Application for admission with a non-refundable application fee of $30;
2. A certified bank statement of finances;
3. Academic credentials (credentials must be certified true copies from high school; college or University). Original transcripts from all institutions must be submitted from the foreign institutions directly to the Office of Admissions. To determine academic eligibility for admissions, academic credentials must be: (a) translated into English and (b) evaluated course by course by an evaluation service. It is the responsibility of the applicant to contact the evaluation agency directly and provide FAMU with an original evaluation of all academic credentials. Acceptable evaluators can be found at the web pages of the National Association of Credential Evaluation Services (NACES) www.naces.org/members.htm.
4. Scores resulting from the SAT or ACT (College Entrance Examination – no exceptions or waivers); and
5. Scores resulting from the TOEFL, (TOEFL score requirements are: (Paper-based 500; computer-based 173-; Internet-based 61).

An applicant transferring from another college or University in the United States must submit an official transcript(s) of final grades reflecting at least 60 semester or 90 quarter hours and at least a 2.0 grade point average. In addition, the applicant must have been interviewed and filed Form I-538 (application for school transfer).

Each international student accepted for admission shall, prior to registration, submit proof of compliance with the mandatory health and accident insurance requirement. Written proof of insurance must be provided and valid for one year from the date of first enrollment and each year thereafter. Coverage must be valid in the United States and meet benefit requirements established by the Florida Board of Governors Regulation 6.009.

The Office of International Education is responsible for administering special programs for all sponsored international students. There is an administrative cost of $200 per student per semester to the sponsoring agency for these required programs.

Readmission of Former Students
Students not in attendance during two consecutive terms (exclusive of the summer), must apply for readmission to the University. An application fee is not required for returning students. Applications of students with permanent University holds or those students not in good standing with the University will not be processed.

Former students who attended another college or University since last attending FAMU are required to submit official transcripts for re-evaluation.

Applications for Admissions

The following applications for admission to Florida A&M University are available through the Office of Admissions, Florida A&M University, Tallahassee, FL 32307-3200 and through that office's website.

a) Florida A&M University Undergraduate Admission Application,
b) Florida A&M University, Application for Readmission

Special Admissions

College of Education

The College of Education regulates and monitors the admissions policies for all teacher education programs. Admission to teacher education is a formal process in which certain criteria must be met and the Application for Admission to Teacher Education must be completed and filed. This process must not be confused with admission to the University or acceptance into certain academic units to take courses, since students may take up to five courses in teacher education prior to being officially admitted to a specific teacher education program.

Students seeking admission to any teacher education program must meet all of the following criteria:

- Have a grade point average (GPA) of 2.50 or higher for the general education component of undergraduate studies; **or**
- Have completed the requirements for a baccalaureate degree with a minimum grade point average of 2.50 or higher;

- Have met all "Gordon Rule" requirements;
- Have a "C" or better in the required courses in their curriculum;
- Have successfully passed a criminal background investigation;
- Have successfully passed all parts of the FTCE - General Knowledge Exam;
- Have successfully completed a pre-admission interview by the College of Education Admission Committee;

Students are admitted to designated teacher education programs and/or classified as Professional Teacher Education Majors in their respective degree program when these criteria are met.

Since it is possible for students to apply for admission to teacher education at several points in their academic career, the following policies have been adopted for these variations:

- Pre-education majors at Florida A&M University are encouraged to complete the Application for Admission to the Professional Teacher Education Program and file the same with the Center for Academic Success as soon as they meet the requirements for admission. They should meet all criteria by the time they have earned 60 credit hours. If they have not met the criteria by the time they have earned 75 credit hours, they will be advised to change to a non-teaching major. .
- Students transferring from a community or junior college or another four-year institution with an AA degree or 60 or more hours should apply by the end of the first semester they are enrolled at Florida A&M University. If they have not met the criteria by the time they have earned 75 credit hours, they will be advised to change to a non-teaching major.

Students who seek to change their majors to pre-teacher education after enrolling in other programs at Florida A&M University must have a 2.5 or higher grade point average. If they have earned fewer than 60 credit hours, they should apply as soon as they meet the requirements for admission, but by the time they have earned 75 credit hours. If they have already earned more than 60 credit hours, they should apply within one semester of changing their majors. Students will be informed each semester as to their status towards admission into professional teacher education through their advisors in Center for Academic Success.
NOTICE: Students must be fully admitted to a professional teacher education program prior to internship and graduation.

Florida Statutes require individuals applying for a Florida teaching certificate to be finger printed and to reveal all criminal history record(s) including sealed or expunged record(s). Section 943.0585, F.S.

Students applying for admission to a teacher education program should reveal all criminal history record(s) including sealed or expunged record(s). Students interning in certain school districts will be required to clear a criminal background check prior to interning.

Student Teaching

Student teaching is a supervised classroom teaching experience in an accredited elementary or secondary school for a minimum of fourteen weeks. Prerequisites for participating in this culminating experience are as follows:

Preparation

To comply with the Jessica Lunsford Act and ensure the security and safety of students, faculty and staff, all student teachers must complete the following:

1. Complete a Level II background screening (fingerprinting). Application forms are available in 301-B Gore Education Complex. Cost of this screening is $95.00.
2. Secure your own medical insurance (Leon County School District only)
3. Purchase professional liability insurance
4. Purchase FAMU ID badge

Requirements of Student Teaching

Students desiring to participate in the student teaching program must meet the following criteria:

- Have been admitted to a teacher education program
- Have satisfactorily completed all program requirements;
- Have a cumulative and field of study G.P.A. of 2.50 or better prior to the deadline for submission of the pre-student application.
- Have passed a Level II security background check.
- Have passed all portions of the Florida Teacher Certification Examination

Application Procedures for Student Teaching

The procedures for making application to participate in the student teaching program are as follows:

- Student should complete a Pre-Student Teaching Student Teaching Application at least one semester prior to the semester in which he/she plans to participate in the student teaching program, to the Office of Student Teaching for initial screening to determine his/her status.

- The application will be evaluated by the Office of Student Teaching staff to determine if the applicant meets the unit's requirements to participate in the student teaching program.

- It is the responsibility of the student to pick up the Approved Pre-Student Teaching Application from the Office of Student Teaching to receive their Student Teaching Application.

- Students receiving Student Teaching Instruction Sheet are expected to complete and submit the application at predetermined deadlines. These deadlines are posted on appropriately situated bulletin boards and online.

- Completed Student Teaching Applications are returned to the Office of Student Teaching who then forwards them to the appropriate departments for review and approval or

disapproval.

- All applications are returned to the Office of Student Teaching by the departments for appropriate action.

- Students who do not qualify to participate in the student teaching program are notified of the deficiencies and are advised of how they can overcome the deficiencies.

Application Deadline

Semester Desired for Student Teaching	**Deadline**
SPRING SEMESTER	**October 22**
FALL SEMESTER	**April 15**

College of Pharmacy and Pharmaceutical Sciences

Doctor of Pharmacy

Pre-Pharmacy Program Admissions Criteria- Admission to the Pre-Professional program is administered by the Florida A&M University Office of Admissions in conjunction with the College of Pharmacy and Pharmaceutical Sciences Office of Student Services. Acceptance into the pre-professional program does not guarantee acceptance into the upper division of the Pharm.D. Program.

A high school graduate interested in pharmacy programs should apply for admission through the Office of Admissions for the University. A copy of the student's application materials, including high school and/or college transcripts, is sent to the College of Pharmacy and Pharmaceutical Sciences Office of Student Services to determine admission eligibility.

Admissions Eligibility-Applications are reviewed on an individual and holistic basis. First and foremost, applicants must be prepared academically for the rigors of college and the academic demands of a pre-professional core curriculum.

All students entering the pre-professional program must meet or exceed the same entrance requirements as the First-Time-In-College applicant, even when transferring from another major institution.

All applicants must meet upper-half quality requirements for admission. This is based on grades, test scores and courses taken in excess of the minimum.

Students planning to enter the pre-professional program should have the following recommended minimum credentials:

- A minimum academic grade point average (GPA) of 2.75 (on a 4.0 Scale) in the core academic subjects at the secondary school level, including:

1. Four (4) units of high school level math with a 2.75 or better GPA in the following course equivalents:
- Algebra
- Calculus
- Geometry
- Trigonometry

2. Three (3) units of high school level science with a 2.75 or better GPA in the following course equivalents:
- Biological Sciences
- Physical Sciences
- Chemistry
- Physics
- Anatomy and Physiology

3. Additional advanced level math and science classes are strongly recommended.
- At least a 1010 on the SAT or 21 on the ACT.

Transfer Admissions Information-Students should inquire no later than October of the year prior to the expected date of admission in order to receive an application packet that contains specific information concerning the application period and deadline dates. Official transcripts are needed from all schools attended.

It is impossible to accommodate all of the qualified transfer applicants. Therefore, it is strongly suggested that alternate plans be made in order to facilitate career objectives if admission is not granted for this academic period. The College of Pharmacy's Admissions and Academic Standards Committee review all completed applicant folders. In recognizing its responsibility to impact upon the shortage of health professions, the committee considers the applicant's academic background, character, motivation, commitment, extracurricular activities, and other important factors. Admission is in the Fall Semester only.

Requirements:

1. An applicant must have a minimum cumulative GPA of 2.75 (4.0 scale), based on all college work completed in order to be considered.
2. An applicant must submit transcripts from all colleges/ universities attended. Transcripts must be official and mailed directly from the registrar of the college/ University attended. (Hand-carried transcripts are not acceptable.) If a pharmacy school/college has been attended, a letter of recommendation from the dean of the school/college of pharmacy is also required, indicating eligibility to return to its pharmacy program in good standing.
3. A student must spend a minimum of eight (8) semesters as a full-time pharmacy student at Florida A&M. A minimum twelve (12) semester hour course load, including required pharmacy courses as outlined in our curriculum, must be taken each semester.

*False or Fraudulent Statements-In addition to any other penalties which may be imposed, an individual may be denied admission or further registration, and the University may invalidate transferred college credit work done by a student at an SUS institution and invalidate the degree based upon such credit, if it finds that the applicant has made false or fraudulent or incomplete statements (omissions) in his or her application, residence affidavit, or accompanying documents or statements in connection with, or supplemental to, his or her application for admission to or graduation from one of the SUS institutions.

Specific inquiries concerning admission to the Doctor of Pharmacy Program should be sent to Florida A&M University, College of Pharmacy and Pharmaceutical Sciences, New Pharmacy Building

- Room 354 Tallahassee, Florida 32307, Attention: Admissions Information Request.

NOTE: It must be understood that admission to the College of Pharmacy is not determined solely on the basis of a superior academic record or a cumulative G.P.A. in previously completed college work. While academic achievements are of utmost importance, the Admissions Committee will also consider the career objectives of the applicant.

Failure to accurately, completely, and truthfully execute the application for admission to the College of Pharmacy at Florida A&M University, or the omission of any information, will result in the cancellation of admission and/or expulsion from the College of Pharmacy.

Crestview Instructional Center

Students admitted to the professional program may be assigned to matriculate through the College of Pharmacy instructional center located in Crestview, Florida. A limited number of students are assigned and will receive instruction synchronously with students in Tallahassee using videoconferencing technology. Instructions relative to rules related to matriculation in this site is available in the Pharmacy Student Handbook.

College of Pharmacy and Pharmaceutical Sciences /School of Business and Industry Dual Pharm.D./M.B.A. Program
Admission into the dual degree program is contingent upon an acceptance to both programs formally and independently. For admission, an applicant must meet the requirements of FAMU COPPS, the School of Graduate Studies, and SBI. In order to gain admission to the School of Graduate Studies, those without a bachelor's degree must garner a total of 90 credit hours. Further, admission to the School of Graduate Studies must be attained prior to commencing with requisite core courses in SBI.

MBA
Students must apply and be admitted to SBI. All students must meet the minimum grade point average required by the School of Graduate Studies and SBI. Admission to the MBA program requires the following: students must pass (1) the Gordon Rule requirements for University graduates; (2) the prerequisite courses at FAMU or comparable courses at another institution; (3) and the college-level examination program (CLEP). Prior to admission, all applicants must successfully complete the GMAT exam; a minimum of 1100 points is required using the following formula: GPA over the last 60 hours X 200 + GMAT score. SBI's admissions committee will consider an applicant's grade point average and GMAT score prior to admission. Applicants will also be required to participate in a formal interview process.

PharmD
Students must apply and be admitted to the FAMU COPPS. All students applying for the dual degree program must attain the minimum grade point average of 3.25/4.0 and complete the prerequisite courses prior to admission; the College currently requires that applicants complete 36 credit hours of prerequisites. Prerequisites for the College of Pharmacy may be found within the FAMU PharmD curriculum. Applicants will be required to participate in a formal interview process.

Dual Degree Program
Foundational courses for both the PharmD and MBA have been integrated within the first two years of undergraduate study and must be completed prior to admission. For admission, a minimum score of 1100 points is required using the following formula: GPA over the last 60 hours X 200 + GMAT score. Students are required to take the GMAT during the summer after the second pre-professional year. Additionally, to avoid academic sanctions while matriculating through the program, students must maintain a 3.0 gpa.

College of Pharmacy Institute of Public Health Doctor of Public Health (DrPH) Program
The Doctor of Public Health (DrPH) program in the Institute of Public Health is designed primarily for those individuals planning careers involving public health professional practice, teaching, or research. This degree program provides training for the effective conduction or supervision of research and integration of new knowledge and techniques into community and/or public health practice. Thus, the primary emphasis of the DrPH program is to prepare practicing professionals in the application of research methods and provide a foundation for solving public health issues. Currently, the DrPH program is a MINIMUM 60-credit or a MINIMUM 78-credit hour program offered in two areas: (1) Behavioral Science and Health Education and (2) Epidemiology and Biostatistics. All doctoral students MUST complete the coursework that covers the MPH core. If the student has an MPH from an accredited college or university, the student should complete a MINIMUM 60-credit hours required for the DrPH program. However, if the student does not have an MPH degree or has not completed the MPH core requirements, the student will be required to enroll in the MINIMUM 78-credit hours for completing the DrPH program.

School of Allied Health Sciences

Admission to the School of Allied Health Sciences is a two-step process. An applicant must first be accepted by the University and then must apply for admission to the degree program of his/her choice. Admission to the University does not guarantee acceptance into any of the degree programs. The requirements and procedures for admissions to the University are outlined under the heading "Special Admissions, Requirements of the Colleges and Schools."

UNDERGRADUATE ADMISSIONS
A student seeking admission to an undergraduate degree program in the School of Allied Health Sciences must:
1. Have completed and maintained a grade point average of at least a 2.0 or higher in all pre-professional course work. Consult each program for specific grade point average requirements.

2. Secure and complete an application for admission to the degree program of his or her choice within deadline as prescribed by each program.
3. Where applicable, submit an autobiographical essay of at least 300 words to the program director, along with the completed application.

Admission to a professional undergraduate degree program in the School of Allied Health Sciences is based on an applicant's selection by the applicable admissions committee. Selection will be based on the evaluation of a number of factors, including the student's overall grade point average, grade point in all science courses (where applicable), work experiences, grade trends, a personal interview, leadership activities, and the mission of the University.

GRADUATE ADMISSIONS

A student seeking admission to a graduate program in the School of Allied Health Sciences must at a minimum:

1. Have successfully earned a baccalaureate degree from an accredited institution of higher learning.

2. For Health Care Administration, Occupational and Physical Therapy: Have a combined score of a 300 or higher on the Verbal and Quantitative sections of the Aptitude Test of the Graduate Record Examination (GRE), OR a cumulative grade point average of 3.0 or greater (on a 4.0 scale) in the last 60 semester hours (90 quarter hours) of undergraduate preparation, OR possession of a graduate degree from an accredited institution of higher learning.

3. Submit to program of interest a brief, typed, personal statement/autobiographical essay (300-500 words) describing self and indicating reasons for desiring admission to the profession, three letters of recommendation for Physical and Occupational Therapy and Health Care Administration, and official transcript(s) from all colleges and/or universities attended.

4. Provide evidence of a minimum of twenty (20) hours of volunteer/ observation/ inquiry into the profession or work experience in a health care setting for the Division of Physical Therapy and a minimum of thirty (30) hours of volunteer/ observation/ inquiry into the profession or work experience in a health care setting for the Division of Occupational Therapy.

5. Successful completion of the Bachelor of Science degree in Health Science does not guarantee admission into the Occupational Therapy and Physical Therapy programs.

6. Transfer students seeking admission to the Occupational Therapy program must complete the equivalent of FAMU's Bachelor of Science degree in Health Science with a concentration in Wellness and Occupation.

7. Transfer students seeking admission to the Physical Therapy program must complete the equivalent of FAMU's Health Science degree (concentration - Pre-Physical Therapy).

8. Students seeking admission to any graduate program within the School of Allied Health Sciences may be required to take additional courses to satisfy certain pre-requisites and competencies for entering these graduate programs. These additional courses will not count towards fulfilling any of the other requirements of the professional graduate programs.

Also see information pertaining to the School of Allied Health Sciences graduate programs under the School of Graduate Studies, and Research.

School of Architecture and Engineering Technology

The School of Architecture and Engineering Technology is a professional school committed to preparing its graduates for excellence in the practice of architecture and engineering technology. All students who wish to become creative and active leaders in either field are welcomed to the School's programs.

Admission to the School is by formal application. All applications are evaluated individually on the basis of the applicant's academic achievements. Additional consideration may be given for work experience in the fields of architecture or landscape architecture, design and graphic ability evidenced in a portfolio and written and oral communication skills. As a limited access program with a fixed facility, admission to the School is competitive.

Applications will be considered by the admissions committee according to the following calendar:

Summer semester admission
Applications received by February 1.

Fall semester admission
Applications received by May 1.

Spring semester admission
Applications received by November 1.

Please note that these deadlines are earlier than the general University's deadlines. All applications may be considered on a space-available basis.

I. Undergraduate Admissions

A. Freshman admissions- In addition to the University's requirements for admission, a freshman who wishes to be considered as an architecture major must have achieved a minimum GPA of 2.5 in academic course work and 1010 on the SAT I or 21 on the EACT. Applicants with lower scores may also be considered on a space available basis. The University admits qualified applicants to the Pre-Architecture program of the Bachelor of Science in Architectural Studies program.

B. Transfer applicants- All applicants who wish to transfer into the School of Architecture and Engineering Technology will be evaluated individually for admission. Transfer students must have an overall 2.50 GPA and a minimum 2.50 GPA in all architecture courses. Previously earned college credit will be transferred if it is equivalent to the architectural curricula and carries a grade of "C" or better.

No credit for architecture course work can be granted if it was completed at a vocational-technical school or institute. If appropriate, other course work may be used toward general education or elective credit. Applicants must send curricula and

course descriptions to the School of Architecture for evaluation. Only those transfer students who have received an associate of arts degree from a "pre-architecture" program with approved articulation will be considered for admission to the third-year level.

C. Admission to the Professional Bachelor of Architecture Program-Transfer students and FAMU students applying for admission to the Bachelor of Architecture program must have a minimum GPA of 2.75 in upper division courses. All students currently enrolled at the FAMU School of Architecture must complete all third-and fourth-year course work prior to entering the fifth year. Transfer students must have completed the equivalent of FAMU's Bachelor of Science in Architectural Studies degree.

II. Graduate Studies in Architecture

The School of Architecture has three graduate degree programs:

A. Master of Architecture (professionally accredited program)

B. Master of Science in Architecture

The admission requirements vary for these degree programs. Applicants should write or call the School of Architecture for details about the curricula, areas of graduate emphasis, and admission requirements.

Also see the School of Architecture and Engineering Technology section in this catalog.

School of Journalism & Graphic Communication

The school comprises two divisions - journalism and graphic communications. Admission requirements for the Division of Graphic Communication are the same as general University admission requirements. However, requirements for admission to the Division of Journalism are somewhat more restrictive, as described below.

A high school graduate interested in programs in journalism should apply for admission indicating that interest through the Office of Admissions for the University. A copy of the student's application materials, including high school or latest college transcripts, is sent to the journalism division director to determine admission eligibility.

Students will be admitted to FAMU journalism studies if they have at least 2.5 high school grade averages, "2.5" averages or better in English composition courses, and at least 1010 on the SAT, or 21 on the EACT.

Florida community college transfer students with AA degrees likewise will be required to have 2.5 GPAs and "2.5" averages in English composition to become journalism majors.
Journalism at FAMU is officially designated a limited access program by the Florida Board of Governors.

Majors must also demonstrate typing proficiency, earn "2.5" averages in freshman English composition courses and maintain 2.4 overall GPAs, with at least 2.5 GPAs in professional course work.

The Division of Graphic Communication requires its majors to maintain 2.5 GPAs or higher in all graphic communication courses and have at least a 2.0 GPA overall to be graduated.

The Division of Journalism requires its majors to have minimum 2.5 grade averages in professional courses and at least 2.4 overall to be eligible to apply for graduation. No "D" grades in major courses are allowed.

School of Nursing

I. Pre-Professional Level Applicants

A. Unconditional Admission
1. Applicants who have met the University college entrance exam(s) and high school grade point average requirements are given preference for admission to the School of Nursing.
2. Applicants who have followed a college preparatory high school curriculum with supporting science courses and who have maintained an average of 2.7 or above are considered acceptable candidates for admission to the program.
3. A combination of exam scores and high school performance will be evaluated on an individual basis.

B. Community College and Transfer of Other College Level Credits
1. Applicants must have earned a 2.7 or above average (4.0 scale) in all college work attempted.
2. Deficits in the student's course of study must be corrected prior to admission to the professional level course of study in nursing.

II. Admission to the Professional Level of Nursing

A. Please note that admission to the pre-professional level in the School of Nursing does not guarantee admission to the professional level.

B. Review specific admission requirements in the catalog (School of Nursing link).
Reconsideration of Denial of Special Admission

Applicants who are denied special admission may request reconsideration, providing they meet the minimum admission criteria for the following schools and colleges at Florida A&M University: the College of Education, the College of Pharmacy and Pharmaceutical Sciences, the School of Allied Health Sciences, the School of Architecture and Engineering Technology, the School of Business and Industry, the School of Journalism and Graphic Communication, and the School of Nursing. Timely notice of denial of special admission shall be sent by letter to the applicant. Applicants who are denied admission and who meet minimum standards of admission for these schools and colleges may request reconsideration of the denial as follows:

1. Written requests for reconsideration must be received by the pertinent school or college within thirty (30) days of the date of the letter of denial. Specific reasons for the requested reconsideration must be submitted in writing and supporting evidence, if any, must be included with the request.

2. The pertinent school or college will forward the request for reconsideration to the chairperson of the Admissions Committee for that school or college.

3. Whenever possible, the request for reconsideration will be reviewed within thirty (30) days of receipt of the request and, if the request for reconsideration is denied, notification shall be sent to the applicant within seven (7) days of the decision.

4. A decision denying reconsideration is final.

General Regulations and Registration

Office of the University Registrar – 2013 - 2014

Location: 112 Foote-Hilyer Administration Center
Email: registrar@famu.edu
Web: www.famu.edu/registrar

The University Registrar is the official custodian of academic records and the keeper of the university seal at Florida A&M University. The general functions of the University Registrar are to assist in planning and executing academic policies and programs; provide for administration of policies and regulations pertaining to the academic status of students; provide for planning and executing orderly registration and graduation of students; develop the academic calendar, semester schedule of classes and final examination schedules; maintain and secure student records; and provide counseling and certification to students and dependents of veterans receiving veteran benefits.

The specific responsibilities of the office include to collect and maintain academic information; conduct registration for regular degree-seeking and non-degree seeking students and continuing education students; process requests for veteran benefits; process the graduation of degree-seeking students; process grading, change of grades, and acceptance of transfer credits; prepare and release transcripts; maintain accurate academic, historical, biographical, and directory information; provide information and data for use and review by college deans, planning directors, vice presidents, the President, the Board of Governors, U.S. Department of Education, and other authorized personnel and agencies.

Registration
FAMU registration policies and procedures, including final examination schedules are published on the University website.

Registration Dates
Are listed in the university calendar section on the Registrar website. Students are responsible for complying with all regulations governing registration, change-of-schedules (drop/add), tuition payment, and other requirements described either in this catalog or advised by the administration. Every registrant must arrange a class schedule with an academic advisor or a faculty advisor at the time and place designated.

Web Registration
Students are encouraged to take advantage of the university's web registration system iRattler via www.famu.edu. Students are able to register for classes from home or anywhere in the world. Students may consult the schedule of class section of the website at www.famu.edu for detailed instructions.

Failure to register for a course or courses by the close of the formal registration period (The registration period prior to the first day of classes) will result in the assessment of a late registration fee of $100.00. No student will be permitted to register after "the last day to register," as listed in the university calendar, unless appropriate approval is granted.

The payment of all expenses and fees is a part of registration. Students are not officially enrolled or registered until all necessary fees are paid and validated by the Office of Student Financial Services. **Students are fee liable if they fail to drop or withdraw from classes on or before the end of add/drop.** See the current university calendar at the Registrar's web page (www.famu.edu/registrar).

Registration Requirements and Procedures

Registration Holds
A student's registration is placed on hold based on a variety of financial and administrative reasons. Students are notified of registration holds on their student self-service center (iRattler) prior to each registration period and are required to clear all holds before being allowed to register. Please see the University website for a detailed description of all hold codes. Students can view the holds applied to their records in iRattler (www.famu.edu) by clicking on the 'Details' link on the Student Center to obtain additional information.

Auditing Course(s)
A student may register to audit a course(s) on a space available basis. Admission to Florida A&M University is not required, and no credit will be given for audited courses. To audit a course the student must (1) fill out a class schedule request form and enter an "A" in the "AUD" column of the form and (2) obtain the approval of the instructor of the course. The instructor must sign in the permission/signature column opposite the course. The student must register and pay the appropriate fee for the course(s). Registration for audit may not be changed from audit to credit, or vice versa, after the first week of classes.

Class Schedule Changes (Add/Drop)
Changes in class schedules may be made only with consent of the advisor and the dean of the college or school in which the student is registered. No changes in class schedules may be made after the date stipulated in the calendar for making changes. The time limit for adding or dropping a course is published in the University calendar. After the published date for add and drop students are fee liable for registered courses.

No student will receive credit for any course or courses for which

the student is not properly registered, though the student may have attended class and a grade was reported to the university registrar. Academic Load - Some colleges/schools have a maximum or minimum load which is stated in the respective curriculum sections of this catalog. The normal load for a student is 15-18 credit hours.

Academic Status

For the Fall and Spring terms, undergraduate students are considered full-time if they are enrolled for 12 hours or more. For the Fall and Spring terms, graduate students are considered full-time if they are enrolled for 9 hours or more. During the Summer term, undergraduate students are considered full-time if enrolled for 9 hours or more; graduate students are considered full-time if enrolled for 6 hours or more.

All students who are recipients of financial aid may be required to maintain a full-time load as indicated above. The minimum load for full-time benefits from the Veterans Administration is 12 credit hours.

Non-Degree Registration

An individual interested in taking course(s) but not working toward a degree may register as a Non-degree seeking student provided he or she has not been denied admission to the university. The Non-degree seeking student is required to follow the regular registration procedures and pay the same fees as other students. In addition, a Non-degree seeking Student Registration form must be completed and submitted before or at the time of registration. A Non-degree seeking undergraduate students is limited to earning 30 credit hours and non-degree seeking graduate students is limited to earning 12 credit hours. Registration is on a space available basis.

Credits earned by non-degree students are not considered degree credits. In order to receive degree credits, the student must submit an application for admission and the required $30.00 fee and qualify for admissions to a degree program. To qualify, all non-degree seeking students registering for undergraduate courses must have graduated from a high school or received a G.E.D. Exceptions will be considered on an individual basis.

Florida College System Dual Enrollment Registration

The student must obtain approval from the designated representatives of the institution. Florida College System students must have degree seeking status at the home college and possess at least a 2.00 grade point average. The student will be expected to follow prescribed registration procedures for Non-degree seekings.

Dual Enrollment Registration

The dual enrollment program is the enrollment of an eligible secondary student or home education student in a FAMU course creditable toward high school completion and an associate or baccalaureate degree (F.S. 1007.27; State Board of Education Rule 6A-10.241 FAC). Students who are eligible for dual enrollment pursuant to this section may enroll in dual enrollment courses conducted during school hours, after school hours, and during the summer term. However, if the student is projected to graduate from high school before the scheduled completion date of the FAMU course, the student may not register for that course through dual enrollment. Such a student may apply to FAMU and pay the required registration, tuition, and fees if the student meets the admissions requirements under F.S. 1007.263.

To be eligible for dual enrollment, the student must be currently enrolled in a secondary school operated by Leon or Gadsden County School Board. The student must possess a grade point average of 3.0 or better, appropriate test scores, and be classified as a high school junior or senior. Students will be enrolled at no cost to either the student or the district. To remain eligible, the student must obtain a 2.0 grade point average in university course work. Students in Leon or Gadsden County public high schools interested in dual enrollment course work should consult their guidance counselor for further information

Florida A&M University and Florida State University Cooperative Program

Florida A&M University and Florida State University are participants in a cooperative program that permits students enrolled at either institution to take a limited load at the other institution as follows:

- Permission is granted by the academic advisor and dean of the student's home university and by the chairperson of the department in which the course is to be taken at the host university.
- No more than half of the credit hours taken by a student during a given term may be taken at FSU
- Whenever possible within FAMU policy, courses taken at FSU may be graded on an S-U basis
- Courses taken at FSU should be those not offered at FAMU
- Student credit hours generated by students taking courses at FSU are treated the same as credits taken at FAMU
- All fees are paid at FAMU. Students will not be required to pay additional registration fees for courses taken at FSU

FAMU student joint enrollment at FSU

1. Complete the FAMU/FSU Registration Form available at www.famu.edu/registrar. Access the Registrar website and then forms.
2. Search for courses at www.fsu.edu and access the FSU Registrar's Website under Registration Tools. Complete the 'Requested Classes' portion of the Co-op form.
3. Take completed form to your FAMU academic advisor and obtain the Dean's signature. Their signatures give you permission to take classes at FSU.
4. Obtain the permission signature of the FSU department chair or instructor for the course.
5. Obtain a copy of your immunization record from the FAMU Health Center and take to The Wellness Center at FSU. Get clearance for registration on FSU campus.
6. Obtain a financial clearance from Student Financial Services at FSU (equivalent to our Student Accounts) to ensure that you do not owe FSU any money.
7. Bring the completed registration form and application, stamped immunization record, and financial clearance to the Co-op Representative in the FAMU's Registrar's Office, FHAC Room 112
8. Registration for the course at FSU will appear on your transcript in iRattler,
9. ALL drops and withdrawals are done through the FAMU Co-op Representative. NOT through FSU's Registrar's Office. Please see FAMU academic calendar for deadline.
10. No special arrangement is required with the Financial Aid

Office. However, your attendance must be reported for funds to be disbursed.

Note: Additional fees may apply if you chose online classes at FSU (See course information on FSU website.

11. Your Grades will be calculated into your FAMU grade point average (G.P.A.).
12. Grades will be posted by the Co-op Representative at the end of the term.

FSU Student joint enrollment at FAMU
Florida State University students entering the FAMU/FSU co-op program for the first time MUST:

1. Complete the registration form in its entirety and obtain approval signatures from instructor or department chair at Florida A & M University (FAMU departmental information may be found at www.famu.edu/, select Students, listing of majors, colleges & schools) and your FSU academic dean.

2. Pick up a copy of your immunization records from The Wellness Center. Take immunization records to FAMU's Student Health Services office in the Foote-Hilyer Building and obtain FAMU's health clearance form.

3. Bring the completed registration form and FAMU's health clearance form to the co-op representative in FSU's Registrar's office, 3900 UCA. You may reach the FSU co-op representative at (850) 644-1050.

FSU students continuing in the FAMU/FSU co-op program MUST:

1. Complete the registration form in its entirety and obtain approval signatures from instructor or department chair at FAMU and your FSU academic dean.

2. Bring the completed registration form to the co-op representative in FSU's Registrar's office, 3900 UCA. You may reach the FSU co-op representative at (850) 644-1050.

IMPORTANT REMINDERS:

-If problems arise with your registration at FAMU or FSU, you will be contacted using the information provided on the registration form. Please report any changes in contact information to the co-op representative at your home institution.

-DO NOT ALTER your co-op registration. To drop a co-op course contact the co-op representative in the Registrar's office at your home institution. All drop and add must be done through the Registrar's office. The deadline for dropping and adding are the same as for other classes at your host institution.

FAMU Course Search Instructions:
Go to www.famu.edu Scroll down to select Registrar >Schedule of Classes. Click on the appropriate term.

State Employees with Fee Waivers

All State Employees who are granted fee waivers are welcome to Florida A&M University to register for six credit hours on a "space available basis only." (F.S. 1009.265)

All State Employees must obtain and complete a "State Employee Tuition Waiver-Intent to Apply" and a "State Employee Tuition Waiver Registration" form by the required deadline.

State employees may only register for courses approved by their immediate supervisor, agency head and the University.

Fee waivers may not be used for thesis, dissertation, applied music courses, internship, courses requiring directed individual instruction, courses offered in the colleges and schools of Architecture, Journalism, Law, Nursing, Online Courses for Distance Learning, and Pharmacy.

State employees using fee waivers must:

1. Present the approved tuition waiver forms to the registration representative.
2. Complete the one-page Non-Degree Seeking Student Application form. The form may be obtained from the Registrar's website at www.famu.edu/registrar. (This form will not be necessary if you were enrolled the previous semester or have been admitted to a degree program).
3. Complete a class schedule request form provided by the registration representative(s).
4. Submit the class schedule request form to the registration representative.
5. Pick up the class schedule printout and check for accuracy.
6. Request the late fee waiver from the registration representative and attach to your schedule printout
7. Go directly to Student Financial Services and turn the approved tuition waiver form for fee validation in Foote-Hilyer Administration Center (G-7).
8. If your fees are not validated by the end of the payment deadline, you will be assessed a $100.00 late payment fee.

Please contact the Registrar's Office at (850) 599-3115 if you have questions or need additional information.

Tuition-Free Courses for Persons 60 Years of Age and Older
Individuals who are 60 years of age and older and are residents of the State of Florida are permitted to take courses on a tuition-free basis. All fees are waived for this group of citizens who attend credit classes for non-degree purposes. Registration will be processed upon presentation of a proof of residency and proof of age.

Under this option, registration is allowed on a space available basis only and does not include thesis, dissertation, applied music courses, internship, courses requiring directed individual instruction, courses offered in the colleges and schools of Architecture, Journalism, Law, Nursing, Online Courses for Distance Learning, and Pharmacy. Certain courses require permission from the department for enrollment. Individuals who wish to register in permission courses must go to the department offering the class and get a permission/signature prior to going to

the registration center.

Registration dates and procedures are the same as those listed for state employees and non-degree seeking students.

Repeat course surcharge

Beginning fall semester 1997, a student enrolled in the same undergraduate college credit course more than two times shall be assessed a repeat course surcharge equal to 100 percent of the full cost of instruction and shall not be included in calculations of full-time equivalent enrollments for state funding purposes (240.124 F.S.). The purpose of this surcharge is to encourage students to pass the course during the first two attempts and to prevent students from repeating courses unnecessarily

Calculations of the full cost of instruction shall be based on the system wide average of the prior year's cost of undergraduate programs for the Florida College System and the State University System. The University may make exceptions for individualized study, elective coursework, courses that are repeated as a requirement of a major, and courses that are intended as continuing over multiple semesters. The repeat of coursework more than two times to increase grade point average or meet minimum course grade requirements is excluded.

Exception include;

- Any course(s) taken or repeated prior to Fall 1997
- Courses identified as repeatable (to the limit allowed)
- Courses designed to take multiple semesters to complete
- Withdrawals or dropped courses that do not result in fee payment

Students may appeal the fee if extenuating circumstances or severe financial hardship exists. Extenuating circumstances are those determined to be exceptional and beyond the control of the student. These include serious illness or medical conditions preventing course completion, death of an immediate family member, etc. Severe financial hardships are also those determined to be exceptional and beyond the control of the student such as bankruptcy, loss of income, documented qualification for federal need-based aid, etc. A student is liable for paying all surcharge fee(s) associated with repeated courses along with their regular tuition on or before the term's deadline date. After the Repeat Course Surcharge Committee meets to determine the outcome of your appeal, the repeat surcharge fee is refunded back into the student's FAMU account, if approved.

Excess Credit Hours

Students who exceed the hours required to complete their baccalaureate degree programs are required to pay an excess hour surcharge for each credit hour in excess. The excess hour surcharge shall become effective for students who enter the university for the first time and maintain continuous enrollment as follows:

(a) For the 2009-2010 and 2010-2011 academic years, an excess hour surcharge equal to 50 percent of the tuition rate for each credit hour in excess of 120 percent.

(b) For the 2011-2012 academic year, an excess hour surcharge equal to 100 percent of the tuition rate for each credit hour in excess of 115 percent.

(c) For the 2012-2013 academic year and thereafter, an excess hour surcharge equal to 100 percent of the tuition rate for each credit hour in excess of 110 percent.

For example; students whose majors require 120 credit hours and who entered Florida A&M University in;

(a) 2009-2010 and 2010-2011 academic years, an excess hour Surcharge equal to 50 percent of the tuition rate will be accessed for each credit hour in excess of 144

(b) 2011-2012 academic year, an excess hour surcharge equal to 100 percent of the tuition rate will be accessed for each credit hour in excess of 138

(c) 2012-2013 academic year and thereafter, an excess hour surcharge equal to 100 percent of the tuition rate will be accessed for each credit hour in excess of 132

All credit hours for courses attempted at Florida A&M University for which the student is seeking a baccalaureate degree will be considered when calculating the credit hours for the surcharge, including:

- Failed courses
- Courses that are dropped or withdrawn from after the university's advertised last day of drop/add period except for courses from which a student withdrew due to reasons of medical or personal hardship

1. Repeated courses, except those for which the student has paid the full cost of instruction (Repeat course charge applied)
2. All credit hours earned at another institution and accepted for transfer by Florida A&M University and applied toward the student's baccalaureate degree program; and
3. Graduate credit that is attempted for completion of a baccalaureate degree. Credit that is used solely for the graduate degree will not be included
4. Credit hours that will not be calculated in the tuition surcharge for excess hours include;
5. College credits earned through an articulated accelerated mechanism, such as AP, IB, CLEP, AICE, DANTE, Excelsior, or Dual enrollment
6. Credit hours earned through internship programs
7. Credit hours required for certification, recertification, or certificate programs
8. Credit hours in courses from which a student must withdraw due to reasons of medical or personal hardship
9. Credit hours earned by a returning student seeking a second baccalaureate degree so long as the student began the first baccalaureate program before fall 2009
10. Credit hours taken by active-duty military personnel. Students will be required to submit documentation of their active duty status
11. Credit hours required to achieve a dual major taken while pursuing a baccalaureate degree
12. Remedial and English as a Second Language credit hours. This includes foreign language courses taken by a student in order to meet State University System requirement
13. Credit hours earned in military science courses that are part of the Reserve Officers' Training Corps (ROTC) program
14. Students are advised to meet with their academic advisor to discuss their academic work. If a student believes he/she is charged in error, the student should contact the registrar's office at 850-599-3115.

Residency Requirements for Tuition Purposes

For the purpose of assessing registration and tuition fees, students will be classified as "resident or nonresident." A "resident" for tuition purposes is a person who qualifies for the in-state tuition rate; a "nonresident" for tuition purposes is a person who does not qualify for the in-state tuition rate.

At Florida A&M University there are two offices responsible for the initial review of residency for tuition purposes under Florida Statute 1009.21. These offices are: The Office of Admissions and The Office of the University Registrar. The first office determines residency for all first-time-on-campus students; the Office of the University Registrar is the only office to which students can apply for changes in residency once they are enrolled. First-time-on-campus students will be classified in accordance with the information on their applications, including the "Florida Resident Affidavit" on the last page of the application, providing no other information is available calling into question the information on the application.

Reclassification of residency for Tuition Purposes

General Information

A student applying to Florida A&M University must complete a residency form or affidavit in order to declare Florida residency for tuition purposes. An initial determination of in-state or out-of-state residency status is made by the Admissions Office for tuition purposes. This status determination remains in effect until an application for reclassification is submitted by the student to the Registrar's Office and is approved.

Who Qualifies?

To qualify as a Florida resident for tuition purposes, the student (dependent or independent) must be a

1. U.S. Citizen, or
2. Permanent resident alien or a legal alien granted indefinite stay by U.S. Citizenship and Immigration Services (USCIS) (This is the government agency that oversees lawful immigration to the United States) and
3. Person who established physical and legal residence in Florida for at least one year. "Evidence of legal residence and its duration shall include clear and convincing documentation that residency in this state was for a minimum of 12 consecutive months prior to a student's initial enrollment in an institution of higher education (F. S. 1009.21. Students who do not meet this requirement cannot be classified as residents for tuition purposes.

Determination of Status - Independent or Dependent

An independent student will be required to submit his or her own documentation of residency while a dependent student will be required to submit his or her parent's spouse's or legal guardian's documentation of residency.

Independent Student

A person who meets any one of the following criteria shall be classified as an independent student for the determination of residency for tuition purposes:

- The student is 24 years of age or older by the first day of classes of the term for which residency status is sought at a Florida institution
- The student is married
- The student has children who receive more than half of their support from the student
- The student has other dependents who live with and receive more than half of their support from the student
- The student is a veteran of the United States Armed Forces or is currently serving on active duty in the United States Armed Forces for purposes other than training
- Both of the student's parents are deceased or the student is or was (until age 18) a ward/dependent of the court
- The student is working on a master's or doctoral degree during the term for which residency status is sought at a Florida institution
- The student is classified as an independent student by the Financial Aid Office
- The student is homeless as determined by the student's high school or school district liaison,
- The student is a foster care/ward of the court as determined by a court in the student's state of legal residence
- Student submits documentation that he or she provides fifty (50) percent or more of the cost of attendance as defined by the financial aid office (federal, state, and institutional aid or scholarships are not included) for independent, in-state students. Clear and convincing evidence must be submitted to Florida A&M University.

Dependent Student

All other students who do not meet the above definition of an independent student shall be classified as dependent students for determination of residency for tuition purposes.

Residency Documentation

Documentation establishing legal residence in Florida by one of two means (must be dated at least one year prior to the first day of classes of the semester for which resident status is sought)

- Proof of purchase of a permanent home in Florida in which the student has resided for at least one year prior to the first day of classes
- Proof that the student has maintained residence in Florida for the preceding year (e.g., rent receipts, canceled checks or notarized statement from a landlord); AND

Establishment of Domicile

Documentation establishing bona fide domicile in Florida which is not temporary or merely incidental to enrollment in a Florida institution of higher education must be dated at least one year prior to the first day of classes of the semester for which resident status is sought. The following documents will be considered evidence of domicile;

Note: No single criteria will be considered as conclusive evidence of domicile:

- Florida voter's registration card.
- Florida driver's license.

- State of Florida identification card.
- Florida vehicle registration.
- Proof of a permanent home in Florida which is occupied as a primary residence by the individual or by the individual's parent if the individual is a dependent child.
- Proof of a homestead exemption in Florida.
- Transcripts from a Florida high school for multiple years if the Florida high school diploma or GED was earned within the last 12 months.
- Proof of permanent full-time employment in Florida for at least 30 hours per week for a 12-month period.

No Contradicting Evidence
Students should not have conflicting evidence establishing or maintaining residence elsewhere.

Exception Categories for Temporary Florida Residency
Applicants who do not meet the 12-month requirement may qualify for temporary in-state status by qualifying under an exception category

- Members of the U.S. Armed Forces on active duty stationed in Florida and their spouse and dependents or military personnel not stationed in Florida whose home of record or state of legal residence certificate DD Form 2058 is Florida. (Present a copy of DD 2058, military orders, military identification, and leave & earning statement.)
- Married to a legal Florida resident and intend to make Florida a permanent home. (Present a copy of your marriage license and applicable documents for Florida spouse.)
- Full-time instructional or administrative employees of Florida public schools, community colleges, or institutions of higher education or their spouse and dependents (Present official letter from appropriate personnel from institution of employment and proof of relationship.)
- Part of the Latin American/Caribbean Scholarship Program. Receive a scholarship from the U.S. Government (federal) or Florida state government. The student must attend, on a full-time basis, a Florida institution of higher education. (Offer letter and Student Award Notification.)
- Qualified beneficiary under the terms of the Florida Pre-Paid College Program. (Present a copy of the current Florida Prepaid recipient card.)
- Full-time employee of a state agency or political subdivision of the state whose student fees are paid by the state agency or political subdivision for the purpose of job-related law enforcement or corrections training
- Southern Regional Education Board's Academic Common Market graduate student. (Certification letter from State Coordinator required)
- McKnight Doctoral Fellows and Finalists who are United States citizens.
- United States citizens living outside the United States who are teaching at a Department of Defense Dependent School or in an American International School and who enroll in a graduate level education program which leads to a Florida teaching certificate.
- Active duty members of the Canadian military residing or stationed in this state under the North American Air Defense (NORAD) agreement, and their spouses and dependent children, attending a Florida College System institution or state university within 50 miles of the military establishment where they are stationed.
- Active duty members of a foreign nation's military who are serving as liaison officers and are residing or stationed in this state, and their spouses and dependent children, attending a Florida College System institution or state university within 50 miles of the military establishment where the foreign liaison officer is stationed.

Change of Residency Status
A person who is classified as a nonresident for tuition purposes may become eligible for reclassification as a resident for tuition purposes if that person or, if that person is a dependent child, his or her parent presents clear and convincing documentation that supports permanent legal residency in this state for at least 12 consecutive months rather than temporary residency for the purpose of pursuing an education. Such documentation may include but not limited to evidence of full-time permanent employment for the prior 12 months or the purchase of a home in this state and residence therein for the prior 12 months while not enrolled in an institution of higher education.
For more details please access the Florida Statutes website at http://www.flsenate.gov/Laws/Statutes/2010/1009.21

Procedures
Students must submit completed application no later than the published last day to be considered for in-state status for that semester or session. Please see the university academic calendar for specific dates.

Step 1: To apply for reclassification you must have attended Florida A&M University for at least one semester. You may apply during your first semester if an error/omission was made in the initial determination

Step 2: Download and complete the RESIDENCY RECLASSIFICATION FOR TUITION PURPOSES FORM. This form will be submitted to the Registrar's office with your supporting documentations.
Step 3: Obtain all supporting documentation: No single document will be considered as conclusive.

- Florida voter's registration card.
- Florida driver's license.
- State of Florida identification card.
- Florida vehicle registration.
- Proof of a permanent home in Florida which is occupied as a primary residence by the individual or by the individual's parent if the individual is a dependent child.
- Proof of a homestead exemption in Florida.
- Transcripts from a Florida high school for multiple years if the Florida high school diploma or GED was earned within the last 12 months.
- Proof of permanent full-time employment in Florida for at least 30 hours per week for a 12-month period.
- Supporting documents for temporary in-state status by qualifying under an exception category include
- Present a copy of DD 2058, military orders, military identification, and leave & earning statement.

- Married to a Legal Florida resident and intend to make Florida a permanent home. (Present a copy of your marriage license and applicable documents for Florida spouse.)
- Official letter from appropriate personnel from institution of employment and proof of relationship for Full-time instructional or administrative employees of Florida public schools, community colleges, or institutions of higher education or their spouse and dependents
- Offer letter for part of the Latin American/Caribbean Scholarship Program. The student must attend, on a full-time basis, a Florida institution of higher education.
- A current copy of the Florida Prepaid recipient card for qualified beneficiary under the terms of the Florida Pre-Paid College Program.
- Official letter from appropriate personnel for Full-time employee of a state agency or political subdivision of the state whose student fees are paid by the state agency or political subdivision for the purpose of job-related law enforcement or corrections training
- Certification letter from State Coordinator required for Southern Regional Education Board's Academic Common Market graduate student.
- Offer letter for McKnight Doctoral Fellows and Finalists who are United States citizens.
- Official letter from appropriate personnel for United States citizens living outside the United States who are teaching at a Department of Defense Dependent School or in an American International School and who enroll in a graduate level education program which leads to a Florida teaching certificate.
- Official letter from appropriate personnel for Active duty members of the Canadian military residing or stationed in this state under the North American Air Defense (NORAD) agreement, and their spouses and dependent children, attending a Florida College System institution or state university within 50 miles of the military establishment where they are stationed.
- Official letter from appropriate personnel for Active duty members of a foreign nation's military who are serving as liaison officers and are residing or stationed in this state, and their spouses and dependent children, attending a Florida College System institution or state university within 50 miles of the military establishment where the foreign liaison officer is stationed..

Step 4: Submit the completed and signed form to Residency Staff (Room 103 FHAC) or scan and email to registrar@famu.edu (original documents may be requested for review)
Your submission will be reviewed by the Residency Staff, and you will be notified of your determined eligibility.

Curriculum Changes – Catalog Year
In response to changes in education and consistent with occasional changes in certification requirements, the curriculum of one or several divisions or departments may change; such changes may extend the normal time of course requirements for a degree. A student who has been in regular attendance and has taken and passed the prescribed program of work each term may expect to obtain a degree normally in eight semesters. Any other student may be required to spend longer periods of time and must meet any added requirements introduced in the curriculum, including but not limited to non-credit requirements, grade point average and total number of credit hours required

The curriculum in the catalog of the year in which the student enters the university or a Florida public college is the one under which he or she should normally obtain the degree if there has been no break in enrollment. Students are encouraged to consult their academic chair/advisor for more information.

Major and Minor Fields of Study
Every student fulfilling the requirements for a degree from the university is required to earn a "major." The major must meet the approval of the department in which it is earned. Students seeking double majors must meet the requirements of both departments. Courses to be counted for the minor must be approved by the division chairperson and the dean of the school.

Major Changes
Students may transfer from one department to another or from one school to another with the written approval of the department chairs and deans concerned.
If a student intends to change his/her major within his present School/College or to a different School/College, he must first meet with his current advisor and complete a change of Major Form. Then meet with an advisor in the department of his/her intended major. If accepted by the new College/School, the new Dean or his designee will complete the Change of Major form. The designated Major Change person in the academic area will complete the process in the system. If the student has not been accepted into the new department by registration time, the student must seek advisement from his/her current faculty advisor.

The list below shows academic areas and requirements for a change of major;

College/School	Major	Admission GPA/ Course Req.
Agriculture and food Science		N/A
Allied Health Sciences	All	N/A
Architecture	All	Limited Access-MinGPA: 2.5
Science & Tech	All	N/A
Social Sciences, Arts & Humanities		
	African-American Studies	N/A
	Biology	N/A
	Chemistry	N/A
	Computer Info. Science	N/A
	Computer Info. Systems	N/A
	Criminal Justice	N/A
	Economics	N/A
	English	"B" average in ENC 1101 and 1102.

	Fine Arts	N/A
	French	N/A
	History	N/A
	Jazz Studies	N/A
	Mathematics	N/A
	Music	Entrance examination
	Philosophy and Religion	N/A
	Physics	N/A
	Political Science	N/A
	Psychology	N/A
	Social Work	N/A
	Sociology	N/A
	Spanish	N/A
	Theatre/Visual Arts	N/A

College/School	Major	Admission GPA/ Course Req.

Business and Industry

Accounting and Business Administration
"B" or better in: ENC 1102 or equivalent , Financial Acctg. and Business Calculus

Education	All	Statutory Requirement Minimum GPA: 2.5
Engineering	All	"C" or higher in: EGN 1004L Calculus I & II, General Chemistry I & General Physics I

(For Chemical and Biomedical Eng., General Chemistry II is required instead of Physics I)

Environment	Environmental Science	N/A
Journalism	Journalism and Public Relations (not Graphic Comm. or Graphic Design)	Limited Access - Minimum GPA: 2.5 & 2.5 in Freshman Composition
Nursing	Nursing	Limited Access - Minimum GPA: 2.7, complete all General Education courses
Pharmacy	All "C"	Minimum GPA: 2.75 and or better in pre-requisite courses

Double Major

Students are permitted to declare double majors by obtaining a memorandum from the second major department signed by the department chair indicating that the student has been accepted in the program. Students must satisfy requirements for graduation in each major in order to receive degrees in both majors.

Procedure:

1. Student meets with his/her academic advisor to review student's academic work. The advisor would determine if the student can successfully complete two majors.
2. Student seeks approval from the department that he/she wishes to seek a second major.
3. A memorandum from the chair of the second major department is sent to the appropriate person at the student's primary major for their record

NOTE: The memorandum must include the student's name, FAMU ID, second major name, and major code

4. The appropriate person a the second major area updates the student's record in iRattler

Academic Progress Policy-Undergraduate

Students entering Florida A&M University prior to Fall 2014 semester are subject to the Levels of Academic Standing policy in effect at the time of their matriculation (see applicable catalog for prior academic standing policy). This policy is effective for fall 2014 Semester and later cohort of students.

Good Academic Standing occurs when a student's cumulative grade point average (GPA) is 2.0 or above.

Academic Warning occurs when a new student's cumulative GPA is below 2.0 at the end of the student's first term at FAMU. Students on Academic Warning will have a hold placed on their registration until they have met with an advisor and devised an academic plan of study to return to Good Academic Standing at the end of their next enrolled term.

Academic Probation occurs when a continuing (i.e., not first term at FAMU) student's cumulative GPA falls below 2.0. Students on Academic Probation may not register for more than 15 semester hours. A hold is placed on their registration until they have met with an advisor and devised an academic plan of study to return to Good Academic Standing at the end of their next enrolled term. Academic Suspension occurs when a student on Academic Probation cumulative GPA is still below 2.0 after the student's next enrolled term. Students on Academic Suspension cannot re-enroll at the university for at least two (2) consecutive terms. They must file a petition for readmission prior to the beginning of any term in which they are eligible to return. All readmission petitions are forwarded to the University Admissions Committee for review. This committee will recommend approval or disapproval of each petition to the Provost and Vice President for Academic Affairs. The decision of the Provost will be final. Students readmitted from Academic Suspension are placed back on Academic Probation. Students will be placed on Academic Dismissal instead of receiving a second Academic Suspension.

Students on Academic Dismissal are not allowed to re-enroll at FAMU unless they have been reinstated.

Reinstatement after Academic Dismissal

An undergraduate student who has been academically dismissed from the university may petition to be reinstated after earning

an Associate of Arts degree from a community college (Florida College System institutions). This option is not available for students who have already earned an Associate of Arts degree prior to being dismissed. As part of the reinstatement, students may request that their cumulative GPA be renewed after reentry. The new cumulative GPA will begin immediately upon enrollment after being reinstated. All previous grades will remain on students' transcripts; however, they will not be calculated into students' cumulative GPA. For honor's purposes, all grades, including grades earned prior to the academic dismissal, will be considered. After returning to Florida A&M University, a student must remain in Good Academic Standing by maintaining a cumulative GPA of 2.0 or better. Student petitions for reinstatement will be considered on a case-by-case basis by the Admissions Committee. All decisions of the Admissions Committee are final. If a reinstated student's cumulative GPA falls below 2.0, the student will be academically dismissed and is not eligible to return. (BOT 4.012)

Procedure for Petitioning for Readmission

A student on Academic Suspension cannot re-enroll at the university for at least two (2) consecutive terms. The student must file a petition for readmission prior to the beginning of any term in which the student is eligible to return. All complete readmission petitions are forwarded to the University Admissions Committee for review.

The student's readmission petition file must contain:

1. Application/Petition for Readmissions
2. A letter of petition for readmission from the student
3. Letters of recommendation for readmission from:
    a. The student's academic advisor
    b. The student's department head
    c. The student's dean
    d. An academic plan from the student's advisor
    e. Any other letter(s) of support the student wishes to submit (optional).

Please note: If any of the persons above function in a dual role, separate letters are not required

The student must submit these individual letters with all other documents to complete their readmission petition file to the Office of Admissions, Room G-9, Foote-Hilyer Administration Center, Florida A&M University.

The student's readmission petition file will be forwarded to the university Admissions Committee for review. The committee will determine if it is mathematically possible for the student to earn 2.00 at the end of the next enrolled term to inform part of its decision. The committee will approve or disapprove the petition based on all available information. The decision made on the student's readmission will be final.

If the student is readmitted, the student will re-enter the major he/she was in when last enrolled or use the procedure under "Change of Major" to enter a different major. In the event that the major a readmitted student was in when last enrolled is now either dormant or terminated, the student will not be readmitted into the last major, but will need to seek acceptance into a currently offered major. Students readmitted from Academic Suspension are placed back on Academic Probation.

Academic Progress-Graduate

Graduate students are required to maintain a grade point average of 3.00 "B" or better. Failure to maintain the required "B" average could result in termination of a graduate student's status. Monitoring of academic progress of graduate students occurs in the academic department.

Honors-Undergraduate

Honor Roll-The Honor Roll listing includes students who are enrolled full-time in college-level degree credit earning courses, who earn grade point average (GPA) of 3.00 or above, and cumulative GPA of 2.5 or better.

Dean's List-The Dean's List includes students who are enrolled full-time in college-level degree credit earning courses, who earn a 3.5 or above semester GPA and who's cumulative GPA is 3.0 or above.

President's List-The President's List includes students who are enrolled full-time in college-level degree credit earning courses, who have attained a perfect 4.0 semester GPA and whose cumulative GPA is 3.5 or above.

Eligibility for Academic Honors- Undergraduate students (only) are eligible for academic honors. A student may appear on only one of the academic honors listing each semester.

Ineligibility for Academic Honors- A student who receives a "U" during the semester is not eligible to receive an academic honor.

Class Attendance Regulations

Students are expected to make the most of the educational opportunities available by regularly attending classes and laboratory periods. The university reserves the right to address individual cases of non-attendance.

Students are responsible for all assignments, quizzes, and examinations at the time they are due and may not use their absence from class as a plea for extensions of time to complete assignments or for permission to take make-up examinations or quizzes.

Absence from class for cause: (a) participation in recognized university activities, (b) personal illness properly certified, or (c) emergencies caused by circumstances over which the student has no immediate control may be excused by the dean or director of the unit in which the student is enrolled.

Specifically, the class attendance regulations will apply to all students as follows:

A student will be permitted one unexcused absence per credit hour of the course he or she is attending. A student exceeding the number of unexcused absences may be assigned the grade of "F."

Summer Term Attendance Rules

Students entering a university in the State University System with fewer than 60 semester hours credit shall be required to earn at least 9 semester hours prior to graduation by attendance at one or

more summer sessions. University presidents or their designees may waive the application of this regulation in cases of unusual hardship to the individual. [BOG 6.016]

Summer terms may consist of two or more sessions. Courses offered during the summer sessions are organized to make them equivalent in content, method, and credit to those of a full semester. During summer term the university supplements the regular instructional program with credit and non-credit activities such as institutes, workshops, and conferences.

Undergraduate Transfer Credit

A student who has attended any regionally accredited college or university and has earned 12 or more semester hours of transferable college credit since receiving a standard high school diploma or its equivalent is considered a transfer student upon admission to Florida A&M University (FAMU).

1. Transfer students are required to have submitted complete official academic transcripts from previous institutions on file in the Admissions Office prior to evaluation.

2. Each transcript;
(a) Shall list all courses for which the student was enrolled each term, the grades for each course at the end of the term, and credits awarded,
(b) Shall contain a statement explaining the grading policy of the previous institution.
(c) Should also specify any college credits the student earned through accelerated mechanisms.

3. Transfer students are required to be in good standing and eligible to return to the last postsecondary institution attended as a degree-seeking student and have a grade point average of at least 2.00 on a 4.00 scale on all college-level academic courses attempted.

4. To meet graduation requirements for the baccalaureate degree, a transfer student must earn at least 25 percent of the number of credit hours required to graduate in the major at FAMU.

5. Credits are transferred based on the following:
(i) The institution from which the student wishes to transfer is regionally accredited. (credit can be transferred from a non-regionally accredited institution that participates in the Florida Statewide Course Numbering System, per Florida Statute)
(ii) The overall grade point average is at least 2.00 on a 4.00 scale on the transfer transcript.
(iii) The grades of individual courses to be transferred are "C" or better, or "S" or "P."

6. College credits earned by high school or college students on the basis of the College Entrance Examination Board's College Level Examination Program (CLEP) subject examination, College Board Advanced Placement Program examination (AP), Advanced International Certificate of Education examination (AICE), International Baccalaureate examination (IB), and other examinations shall be accepted for transfer provided the scores attained by the student on these examinations meet the standards determined by the Articulation Coordinating Committee (ACC) Credit-By-Exam Equivalencies as adopted by the Board of Governors (www.fldoe.org/articulation).

FAMU will award credit for specific courses for which competency has been demonstrated by successful scores on any of the examinations listed above unless the award of credit duplicates credit already awarded. Students may be exempt from courses based on the award of credit if competencies have been so demonstrated.

7. The University subscribes to the Articulation Agreement as outlined in (1007.23 F.S.) Under this agreement, graduates of Florida College System institutions who received the Associate of Arts(AA) degree shall be awarded
a. at least sixty (60)semester hours of academic work exclusive of occupational courses and courses not accepted in FAMU; to include
b. approved general education core curriculum semester credit hours in communication, mathematics, social sciences, humanities, and natural sciences as determined in section 1007.25 f.s.

8. Transfer students are required to have completed 2 units of one foreign language in high school or the equivalent at the postsecondary level. Transfer students not meeting this foreign language requirement upon admission must fulfill the foreign language requirement prior to completion of the baccalaureate degree (BOG Regulation 6.004).

A student who received an Associate in Arts degree prior to September 1, 1989, or who enrolled in a program of studies leading to an Associate degree from a Florida College System institution prior to August 1, 1989, and maintains continuous enrollment shall be exempt from this admissions requirement. Any other Associate in Arts degree graduate admitted without meeting the foreign language requirement must earn 8 credit hours of one foreign language course prior to graduation from FAMU.

Beginning with students initially entering a Florida College System institution or state university in 2014-2015 and thereafter, coursework for an associate in arts degree shall include demonstration of competency in a foreign language pursuant to s. 1007.262.

9. Courses within an associate in applied science degree program may be accepted toward a baccalaureate degree program on an individual or block basis as authorized in inter-institutional articulation agreements with FAMU.

10. Any transfer student with a disability shall be eligible for reasonable substitution or modification as provided by BOG Regulation 6.018.

Transient Students:

A Transient student is a currently enrolled student who registers for approved course(s) at another institution temporarily. There are two types of transient students – outgoing and incoming.

Outgoing: An Outgoing Transient student is a currently enrolled FAMU student who registers for course(s) at another institution for

one term with the intention of applying the credit toward his/her degree program at Florida A&M University. Transient students must receive approval from their academic advisors before taking a course at any other institution. Completing and submitting an approved transient form, lets the other college or university know that you are a degree-seeking student at FAMU. It also helps you decide, with your advisor, what courses can be taken that will be accepted with your current degree track at another institution.

Incoming: An Incoming Transient student is a student currently enrolled at another institution who wishes to register for course(s) at Florida A&M University for one term. Incoming Transient students from any Florida Public Institution (State University System (SUS) and Florida College System (FCS)) should receive approval from their home institution before registering for a course at Florida A&M University.

Students who attend other institutions without permission form their academic area may not have their credits accepted. Transient requests are approved based on the following:

- The institution the student wishes to attend is regionally accredited or includes requirements as stipulated above
- Student is in good standing at FAMU (G.P.A. 2.00 or better; not administratively suspended)
- Student has no financial obligation to the university (not on cashier's hold)
- Transient application is processed prior to term for which the student is applying
- Pre-approved transient course a student completes with a grade of "C" or better will be accepted by FAMU

Outgoing and Incoming transient students as defined above will begin their request for approval online at www.flvc.org. for all Florida Public Institutions. A transient student form completed on the FLVC site is automatically routed to your advisor, Department Chairperson, Dean, and to the Office of the University Registrar within three to seven business days for processing.

Instructions

1. Before applying online, you MUST see your advisor prior to submitting your application through the Florida Virtual Campus (FLVC) Website.
2. Select your College/School (Example: College of Social Sciences, Arts and Humanities, Education)
3. Select Major (Elementary Education, Music Education, Math, Criminal Justice, etc.)
4. Select Classification (Freshman, Sophomore, Junior, Senior, Graduate, and Professional). Note: Classification is based on earned hours for undergraduate students. (Example: 0-29 freshmen, 30-59 sophomores, 60-89 Junior, 90-120+ Senior.)
5. Enter Student ID or SS# (if requested)
6. Select Institution you will be attending (Example: Daytona Beach State College)
7. Review information entered for accuracy
8. You MUST be in good standing at FAMU (no Judicial Hold or No outstanding Financial Obligation)
9. You MUST have an 2.0 overall GPA
10. Student must be enrolled in a degree program and is eligible to re-enroll
11. Student must have a Student Health form on file indicating the required Measles and Rubella immunities.
12. Know your residency classification for tuition purposes (Florida or Non-Florida)
13. Know the prefix, course number, hours, course title, and FAMU course equivalent when selecting a course to take from another institution.

For additional information, please contact the Registrar's office at registrar@famu.edu or 850-599-3115

Correspondence Courses

Correspondence course work may be accepted if the credits appear on the transcript of a regionally accredited institution and the earned grade is "C" or above. The State University System of Florida offers courses by correspondence through the division of Continuing Education of the University of Florida.

NOTE: Applicability of transferred credits toward a degree program will be determined by the individual school or college.

Acceleration Programs

Florida A&M University encourages students to take advantage of opportunities to reduce the usual length of time it takes to complete a degree program. The university has established several avenues which permit a reduction in the normal amount of time required to complete the requirements for a baccalaureate degree. Each baccalaureate degree program is so designed that students are afforded an opportunity to complete a minimum of twenty-five percent of degree requirements through acceleration mechanisms. These programs include dual enrollment, credit by examination, early admission to the university, the year-around calendar, and any combinations of the above acceleration mechanism.

These opportunities include the following:

1. **Dual Enrollment**

The dual enrollment program is the enrollment of an eligible secondary student or home education student in a FAMU course creditable toward high school completion and an associate or baccalaureate degree (F.S. 1007.271). See additional information elsewhere in the catalog

2. **Credit by Examination**

Students who are enrolled or plan to enroll at FAMU may earn credit for certain introductory courses through the following credit by examination programs:

- Advanced Placement Program (AP)
- College Level Examination Program (CLEP)
- International Baccalaureate Program (IB)
- DANTES
- Department Examinations and Dean Waivers
- Military Service School
- Excelsior

Credit-By-Examination List
(AP, CLEP, IB, DSST, Excelsior)

Advanced Placement Exam	Passing Score	FAMU Equivalent	Min. # Credit Hrs. Acc.
Art History	3	ARH 2000	3
	4 or 5	ARH 2050/ ARH 2051	6
Biology	3	BSC 1005C or BSC 1005/1005L	4
	4	BSC 1010C or BSC 1010/1010L	4
	5	BSC 1010C or BSC 1010/1010L & BSC 1011C or BSC 1011/1011L	8
Calculus (AB)	3 or higher	MAC 2311	4
Calculus (BC)	3	MAC 2311	4
	4 or higher	MAC 2311 & MAC 2312	8
Chemistry	3	CHM 1020C or CHM 1020C/1020L	4
	4	CHM 1045C or CHM 1045/1045L	4
	5	CHM 1045C or CHM 1045/1045L & CHM 1046C or CHM 1046/1046L	8
Chinese Language and Culture	3	CHI 1120	4
	4 or higher	CHI 1120 and 1121	8
Computer Science (A)	3	CGS 2060	3
Computer Science (AB)	3 or higher	CGS 2060	3
Economics: Macro	3 or higher	ECO 2013	3
Economics: Micro	3 or higher	ECO 2023	3
English Language & Composition	3	ENC 1101	3
	4 or higher	ENC 1101 & 1102 or LIT 2110 if 1101 is already satisfied	6
English Literature & Composition	3	ENC 1101 or LIT 2110 or ENL 2023	3
	4 or higher	ENC 1101 & 1102 or LIT 2110 if 1101 is already satisfied	6
Environmental Science	3 or higher	EVR 1001	3
European History	3	EUH 2000	3
	4 or higher	EUH 3100 & 3120	6
French Language	3	FRE 1120	4
	4 or higher	FRE 1120 & 1121	8
French Literature	3	FRW 3100	3
	4 or higher	FRW 3100 & 3101	6
German Language	3	GER 1120	4
	4 or higher	GER 1120 & 1121	8
Government & Politics: Comparative	3 or higher	CPO 2002	3
Government & Politics: United States	3 or higher	POS 2041	3
Human Geography	3 or higher	GEO 1200	3
Italian Language & Literature	3	ITA 1120	4
	4 or higher	ITA 1120 & 1121	8
Japanese Language & Literature	3	JPN 1120	4
	4 or higher	JPN 1120 & 1121	8
Latin: Literature	3 or higher	LAT 1120	4
Latin: Vergil	3 or higher	LAT 1120	4
Music Theory	3 or higher	MUT 1001	3
	If aural and non-aural sub scores 3 or higher	MUT 1241 & 1242	3
Physics B	3	PHY 2053C or PHY 2053/2053L	4
	4 or higher	PHY 2053C or PHY 2053/2053L and PHY 2054C or PHY 2054/2054L	8
Physics C: Electricity / Magnetism	3	PHY 2054C or PHY 2054/2054L	4
	4 or higher	PHY 2049C or PHY 2049/2049L	8
Physics C: Mechanics	3	PHY 2053C or PHY 2053/2053L	4
	4 or higher	PHY 2048C or PHY 2048/2048L	4
Psychology	3 or higher	PSY 2012	3
Spanish Language	3	SPN 1120	4
	4 or higher	SPN 1120 & 1121	8
Spanish Literature	3	SPW 3100	3

	4 or higher	SPW 3100 & 3101	6
Statistics	3 or higher	STA 2023	3
Studio Art: Drawing Portfolio	3 or higher	ART 2300	3
Studio Art: 2-D Design Portfolio	3 or higher	ART 1201C	3
Studio Art: 3-D Design Portfolio	3 or higher	ART 1202C	3
United States History	3	AMH 2010	3
	4 or higher	AMH 2010 & 2020	6
World History	3 or higher	WOH 1012	3

COLLEGE-LEVEL EXAMINATION PROGRAM (CLEP)

	Passing Score	FAMU Equivalent	Min. # Credit Hrs.
Accounting, General	50	ACG 2021	3
Algebra, College	50	MAC 1105	3
Algebra-Trigonometry, College or Precalculus	50	MAC1147 or 1114	4
American Government	50	POS 2041	3
American Literature	50	AML 2010	3
Analyzing and Interpreting Literature	50	No direct equivalent	3
Biology, General	50	BSC 1005 (No lab credit)	3
Business Law, Introduction to	50	BUL 2241	3
Calculus	50	MAC 2233	3
Chemistry, General	50	CHM 1020 or 1030 (no lab credit)	3
College Composition	50	ENC 1101 & 1102	6
College Composition Modular	50	ENC 1101 & 1102	6
Educational Psychology, Introduction to	50	EDP 2002	3
English Composition w/ Essay	50	ENC 1101	3
English Literature	50	ENL 2023	3
Financial Accounting	50	ACG 2021	3
French Language	50	FRE 1120	4
	50	FRE 1121 & 1121	8
Freshman Composition	50	No direct equivalent. Replaced by College composition	
German Language	50 - 59	GER 1120	4
	60	GER 1120 & 1121	8
History of the U.S. I: Early Colonization to 1877	50	AMH 2010	3
History of the U.S. II: 1865 to Present	50	AMH 2020	3
Human Growth and Development	50	DEP 2004	3
Humanities	50	HUM 2210	3
Info. Systems & Computer Applications	50	CGS 1160 or 1162	3
Macroeconomics, Prin.	50	ECO 2013	3
Management, Prin. of	50	MAN 3025	3
Marketing, Principles of	50	MAR 3023	3
Mathematics, College	50	MGF 1106 or 1107	3
Microeconomics, Prin. of	50	ECO 2023	3
Natural Science	50	No direct equivalent	
Precalculus	50	MAC 1147	4
Psychology, Introductory	50	PSY 2012	3
Social Science and History	50	Nodirect equivalent	
Sociology, Introductory	50	SYG 2000	3
Spanish Language	50 - 62	SPN 1120	4
	63	SPN 1120 & 1121	8
Trigonometry	50	MAC 1114	3
Western Civilization I: Ancient Near East to 1648	50	EUH 3100	3
Western Civilization II: 1648 to Present	50	EUH 3120	3

International Baccalaureate	Passing Score	FAMU Equivalent	Min. # Credit Hrs.
Biology	4	BSC1005C or BSC 1005/1005L	4
	5 or higher	BSC 1005C & 1010C or	

		BSC 1005/1005L & BSC 1010/1010L	8
Business and Management	4	GEB 1011 or MAN 3010	
Chemistry	4	CHM 1020C or CHM 1020/1020L	4
	5 or higher	CHM 1020C & CHM 1045C or CHM 1045/1045L	8
Computer Science	4	CGS 2060	3
Computer Science	5 or higher	CGS 1162 & 2060	6

Advanced Placement Exam	**Passing Score**	**FAMU Equivalent**	**Min. # Credit Hrs.**
Design Technology	4	ETI 2410	3
	5 or higher	ETI 2410 & 2411	6
Economics	4	ECO2013	3
	5 or higher	ECO 2013 & 2023	6
Ecosystems and societies	4	EVR 1001	3
	5 or higher	EVR 1001 & 3017	6
English A1	4	ENC 1101	3
	5 or higher	ENC 1101 & 1102 or LIT 2110 & 2120	6
Environmental Systems	4	ISC 2050	3
	5 or higher	ISC 2050 & 3051	6
Film Studies	4	FIL 2001	3
	5 or higher	FIL 2001 and 2400	6
French Language	4	FRE 1120 & 1121	8
	5 or higher	FRE 1120, 1121 & 2200	12
Further Mathematics (Advanced Mathematics)	4	MHF 2202	3
Further Mathematics (Advanced Mathematics)	5 or higher	MHF 2202 & 2209	6
Geography	4	GEO 2000	3
Geography	5 or higher	GEO 2000 & 3222	6
German	4	GER 1120 & 1121	8
	5 or higher	GER 1120, 1122 & 3300	12
History	4	WOH 1012	3
	5 or higher	WOH 1012 & 1022	6
Italian	4	ITA 1120 & 1121	8
	5 or higher	ITA 1120, 1122 & 3300	12
Latin	4	LAT 1120	4
	5 or higher	LAT 1120 & 1122	8
Marine Science	4 or higher	BSC1011C or BSC 1011/1011L	4
Math Methods	4	MAC 1105	3
	5 or higher	MAC 1105 & 1140 or MAC 1140 & 2233	6
Math Studies	4	MAT 1033	3
	5 or higher	MAT 1033 & MGF 1106	6
Mathematics	4	MAC 1147	4
	5 or higher	MAC 1147 (or 1140, or 1114) & 2233 or MAC 2233 & 2311	7

Advanced Placement Exam	**Passing Score**	**FAMU Equivalent**	**Min. # Credit Hrs.**
Music	4	MUL 2111	3
	5 or higher	MUL 2111 & MUT 1001	6
Philosophy	4	PHI 2010	3
	5 or higher	PHI 2010 & 21016	
Physics	4	PHY 2053C or 2053/2053L	4
	5 or higher	PHY 2053C & 2054 or PHY 2053/2053L & PHY 2054/2054L	8
Psychology	4	PSY 2012	3
	5 or higher	PSY 2012 & DEP 2004	6
Social and Cultural Anthropology	4	ANT 2410	3
	5 or higher	ANT 2000 & 2410	6
Spanish	4	SPN 1120 & SPN 1121	8
	5 or higher	SPN 1120, SPN 1121 & SPN 2220	12
Theatre Arts	4	THE 2000	3
	5 or higher	THE 2000 & 3112	6
Visual Arts	4	ART 2300C	3
	5 or higher	ART 2300C & 2301C	6

Cambridge AICE (British) AS-Level and A-Level Passing Score of "A", "B", "C", "D", "E"

	Passing Score	**FAMU Equivalent**	**Min. # Credit Hrs.**
Accounting	AS-Level	ACG 2021	3
	A-Level	ACG 2021 & 2022	6
Art and Design	AS-Level	ART 1201C	3
	A-Level	ART 1201C & 1202C	6

Biology	AS-Level	BSC1005C or BSC 1005/1005L	4
	A-Level	BSC 1005C & 1010C or BSC 1005/1005L & BSC 1010/1010L	8
Business Studies	AS-Level	GEB 1011 or MAN 3010	3
	A-Level	GEB 1440 & 1441	6
IChemistry	AS-Level	CHM 1020C or CHM 1020/1020L	4
	A-Level	CHM 1020C & CHM 1045C or CHM 1045/1045L	8

Cambridge AICE (British) AS-Level and A-Level Passing Score of "A", "B", "C", "D", "E"

Classical Studies	AS-Level	LIT 3115	3
Computing	AS-Level	CGS 2060	3
	A-Level	CGS 1162 & 2060	6
Design Technology	AS-Level	ETI 2410	3
	A-Level	ETI 2410 & 2411	6
Economics	AS-Level	ECO2013	3
	A-Level	ECO 2013 & 2023	6
English Language or Language & Literature in English	AS-Level	ENC 1101	3
English	A-Level	ENC 1101 & 1102 or LIT 2110 & 2120	6
English - Literature in English	AS-Level	ENC 1101 or 1102	3
English - Literature in English	A-Level	ENC 1101 & 1102 or LIT 2110 & 2120	6
Environmental Systems	AS-Level	EVR 1001 or ISC 2050	3
French Language	AS-Level	FRE 1120 & 1121	8
French Literature	AS-Level	FRW 3100	3
French	A-Level	FRE 2200 & 2201	6
Further Mathematics (Advanced Mathematics)	A-Level	MAC 2311 & 2312 or STA 2023	8
General Paper	IDS 3040		3
Geography	AS-Level	GEA 2000	3
	A-Level	GEO 2000 & 3222	6
German	AS-Level	GER 1120 & 1121	8
	A-Level	GER 1120, 1122 & 3300	12
History - The History of the USA, c. 1840-1968	AS-Level	AMH 2010	3
History - Modern European History, 1789-1939	AS-Level	EUH 3100	3

Cambridge AICE (British) AS-Level and A-Level Passing Score of "A", "B", "C", "D", "E"

History - International History, 1945-1991	AS-Level	WOH 1012	3
Latin	AS-Level	LAT 1120	4
Marine Science	AS-Level	BSC 1010C or BSC 1010/1010L	4

Passing Score	**FAMU Equivalent**	**Min. # Credit Hrs.**
Marine Scoemce A-Level	BSC 1010C & BSC 1011C or BSC1010/1010L & BSC1011/1011L	8
Mathematics AS-Level	MAC 1147 or 1140 or 1114	4
A-Level	MAC 2233 & 2311	7
Music AS-Level	MUH 2051	3
A-Level	MUH 2051 & 3211	6
Physics AS-Level	PHY 2053C or 2053/2053L	4
A-Level	PHY 2053C & 2054 or PHY 2053/2053L & PHY 2054/2054L	8
Psychology AS-Level	PSY 2012	3
A-Level	PSY 2012 & DEP 2004	6
Sociology AS-Level	SYG 2000	3
A-Level	SYG 2000	3
Spanish Language AS-Level	SPN 2220	3
Spanish		

Literature	A-Level	SPW 3100	3
Spanish	A-Level	SPN 2220 & 2221	6
Thinking Skills	AS-Level	PHI 2010	3
	A-Level	PHI 2010 & 21016	
Travel and Tourism	AS-Level	HFT 1000	3
	A-Level	HFT 1000 & MAN 3010	6

DSST Examinations
(DANTES Subject Standardized Test)

	Score (New passing Score = 400)	**FAMU Equivalent**	**Min. # Credit Hrs.**
A History of the Vietnam War	44	AMH 2000	3
Art of the Western World	48	ARH 2000 or 2050	3
Astronomy	48	AST 1002	3
Business Ethics and Society	400	GEB 1440	3
Business Law II	44	BUL 2241	3
Business Math	48	QMB 2100	3
Criminal Justice	49	CCJ 2010	3
Drug and Alcohol Abuse	49	HSC 1100	3
Environment and Humanity	46	ISC 1001 or 1006C or EVR 1001	3
Ethics in America	46	PHI 3601	3
Foundations of Education	46	EDF 1005	3
Fundamentals of College Algebra	47	MAT 1033	3
Fundamentals of Counseling	45	FAD 2230	3
General Anthropology	47	ANT 2000	3
Here's to Your Health	48	HSC 1100	3
Human Resources Management	48	MAN 3010	3
Human /Cultural Geography	48	GEO 1200	
Introduction to Business	46	GEB 1011	3
Introduction to Computing	45	CGS 1060 or CGS 1062	3
Introduction to Law Enforcement	45	CCJ 2010	3
Introduction to the Modern Middle East	47	ASH 3010	3
Introduction to World Religions	48	REL 2300	3
Lifespan Developmental Psychology	46	DEP 2004	3
Management Information Systems		MAN 2812	3
Money and Banking	48	ECO 3213	3
Organizational Behavior	48	INP 2002	3
Personal Finance	46	FIN 3100	3
Physical Geology	46	GLY 2001	3
Principles of Finance	49	FIN 3403	3
Principles of Financial Accounting	49	ACG 2021	3
A History of the Principles of Physical Science I	47	PSC 1121	3
Principles of Public Speaking	47	SPC 2600	3
Principles of Statistics	48	STA 2023	3
Principles of Supervision	46	MNA 2300	3

Rise and Fall of the Soviet Union	45	EUH 3571	3
Substance Abuse	49	HSC 1100	3
Technical Writing	46	ENC 2210	3
The Civil War and Reconstruction	47	AMH 2020	
Western Europe Since 1945	45	No recommendation	

Excelsior College Exam

	Passing Score	FAMU Equivalent	Min. # Credit Hrs.
Abnormal Psychology	C or higher	CLP 4142	3
Calculus*	C or higher	MAC 2311	4
College Writing*	C or higher	ENC 1101	3
Earth Science	C or higher	GLY 2001	3
English Composition	C or higher	ENC 1101 or 1102	3
Ethics: Theory and Practice	C or higher	PHI 3601	3
Foundations of Gerontology	C or higher	GEY 2000	3
Human Resources Management	C or higher	MNA 2300	3
Introduction to Music	C or higher	MUH 2011	3
Labor Relations	C or higher	ECP 3214	3
Life Span Developmental Psychology	C or higher	DEP 2004	3
Managerial Accounting	C or higher	ACG 2071	3
Microbiology	C or higher	MCB 2004	3
Principles of Marketing	C or higher	MAR 3023	3
Psychology of Adulthood and Aging	C or higher	DEP 2004	3
Spanish Language*	C or higher	SPN 1120	4
Workplace Communication with Computers	C or higher	OST 1100	3
World Conflicts Since 1900	C or higher	WOH 1021	3

* Examination developed jointly by Excelsior and Pearson (UEXCEL)

Note: A maximum of 30 semester hours of credit by-examination may be transferred. Credits earned on similar courses taken at FAMU or other examinations (e.g., AP, CLEP, IB, DSST, or Excelsior) may not be accepted or duplicated.

Experiential Learning: Awarding Credit on a Non-Credit Basis -The University considers experiential learning as learning that occurs outside its own educational programs. Other than awarding credit through mechanisms such as nationally recognized credit by exams such as CLEP (see above) and departmental exams and the award of credit for attainment of National Board Teacher Certification, FAMU does not award credit for experiential learning.

The only experiential learning for which the University grants credit is for formal learning experiences that are part of the curriculum of a degree program, such as internships, clinical courses, cooperative education and practicum. These experiences are supervised by program faculty in collaboration with supervisors at the internship/clinical site and are evaluated if credit is to be awarded.

Military Transfer Credit

Florida A&M University is a member of SOC (Service members Opportunity Colleges). SOC members work to make it easier for servicemen and women to transfer credits and reduce residency requirements.

Military Transfer Credit may be awarded for undergraduate students who served in the United States Military and who desire to have their military training and experience considered for transfer credit. These undergraduate courses may be used toward a degree program, if applicable. Students must submit official AARTS or SMART transcripts to the Office of the University Registrar

Acceptance of Military Credit toward student's degree program may

- Affect financial aid eligibility
- Not be considered as excess credit hours.

How to Get Your Transcript

ARMY - Soldiers may request their military transcript through the Army American Council on Education Registry Transcript System (AARTS) at http://aarts.army.mil. AARTS will send an official transcript to Florida A&M University. It will not mail a transcript for personal records, but you can view and print your transcripts online anytime.

NAVY AND MARINE CORPS Sailors and Marines can access their transcript through the Sailor/Marine American Council on Education Registry Transcript (SMART) at www.navycollege.navy.mil/transcript.html. SMART will also include additional

college courses that you completed if you send transcripts to them. It's helpful because it keeps your education information all in one document.

SMART and AARTS transcripts contain only enlisted service training and education achieved on duty. Officers or warrant officers can request certain documents and work with their educational institution to receive college credit. The SMART/AARTS services are free and servicemen/women may request as many copies as they want.

Additional Information for Veterans

Florida A&M University is approved for the education and training of veterans, disabled veterans, and dependents of deceased and disabled veterans.

A prospective student who may be eligible for educational benefits under any Veterans Administration Program is urged to contact the Department of Veterans Affairs Atlanta Regional Office, P.O. Box 100022, Decatur, Georgia 30031-7022, at least three months before his or her enrollment at Florida A&M University. Once the Veterans Administration has approved the educational benefits, and the student has received a "Certificate of Eligibility," the student should then contact the Veterans Affairs office at FAMU prior to enrollment at FAMU.

All students receiving VA Educational Benefits are required to attend classes regularly, in accordance with the university attendance policies. When a veteran is found in violation of the class attendance regulation, the veteran's affairs office will be notified that the training period has been interrupted or discontinued. All students receiving veteran's benefits are required to take only those courses leading to a specific degree program. Students are required to request certification for VA benefits, as this is not an automatic process. Veterans needing assistance with fee payment should contact the FAMU Veterans Affairs Office during the registration period.

Any changes in the number of hours being carried (particularly any courses dropped) may affect the rate of educational allowance payable and must be reported in the month in which such changes occur. No benefits are paid for a "W" grade. When a veteran completes, drops out, or interrupts his or her course of training, he or she is required to notify the Veterans Affairs Office. Failure to do so in a timely manner could result in a payback to the Veterans Administration because of an overpayment.

P.L. 634 War Orphan Educational Assistance Act of 1956 - This law applies to those children whose parent(s) dies or is 100% disabled as a result of service connected disability. Students should contact their local VA Office in order to make application for admission under Public Law 634.

Physical Education - Veterans who have had basic training in the regular Armed Services may receive credit for physical education as a required course. Application must be made to the university registrar. Sufficient evidence of having served in a branch of the service must be shown (DD-214 form).Veterans' training, conduct, and progress must at all times conform to the university standards.

Standards of Academic Progress for Veteran Students

VA Undergraduate Students - All students receiving VA Educational Benefits are required to attend classes regularly, in accordance with the university attendance policies. All students receiving veteran's benefits are required to take only those courses leading to a specific degree. Students are to request certification for VA Benefits, as this is not an automatic process. Veterans needing assistance with fee payment should contact FAMU VA Office (FHAC 114) during the registration period to apply for a VA Deferment. Please call (850) 599-3853 if you need additional information.

VA benefits will be subject to termination for those students who fail to maintain an overall 2.00 GPA. This also applies to VA students who have been placed on academic probation for two consecutive terms or suspension at the end of an academic term. Please understand that University policy will not allow you to enroll if you are on academic probation until you have met with your academic advisor and devised an academic plan; however, your VA benefits will be subject to termination as stated above.

VA Graduate Students - A student receiving veteran benefits must attain and maintain a minimum grade point average (GPA) of not less than 3.00 "B" each semester of enrollment. A student who has not attained and maintained satisfactory progress (3.00 or above) at the end of any semester will be placed on academic probation for the next semester of enrollment. Should he or she not attain satisfactory progress by the end of the next semester of enrollment, the student's educational benefits will be terminated for unsatisfactory progress.

A student whose educational benefits have been terminated for unsatisfactory progress may petition the Office of Veteran Affairs to be re-certified after one semester has elapsed. This office may re-certify the student for educational benefits only if there is a reasonable likelihood that he or she will be able to attain and maintain satisfactory progress for the remainder of the program.

Professional Certification/Departmental Exams/Deans Waiver-Academic departments may offer students opportunities to receive credits through departmental course examinations. Individual departments determine if and when a student can take advantage of this opportunity. Academic deans may determine if course/courses may be waived or if credit may be awarded for students based on professional certification and documented proficiency in an area of study. Such waiver and/or credit must be approved by the academic Department Chair, Dean, Registrar and Provost. In the case of academic credit being awarded to students with National Board Teacher Certification, the department chair and dean of the College of Education must evaluate the certificate and portfolio for the National Board Teacher Certification. The Dean and Department Chair will make a formal recommendation to the Registrar who will award elective credit in a specific academic area within the College of Education. The recommendation from the College of Education must contain a statement that attests to the fact that the National Board Teacher Certification certificate and portfolio have been evaluated by appropriate officials within the College of Education.

Graduate/Professional (Law) Students-FAMU also accepts transfer credits for graduate students where the transfer of graduate level courses must be determined by the individual academic departments. A maximum of six graduate level credit hours with a grade of "B" or better may be accepted from a regionally accredited institution. Additionally, six credit hours of elective credits may be granted to students who are fully admitted to graduate degree status in the College of Education for possession of National Board Teacher Certification. A maximum of six semester hours of 4000 level courses may be included in the requirements for a graduate degree of Education. The above also applies to students enrolled in the Specialists, Law and Doctoral Programs (excluding the PharmD).

Course Designation
Courses are identified with an alphabetic and numeric coding system. The alphabetic abbreviation (which is composed of three letters) identifies the FAMU academic area (i.e., ENC = English), and the numbers have the following meaning: 1000 series-freshman level courses; 2000 series-sophomore level courses; 3000 series-junior level courses; 4000 series-senior level courses; 5000 series and above- professional or graduate level courses.

Credit Hour Definition
Credits for all courses are expressed in semester hours. One semester hour is the amount of credit earned for the satisfactory completion of one hour a week lecture or recitation or two hours a week laboratory practice throughout one semester. One semester hour is the equivalent of one and one-half quarter hours. All courses offered by Florida A&M University, whether main campus or off-campus, are considered residence credit.

Classification of Students
Undergraduate students not enrolled as Non-degree seeking students are grouped in four classes according to total credits earned in semester hours on their record in the Office of the University Registrar:

i. Freshman-earned 0 to 29 semester hours
ii. Sophomores-earned 30 to 59 semester hours
iii. Juniors-earned 60 to 89 semester hours
iv. Seniors-earned 90 or more semester hours
v. Professional students must be fully admitted to the pharmacy and law program
vi. Graduate Students-earned the bachelor's degree from an accredited institution and/or meet the university's requirements for admission to graduate studies (for further details, see graduate admissions requirements elsewhere in this catalog for admission to the department.
vii. Non Degree Seeking-those not admitted to a regular degree program.

Grading Policy
(F.S. 1001.74(4) Florida A&M University Rule 4.101)
The University supports its grading system which is based upon the integrity of a grade earned in a course. The University Registrar is the official custodian of student grades and is responsible for recording approved grade change requests.

Assignment of Grades
1. Grades are assigned at the end of the term in which the student was registered for the course.

2. Due to extenuating circumstances beyond the control of the student, a grade of "I" may only be assigned if the student is passing the course, but has not completed all of the required work by the end of the term. Grades of "I" may not be assigned in any course that a student withdraws from, has excessive absences in, or fails to attend.

3. A grade of "PN" will be assigned when a student is passing a course, but is not proficient. The use of the "PN" grade is only approved for courses in the Physical Therapy Graduate Program.

4. A student receiving an "I" or "PN" grade should not re-enroll in the course until after the "I" or "PN" grade has been permanently changed to a letter grade.

Change of Grade
Changes of grades may only be accomplished under special circumstances and are governed by the following guidelines:

1. Grade changes pertaining to a grade of "I" or "PN" must be submitted by the end of the next term in which the student is enrolled. An "I" grade that is not changed by the specified time will revert to an "F." A "PN" grade that is not changed by the specified time will revert to the grade earned by the student at the time the "PN" was assigned.

2. All grade changes resulting from a grade appeal must be submitted within one semester of the issuance of the grade.

3. Any other grade changes must be made within one semester of when the grade was initially assigned.

Procedure Governing the Process of Changing Recorded Grades
Grade changes can only be made for the following reasons:

1. When it is determined that a grade was recorded in error;
2. When removing "I" or "PN" grades; or

3. As a result of a student's successful appeal of a grade.

Academic units wishing to request grade changes must submit

a "Grade Change and Academic Record Update Form" to the Registrar's Office for processing. The form must contain the signature of the respective academic Dean in order to be processed.

Grading System and Grade Point Average
The quality of work done by students is indicated by the letter of the alphabet as follows:

A (Exceptional)
B (Superior)
C (Average)
D (Passing but poor)

F (Failure)
S (Satisfactory)
N (No grade reported)
U (Unsatisfactory)
I (Incomplete)
IP (In Progress)
X (Audit)
TP (Thesis pending)
DP (Dissertation pending)
P (Pass),
PN (Passing, Not Proficient)
W (Withdrew)
WF (Walked-away failure)

Calculation of Grade Point Average
The Student Information System (PeopleSoft) is coded to calculate a student's term GPA by dividing the number of grade points earned by the number of hours attempted for GPA. Similarly, the cumulative GPA is determined by dividing the total number of grade points earned by the total number of hours attempted for GPA. The system performs this function automatically each time any change is made to a student's grade in PeopleSoft.

A grade of "A" earns four grade points for each hour of credit; "B" earns three grade points; "C" earns two grade points; "D" earns one grade point; "WF" and "F" earn no grade points; and "X" earns no grade points.

Procedure for Assigning Incomplete Grades
Due to extenuating circumstances beyond the control of the student, an incomplete grade may be assigned if the student was passing as determined by the instructor.
A student who is passing a course but has not completed all of the required work due to extenuating circumstances by the end of the term may, with the permission of the instructor, be assigned a grade of "I". Grades of "I" are not assigned to any course that a student fails to attend

Before an incomplete grade is assigned, the Instructor determines exactly what work remains to be completed and inputs this information in the system when he/she assigns the grade. FAMU has established a grade control operation such that when an instructor enters final grades at the end of the semester, and selects incomplete grade, the system prompts him/her to select the reason for the incomplete grade and to enter additional information in a provided field (comment box) briefly describing the work to be completed by the student in order to have the incomplete grade converted to a letter grade.

A student should not re-register for a course(s) in which incomplete grades have been received.

Incomplete grades will not count as hours attempted in computing cumulative grade point averages. It is the responsibility of the student to make arrangements with the instructor for the removal of an incomplete grade. All incomplete grades must be removed by the last day of classes of the term in which the student is next enrolled, or the grade will be changed to "F".

At the end of the semester after grades are posted, the Registrar's office runs a report listing all incomplete grades assigned, reasons for assigning them, and outstanding work for the student as stated by the instructor. This will assist the academic deans and department chairs in tracking and monitoring grade changes.

Other Grade Notes
The grade of "W" is used only to denote that a student withdrew (or was withdrawn) from the course or from the university.

Certain courses may be approved by the academic dean for satisfactory-unsatisfactory (S-U) grades. Such courses would normally be outside a student's major and minor fields and would not be included in the grade point average. An "N" grade will be changed to a permanent grade upon receipt of an official grade from the instructor.

Graduate students who are writing a thesis or dissertation may receive the grade of "TP" (Thesis Pending) or "DP"(Dissertation Pending) if approved by their major professor. Once the Thesis or Dissertation is successfully defended, the assigned grade must be an "S" (Satisfactory).

A graduate student in the Doctor of Physical Therapy program who is preparing for Clinical Education may receive the grade of "PN" (Passing, Not Proficient) approved by the instructor of record if he/she is passing the course but have not achieved proficiency necessary to participate in the clinical experiences. The "PN" is a temporary grade. Once it is determined that the student has successfully achieved acceptable proficiency level, the appropriate grade must be recorded.

Undergraduate Course Forgiveness Policy

An undergraduate student may improve his/her grade point average at Florida A&M University by repeating an undergraduate course (1000-4999 level). Only the grade and grade points received in the final attempt shall be used in computing the student's cumulative grade point average. A student must petition to have this policy applied. Only three such requests are available to the student during the student's undergraduate career. A student may apply the forgiveness policy to the same course up to the limit of three times or apply the forgiveness policy to three different courses. Under extenuating circumstances, with compelling justification, a student's academic Dean may recommend an exception (limited to two additional attempts). All grades earned after exceeding the repeat limits will be used in computing the student's cumulative grade point average. All attempts for a given course and all grades will remain on the student's transcript. Excess hours are calculated on all attempted hours, including those for which the grade is forgiven.

In accordance with accreditation requirements, FAMU-FSU College of Engineering does not allow grade forgiveness and therefore the policy cannot be applied to engineering students. This also pertains to students who change majors to the College of Engineering.

The forgiveness policy cannot be applied for students;

- In Pharmacy during professional years

- Taking courses with numbers 5000-8999 (graduate level courses)
- After the degree has been conferred.

(See Graduate handbook for graduate student forgiveness policy).

UNIVERSITY AND COURSE WITHDRAWALS

Withdrawal from the University

(Regulation of Florida A&M University 2.007)

(1) A student who desires to voluntarily withdraw from the University must report to his or her assigned academic advisor and explain the circumstances which he/she feels necessitates the withdrawal. If the request is approved, a Request for Withdrawal Form (Official University Withdrawal Form), which is incorporated herein by this reference, will be completed and signed by the student, academic advisor, academic department chair and academic dean. The Withdrawal forms are available at the Registrar website

(2) Once the withdrawal process has been initiated, the student is required to complete the Housing and Rattler Card Office cancellation forms. The student must relinquish all residence hall keys to the Residence Hall Director and his/her meal plan card to the Office of Auxiliary Services after completing the appropriate cancellation forms. The withdrawal form must then be submitted to the Office of the Registrar. Advisors should also refer students to the Office of Financial Aid for an exit interview if the student receives Financial Aid.

(3) No student will be permitted to file a Withdrawal Form within the last five weeks of the semester without receiving failing grades, unless unusual circumstances, as determined by the University Withdrawal Committee, are established.

(4) Any student who voluntarily withdraws from the University during the registration or late registration period will not receive grades at the end of the semester. Those who officially withdraw after the last day to register will receive a grade of "W" at the end of the semester. A grade of "WF" for each course will be assigned to any student who leaves the University without filing the Withdrawal Form with the University Registrar.

(5) Advisors should refer students to Counseling Services for post-enrollment treatment referral if the student shows evidence of psychological distress.

Withdrawal from a course(s) - Withdrawal from a course must be accomplished prior to the published deadline. A machine printed "W" will appear on the class roll/grade roll for all courses for which a student has been withdrawn. No refund of fees is made.
Administrative Withdrawal- A student may be administratively withdrawn with fee liability from a course(s) by the academic department if the student registered for the course without appropriate signature or permission. Students who are administratively withdrawn from the University for violation(s) of the University's Student Code of Conduct are not entitled to any refund from any fees paid during the semester in which there is cause for withdrawal.

Involuntary Administrative Withdrawal - A student will be subject to involuntary administrative withdrawal from the University, or from University housing, if it is determined by the Dean of Students that the student is suffering from a mental disorder as defined by the current edition of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders and as a result of the mental disorder. (Regulation 2.007).

University Withdrawal Committee- Student may petition the University Withdrawal Committee for a retroactive (after the published term withdrawal deadline) term withdrawal based on documented circumstances beyond the student's control within 12 months after the end of the term for which the withdrawal is sought. Students seeking retroactive course withdrawal should report to the Registrar's Office for further direction. Students should be aware that requests for withdrawal and retroactive term withdrawals will negatively impact the award of current and future financial aid as well as enrollment status for the affected term. Additionally, withdrawals are considered attempts and may incur excess credit surcharges. Please see Excess Credit Hours information elsewhere in this publication.

Return of Tuition funds

Regulation of Florida A&M University 3.009 (5)

Tuition refunds are calculated on a course by course (per credit hour) basis. Students who are enrolled and then withdraw may not receive a refund. Refunds will be computed based on the actual withdrawal date certified by the Office of the Registrar. Refunds will not be made to students who do not attend class and have not completed the required withdrawal procedure. Terms in the student housing contract will determine the refund of room rent; whereas board will be prorated based on the approved date of cancellation. Refund processing is approximately two to four weeks.

(a) Students who officially withdraw prior to the end of the drop/add period and have completed the required withdrawal procedure will be entitled to 100 percent of the tuition assessed or adjustment for waivers.

(b) Students who officially withdraw prior to the end of the fourth week of classes and have completed the required withdrawal procedure will be entitled to 25 percent of the tuition assessed or adjustment for waivers, less building and capital improvement fees.

(c) Students who officially withdraw at an appropriate time as designated by the University for Summer sessions and have completed the required withdrawal procedure will be entitled to 25 percent of the tuition assessed or adjustment for waivers, less building and capital improvement fees.

(d) Exceptions to the refund policy are made only in rare instances. Written application for an exception must be filed with the Office of Student Financials and addressed to the Refund/Waiver Appeals Committee. If a student withdraws or drops one or more credit courses due to circumstances determined by the University to be exceptional and beyond the control of the student, the student will be entitled to 25 to 75 percent of the tuition assessed or adjustment for waivers.

Exceptions include but are not limited to:

1. Illness of a student of such severity or duration, as confirmed in writing by a physician, to preclude the completion of the course(s);

2. Death of the student or death in the immediate family (parent, stepparent, spouse, child, sibling, or grandparent);

3. Involuntary call to active military duty; or

4. A situation in which the University is in error. The amount of a payment in excess of the adjusted assessment will be refunded.

(e) A written appeal for a refund or other appeal action must be submitted to the University within six (6) months of the close of the semester to which the refund or other appeal action is applicable.

(f) Pursuant to Public Law 102-325, the Higher Education Amendments of 1992, and notwithstanding the provisions of subsection (5) and paragraph (5) (a) above, for the first term in which students are enrolled at the University for the first time, a pro-rata refund of tuition, fees, room and board, and other charges shall be made as required by Public Law 102-325.

Academic Regulation Appeals Committee Petitions
The Academic Regulation Appeals Committee considers petitions from undergraduate students seeking exceptions to the academic regulations stated in the FAMU Catalog. The following type of appeals may be filed:

• Late or retroactive course withdrawal (limited to one year after course enrollment)
• Late add or registration (limited to the end of current semester)
• Late application for graduation (limited to four weeks after the published term deadline)

NOTE: Supporting documentation must accompany all appeal petitions.

Appeal requests must be picked up from college/school of your major. Non-degree seeking students must petition through the Registrar's Office. Colleges are not responsible for petitions that are not submitted directly to and discussed with the proper college representative. The Academic Regulation Appeals Committee normally meets monthly. In order for a petition to be reviewed by a college/school and to be heard at a regular meeting, it must be submitted by the end of the first week of each month.

Graduation Requirements and Procedures
Associate Degree Requirements
The associate in arts (A.A.) certificate may be granted upon formal written application to the Office of Retention for students who have completed a minimum of 60 semester hours with a 2.0 grade point average or above and successfully completed) General Education sequence and Gordon Rule courses. The last 30 semester hours must have been earned at FAMU. Beginning with students initially entering the university in 2014-2015 and thereafter, coursework for an associate in arts degree shall include demonstration of competency in a foreign language pursuant to s. 1007.262. Except for developmental education required pursuant to s. 1008.30, all required coursework shall count toward the associate in arts degree or the baccalaureate degree

Bachelor's Degree Requirements
To qualify for a bachelor's degree in an academic discipline specified in this catalog, the student must have;

- Earned a minimum cumulative Grade Point Average of 2.00
- Completed Gordon Rule requirements (see list of approved courses elsewhere in this publication)
- Completed General Education requirements (see list of approved courses elsewhere in this publication)
- Completed Foreign Language requirement (see suggested courses elsewhere in this publication)
- Satisfied the Summer term attendance requirement - minimum of 9 semester credits
- Completed at least 30 semester credit hours at FAMU. At least 25% of the credit hours required for an undergraduate degree program must be earned through instruction offered by FAMU. The university requires at least two semesters completed in residence for any degree and the last 30 hours must be earned in residence. If the term of residence is only two semesters, that period must be the student's senior year, provided at least 30 semester hours are earned at FAMU during this period.

Petitions for a waiver of up to six hours of the last 30 hours in residence, due to a documented hardship or unusual circumstance, may be submitted through the student's academic advisor, chair or program leader to the dean or director for consideration. Only waivers approved by the dean or director are valid. Courses taken while on university sponsored study abroad programs count as residency requirement for graduation purposes.

- General and specific degree requirements are listed elsewhere in this catalog.
- Students must complete the "Student Intent to Graduate" form and submit to the department or division Chairperson immediately prior to or at the beginning of the term in which degree requirements are expected to be met.

- Successful applicants must have earned at least a "C" average in all work attempted toward the degree.
- The applicable degree with the appropriate major will be awarded, upon the recommendation of the faculty, department and the dean of the college or school in which the student is enrolled.
- Student must have completed a minimum of 120 semester required hours, which must include satisfactory completion of all State of Florida/institutional undergraduate requirements, and curriculum requirements.

Note: Some academic areas require more than 120 hours for graduation. In addition, a student who changes his or her major may have to earn more than 120 hours in order to meet requirements for graduation.

Important: Credit hours in excess of 144 may incur extra charges. See information on Excess credit hours surcharge in this publication or on the Registrar web page (www.famu.edu/Academics/Registrar/)

Bachelor of Arts Degree Requirements
To qualify for a Bachelor of Arts degree all requirements listed above under the bachelor's degree requirement must be met, in addition to completing 12 semester hours in the (same) foreign language. Contact your academic department for details.

Second Bachelor's Degree
A student who wishes to receive two baccalaureate degrees in the same semester must (1) declare double majors, (2) complete the prescribed degree requirements of each program, and (3) complete a minimum of 150 semester hours (30 hours must be taken in residence). Departments and colleges may have additional requirements. Students are advised to consult their academic advisor or department chair for departmental requirements. Students must complete an application for graduation online for each major. If a student holding a bachelor's degree from FAMU wishes to obtain a second bachelor's degree the student must earn a minimum of 30 semester hours after the requirements for the previous bachelor's degree.

Foreign Language Requirements
All undergraduate students are required to have two years of Foreign Language study prior to graduation with a bachelor's degree from Florida A&M University. Two years of Foreign Language study is defined as 2 units in high school or eight to ten (8-10 credits with grade "C" or higher) semester hours in one Foreign Language or American Sign Language - French, Spanish language and Literature, Arabic, Japanese, German, Chinese, and American Sign language at Florida A&M University or another accredited College/University. Students may meet this requirement by successfully demonstrating equivalent foreign language competence on the basis of scores determined by the Articulation Coordinating Committee (ACC) Credit-By-Exam Equivalencies as adopted by the Board of Governors; or demonstrating equivalent foreign language or American Sign Language competence through other means approved by the university. A student who demonstrates proficiency in a native language other than English may be exempt from the requirement of completing foreign language courses (1007.262 F.S.).

This requirement will not apply to transfer students (a) who received Associate in Arts degree prior to September 1, 1989, or (b) enrolled in a program of study leading to associate degree from a Florida College System institution and maintained continuous enrollment until they are admitted to a university prior to August 1, 1989.

Students who earned a bachelor's degree or higher from an accredited post-secondary institution prior to enrollment as students seeking second bachelor's degree are exempt from this requirement

Application for Graduation- A student who wishes to apply for graduation is encouraged to complete the 'Student Intent to Graduate' form and take it to his/her academic advisor, at least one semester prior to the one in which the student intends to graduate. Students will complete, print/forward "Student Intent to Graduate" form to their academic advisors prior to applying for graduation via iRattler on their Student Center page... This form is available at www.famu.edu/Registrar, click on Forms and Student Intent to Graduate. Students applying for the Associate in Arts Degree should forward completed "Student Intent to Graduate" forms to the Office of Retention.

Upon receipt of the "Student Intent to Graduate" form the academic advisor reviews student's academic record for graduation purposes. The department's business process for graduation reviews should be followed. If student is determined eligible to apply for graduation, the department Coordinator with appropriate access places a Positive Service Indicator ETA (Eligible to Apply) on the student. This enables student to submit the application online via iRattler prior to or at the beginning of the term in which a student expects to complete all requirements for a degree. Deadline dates are published on the university calendar. If a student fails to graduate, he or she should consult with his/her department, division chairperson or dean and reapply for a subsequent term.

Graduation Honors-Eligibility for graduation with honors for students seeking the Bachelors/Doctor of Pharmacy degree requires the following cumulative grade point averages: 3.70-4.00-Summa Cum Laude; 3.30-3.69-Magna Cum Laude; 3.00-3.29-Cum Laude. Transfer students must earn a minimum of 45 semester hours at FAMU in order to be eligible to graduate with honors. Students receiving the masters and doctor of philosophy degrees are excluded. The cumulative grade point average on file at the time of application for graduation (usually the term prior to the term in which the student intends to graduate) will be used to determine eligibility and designate graduation honors in commencement program. However, the student's final cumulative grade point average (usually the last term in which the student graduated) will be used to list the graduation honors on the student's final transcript.

Graduate or Professional Degree Requirements
Specific degree requirements for the Masters, Doctor of Pharmacy, Doctor of Philosophy and Juris Doctor (JD) are listed in the applicable graduate programs. Normally, 5000 level courses or higher may be counted toward a master's degree. Upon the recommendation of the division Chairperson and Dean, a maximum of six semester hours of 4000 level courses may be included in the requirements for a graduate degree. Students seeking second master's degree must complete 18-24 graduate semester hours beyond what is required for the first master degree. Please see the School of Graduate Studies and Research section of this publication for additional information on graduate degree requirements.

Transfer Credit-Graduate Degrees

A maximum of six credit hours from other institutions approved by their regional accrediting agency, with "B" grades or better may be allowed

1. Six semester hours may be allowed for extension credits provided such credits were earned through a Florida Institution with regional accreditation; or

2. Six semester hours may be allowed for workshop participation, in keeping with the regulation above; or
3. Six semester hours may be allowed for credits earned while in residence at another university; or
4. Up to six semester hours in any combination of the three categories above may be allowed.

Acceptance of such credit does not reduce the period of required residence for the master's degree. Workshops are not normally classified as residence work on or off campus. Credit toward the master's degree is not allowed for courses taken through correspondence.

Recency of Coursework

The requirements for the master's and doctoral degrees should be met within seven (7) calendar years. For work that has extended beyond the seven-year period, the student should contact his or her program director for a re-evaluation of his or her entire program. In this re-evaluation, additional courses may be required that will provide a well-rounded program.

Comprehensive Examination

As partial fulfillment of the requirements for the master's or doctoral degree, a candidate may be required by the division chairperson to pass a comprehensive examination in his or her major field. At the option of the division concerned, the examination may be written or oral. Doctoral students should consult their academic department and/or refer to specific degree requirements listed elsewhere in this catalog.

Residence

The residence requirements for the master's degree will be determined by the college or school within which the degree is offered. Students completing theses or dissertations must register each term until the degree is awarded.

Thesis/Dissertation

Students writing theses and dissertations are required to be enrolled. All candidates for the Master of Science degree and Doctor of Philosophy are required to submit an acceptable thesis or dissertation.

Some master's degree programs offer two types of programs: the thesis-type and the internship-type. With departmental approval, the student may choose the option he/she wishes to follow.

Transcript Release

Florida A&M University has authorized the National Student Clearinghouse to provide transcript ordering service online for our current students and alumni.

- You can order and/or track your transcripts 24 hours a day, 7 days a week
- You may choose to pick up your transcript in-person at the Registrar's Office - photo identifications will be required.
- You may choose to write a letter to authorize the release of your transcript(s) to a third party for pick up
- Order updates will be emailed to you along with text messages if you choose
- You may choose to upload documents (in PDF only) to accompany your transcript. This option is available when you place your order. Examples include Admission Application forms (for Law, Nursing, Medical, Graduate Schools), and Scholarship Application forms.
- The following is required to order a transcript online; (a) valid major credit card Your credit card will only be charged when we send your transcript(s); (b) an email account, (c) your signed consent

Note: The Clearinghouse does not have access to your academic history and does not print your transcript.

IMPORTANT:

1. All outstanding financial obligations to Florida A&M University must be satisfied before your transcript can be released. You may contact Student Financials services at 850-561-2950.

2. Transcripts may not be faxed due to security, data transmission, and privacy considerations.

3. Allow up to three working days for processing, except during the peak periods of on-campus registration, grade processing, and graduation. Alumni records dating back to 2004 or earlier may require additional processing time.

4. The cost for each transcript is $10.00.

5. Current Students: If you expect adjustments (forgiveness policy, grade changes, grade post, endorsements, or degree comments) on your transcript, please wait until the changes are reflected on your iRattler record

Transcript requests should include the following information:

- Name under which you registered
- Years of attendance and/or graduation year
- Number of transcripts desired
- Mailing address (or addresses)
- Contact telephone number and e-mail address
- Alumnus/Alumna's signature

Contact Information:

Please call our office 850-599-3115 Monday-Friday, 8am-5pm or e-mail (registrar@famu.edu) for additional information

The Family Educational Rights and Privacy Act of 1974

The Family Educational Rights and Privacy Act of 1974, most often referred to as FERPA, deals specifically with the education records of students, affording them certain rights with respect to those records. For purposes of definition, education records are those records which are:

1) Directly related to a student, and

2) Maintained by an institution or a party acting for the institution.

FERPA gives students who reach the age of 18 or who attend a post-secondary institution the right to inspect and review their own education records. Furthermore, students have other rights, including the right to request amendment of records and to have some control over the disclosure of personally identifiable information from these records.

FERPA applies to the education records of persons who are or have been in attendance in post-secondary institutions, including students in cooperative and correspondence study programs. FERPA does not apply to records of applicants for admission who are denied acceptance or, if accepted, do not attend an institution. Furthermore, rights are not given by FERPA to students enrolled in one component of an institution who seek to be admitted in another component of an institution.

The Policy

Florida Agricultural and Mechanical University (FAMU) shall comply with the Family Educational Rights and Privacy Act (FERPA, also known as the Buckley Amendment) – 20 U.S.C. ~ 1232g – of 1974, which gives enrolled students the right to:

i. Review and inspect their education records;
ii. Challenge and seek to amend education records that the student believes are inaccurate or misleading;
iii. Consent to disclosures of personally identifiable information contained in their educational records, except to the extent that FERPA allows disclosures without consent; and
iv. Complain to the U.S. Department of Education concerning alleged violations by FAMU of any such rights.

Pursuant to FERPA requirements, some personally identifiable student information, designated by law as "directory information," may be released to third parties by FAMU without prior consent of a student unless the student files a written request with the FAMU Office of the Registrar to restrict directory information access.

FAMU has designated the following as directory information:

- The name of a student who is in attendance or who has been in attendance
- The local, home address of a present or former student)
- The telephone number of a present or former student
- Date and Place of Birth of a present or former student
- The major field of study of a present or former student
- Dates of attendance
- Enrollment Status
- Participation in Officially Recognized collegiate sports
- Weight and height of athletes
- Degrees and academic honor awards received and pertinent dates
- Most recent educational institutions attended prior to FAMU

The following information is not considered directory information and may not be released or disclosed in any way (except to a school official with a legitimate interest, or to a third party with signed and dated consent from the student or former student):

- Student Identification Number
- Social Security Number
- Ethnicity/Nationality
- Gender

An enrolled student may select Privacy (refuse to permit disclosure of "directory information'). To do so, the student must notify the Office of the Registrar in writing if he/she refuses to permit the University to disclose such information. The University will not release any further disclosures of directory information about the student without the student's prior written consent except to the extent authorized by FERPA or other State or Federal laws.

All custodians of a student's education records and all University employees/agents shall comply with FERPA and follow strict practice that information contained in a student's education record is confidential and shall not be disclosed without the prior written consent of the student except as otherwise provided by FERPA. FERPA exceptions are outlined in the policy and procedures herein.

Regarding the disposition of records held pertaining to a deceased student, in accordance with FERPA, it is the policy of FAMU that the privacy interests of an individual expire with that individual's death.

FAMU publishes annually a notice of primary rights for enrolled students.

All University employees who manage or have direct or indirect access to student education records are held responsible for reading and understanding the policy. Furthermore, all employees who manage or have direct or indirect access to student education records are responsible for following security practices established by the University, Colleges, or departments.

The University Registrar has been designated as the FERPA Compliance Officer for the University. Further information about FAMU's policy and procedures with respect to privacy of student records may be obtained from the Office of the Registrar.

Location of Education Records

All information provided by a student to the University for the use in the educational process is considered part of the student's education record. Information may fall into one of the following categories:

- Admission records are located in the Office of Admissions and Recruitment, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Admissions and Recruitment, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Suite G-9, Tallahassee, FL 32307.
- Cumulative academic records are located in the Office of the Registrar, Foote-Hilyer Administration Center, and the custodian of such records is the University Registrar, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Room 112, Tallahassee, FL 32307.
- Financial aid records are located in the Office of Financial Aid, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Financial Aid, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Suite 101, Tallahassee, FL 32307.
- Student financial records are located in the Office

of Student Financial Services, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Student Financial Services, Florida Agricultural and Mechanical University, Suite G-7, Tallahassee, FL 32307.

• Student placement records are located in the Career Center, Student Union Plaza and the custodian of such records is the Director, Career Center, Florida Agricultural and Mechanical University, Student Union Plaza Suite 118, Tallahassee, FL 32307.

• College-based testing records are located in the Counseling and Assessment Center, and the custodian of such records is the Director, Counseling and Assessment, Florida Agricultural and Mechanical University, University Counseling Center, Tallahassee, FL 32307.

• College records are located in the college dean's office and/or departmental offices of each college and in faculty offices at each college or department and the custodian of such records is the appropriate dean, department chairperson, professor, instructor or advisor.

• Disciplinary records are located in the Office of Judicial Affairs, Student Union Plaza, and the custodian of such records is the Associate Vice President for Student Affairs, Florida Agricultural and Mechanical University, 308 FHAC, Tallahassee, FL 32307.

• Disability records are located in the Learning Development Evaluation Center, and the custodian of such records is the Director, LDEC, Florida Agricultural and Mechanical, Orr Drive, Suite 555, Tallahassee, FL 32307.

• International student records are located in the Office of International Services, HFFM, and the custodian of such records is the Provost, Florida Agricultural and Mechanical University, 301 Foote-Hilyer Administration Center, Tallahassee, FL 32307.

Excluded Records

While most student records maintained by the University are considered to be education records, those listed below are specifically excluded:

• Sole possession records or memory aids created and maintained for private use with limited access to anyone other than the creator;

• University Police records maintained solely for law enforcement purposes;

• University employment records for employment not dependent on student status and does not result in academic credit or a grade;

• Records created by a medical or mental health professional to be used only for providing treatment to a student;

• Alumni records if they contain only information related to an individual after the individual is no longer a student.

Legitimate Educational Interest

University officials shall have access to student education records for legitimate educational purposes when a need to know has been demonstrated by those officials who act in the student's educational interest. This includes faculty, administration, student employees, clerical and professional employees and other persons who manage student records information. Any school official who needs information about a student in the course of performing instructional, supervisory, advisory or administrative duties has a legitimate educational interest.

Exceptions to Student Consent for Release of Records

All custodians of a student's education records and other University employees/agents may not disclose student information to third parties without the student's prior written consent except as provided in this section:

• Under the following circumstances, University officials may make disclosures of personally identifiable information contained in the student's education records without the consent of the student:

(a) To officials of another college or university where the student seeks or intends to enroll on the condition that the institution makes a reasonable effort to inform the student of the disclosure unless the student initiates the transfer.

(b) To certain federal and state officials who require information in order to audit or enforce legal conditions related to programs at the University supported by federal or state funds.

(c) To parties who provide or may provide financial aid to the student.

(d) To an individual or organization under written contract with the University or FLDOE for the purpose of conducting a study on the University's behalf for the development of tests, the administration of student aid, or the improvement of instruction.

(e) To an outside contractor who is a "party acting on behalf of the University and is performing a service which the University would otherwise have to perform for itself."

(f) To accrediting organizations to carry out their accrediting functions.

(g) To parents of an enrolled student if the parents claim the student as a dependent under the Internal Revenue code of 1954. The University will exercise this option only on the condition that the evidence of such dependency is furnished to the University Registrar

(h) To comply with a lawfully issued subpoena or judicial order of a court of competent jurisdiction. The University will make reasonable effort to notify the student before the disclosure – unless otherwise noted by the judicial document.

(i) The result of a disciplinary proceeding may be released to the victim on the student's crime of violence.

(j) To comply with an ex parte order from the Office of the Attorney General (or designee)

(k) To state or local officials in compliance with state laws adapted prior to November 19, 1974.

• University officials are authorized to make necessary disclosures from student education records without the prior consent of the student in a health or safety emergency if the University official deems:

a. The disclosure to be warranted by the seriousness of the threat to the safety or health of the student or other persons; or

b. The information disclosed is necessary and needed to meet the emergency;

c. Time is an important and limiting factor in dealing with the emergency.

All requests for disclosure under the above circumstances, where the University may disclose personally identifiable information without the student's prior consent to third parties other than its own officials, will be referred to the University Registrar or the appropriate records custodian.

Parental Access

At the post-secondary level, parents have no inherent rights

to inspect a student's education records. The right to inspect is limited solely to the student. Records may be released to parents only under the following circumstances:
a) Through the written consent of the student
b) In compliance with a subpoena,
c) By submission of evidence that the parent declares the student as a dependent on their most recent Federal Income Tax form (IRS Code of 1954).

Written Consent

• University officials may not disclose personally identifiable information contained in a student's education record except directory information or under the circumstances listed above, except with the student's prior written consent. Written consent must include the following:

a. A specification of the information the student consents to be disclosed
b. The person or organization or the class of persons or organizations to whom the disclosure may be made;
c. The purpose of the disclosure
d. The student's signature and date (within the last calendar year) of the consent.

• The student may obtain a copy of any records the University disclosed pursuant to the student's prior written consent. The University will not release information contained in a student's education records, except directory information, to any third parties except its own officials, unless those third parties agree in writing that they will not re-disclose the information without the student's prior written consent.

Additional Guidelines for Faculty

• The posting of grades by the student's name, institutional student identification number or social security number is not allowed. Grades cannot be posted via paper source or electronic source unless the instructors and others who post grades use a system that ensures FERPA requirements are met.

• Prohibition on disclosure of personally identifiable information from an education record of a student applies to any kind of non-directory information. Examples include performance in class, grades, attitude, motivation, abilities and background that are conveyed in writing, in person or over the phone to third parties.

Challenge of Contents of Education Records

Florida A&M University provides any student with an opportunity to challenge and amend the contents of his/her education records which the student considers to be inaccurate, misleading, or otherwise in violation of their privacy or other rights. Challenge requests must be submitted to the University Registrar.

Protocol for Records Storage and Disposal

Once University officials who are designated custodians of student records have established the following protocol for ensuring that student records being collected, accessed, stored, printed, destroyed or otherwise used are physically secure from unauthorized access;

- Each person using electronic systems to access records must have a unique account with a password assigned for his/her own use. The account name and passwords used to access these systems must not be written down, told to others, or made available in any way for use by other persons. Account holders must change their passwords frequently
- Computers used to access electronic records systems must not be left unattended. Computers located in public areas must be positioned so that visitors cannot view.
- Printers must not be publicly accessible and must be attended so that printed materials cannot be seen or taken by authorized persons. To reduce this risk, printed materials must be retrieved from the printer promptly.

Printed or copies of records stored on electronic media must be kept in locked drawers or cabinets when not being used. Records being used must be returned to locked storage areas overnight. Central filing systems must be secured behind locked doors when they are not attended.

Printed records must be shredded prior to recycling. Copies of records stored on electronic media, such as computer hard drives, CD-ROM, or diskette must be permanently deleted from these media before the media is disposed of. If this is not possible, the media itself should be destroyed and made unusable prior to its disposal.

Definition of Terms

Student – An individual for whom the educational institution maintains records. The term refers to a person who is or in the past has received academic credit from the University. "Student" does not include an individual who is or has been enrolled in non-credit, Continual Learning programs.

Enrolled Student – For the purpose of this document, this term refers to a student who has satisfied all the institution's requirements for attendance in course offered for academic credit at the institution and is statistically represented in federal, state and/or local reports maintained by the educational institution.

Education Records (Academic Records) – Any records maintained by the University and employees/agents of the University which contain personally identifiable information directly related to a student record, and used herein, includes any information or data recorded in any medium, including but not limited to handwriting, print, magnetic tapes and disks, film, microfilm and microfiche.

Student Records – Any information or data collected, recorded, or maintained in any medium (e.g., handwriting, print, tapes, films, files, microfilm, microfiche, and any other form of electronic data storage).

Directory Information – Information contained in an education record of a student that generally would not be considered harmful or an invasion of privacy if disclosed. Items that can never be identified as directory information are a student's social security number, citizenship, gender, religious preference, grades and GPA.

Personally Identifiable Information – Data or information which includes:

• The name of the student, the student's parents, or other

family members;
- The student's addresses;
- A personal identifier such as a social security number or any generated student number; or
- A list of personal characteristics or other information that would allow the student's identity to be traced.

School Officials (University Officials) – Those members of an institution who act in the student's educational interest within the limitations of their "need to know." Officials may include faculty, administration, clerical, and professional employees and other persons, including student employees or agents, who manage student education record information.

The University has also defined a school official to be any person currently serving as:
- A member of the Florida Board of Governors (FBOG);
- As a temporary substitute for a staff member or faculty member at FAMU for the period of his/her performance as a substitute member; and
- A member of the FBOG or under contract to the University to perform a special administrative task. Such persons shall be considered to be school officials for the period of their performance as an employee or contractor.

Student Right to Know Act
To protect the rights of college students, the federal government has passed "The Student Right to Know Act." A prospective or continuing student at Florida A&M University has the right to certain information the university is required to provide by law. The following is a list of departments that maintain data as mandated by the federal government in order to be in compliance with the Crime Awareness and Campus Security Act of 1990 and the Higher Education Amendments of 1992 and 1998. The information on the sites is also contained elsewhere in this publication. Please visit the university website (WWW.FAMU.EDU), or departments for more information.

Center for Human Development
Learning Development and Evaluation Center
Athletic Department
Disability Services
Financial Aid
Institutional Research
University Registrar
Police Department

Consortia Relationships/Contractual Agreements

To ensure the quality of educational programs and courses offered through consortia relationships or contractual agreements, the University maintains ongoing compliance with the comprehensive requirements and evaluates the consortia relationship and/or agreement against the purpose of the institution. The University ensures that the quality of educational programs/courses offered through consortia relationships or contractual agreements is in keeping with its goals and mission. The following narrative provides evidence of compliance.

College Consortium for International Studies - FAMU is a member of the College Consortium for International Studies (CCIS), a partnership (of accredited two and four-year U.S. and foreign colleges and universities), which shares a commitment to developing a variety of international programs. Through these affiliations with CCIS and the Council for International Education & Exchanges, FAMU students can study in over 100 countries and in most fields. The coursework in these programs is reviewed by faculty in the discipline to ensure that academic integrity is maintained.

Articulation Agreement and Other Institutional Agreements - The University subscribes to the Articulation Agreement between the State University System and the Florida College System. Under this agreement, graduates of Florida's public colleges are eligible for admission to non-limited access programs at a state university if the student has completed the university parallel program and has received the Associate of Arts degree. Additionally, the student will receive priority admission over out-of-state students. The agreement also ensures the transferability of courses that meet applicable requirements taken at the community colleges to the University.

The Articulation Agreement is overseen, monitored and assessed by the Florida Department of Education Articulation Coordinating Committee (ACC). The primary purpose of the ACC is to provide oversight to the articulation agreement by reconciling designated common prerequisite courses; building institution accountability for adhering to designated program prerequisites and advising students appropriately; surveying the faculty committees to determine the appropriateness of recommended changes in designated prerequisites; conducting a review of public institutions catalogs for verification of common program prerequisites; studying student participation in statewide agreements and conducting a review of current programs that may be candidates for statewide articulation. Additionally, the Office of Statewide Course Numbering System within the Florida Department of Education ensures that courses offered by all public institutions covered by the Articulation Agreement have similar course content and are taught by faculty who possess the appropriate credentials to teach the course.

Leon and Gadsden County High School Students Dual Enrollment Registration-The high school dual enrollment agreement between the Leon and Gadsden County School Boards are reviewed annually by the County School Boards and the University. After review, the agreement must be signed by the Superintendent of the County School System and the President of the University. The term stipulated in the agreement that allows qualified high school students to enroll at no cost is relevant and consistent with the University's purpose and educational mission.

FAMU-FSU Cooperative Program - The University and Florida State University have a reciprocal agreement that allows students to participate in a cooperative program that permits students to take a limited course load across all academic disciplines at either University. The students must obtain permission of academic officials at both schools before enrollment can occur. No more than half of the credit hours taken by a student during a given term may be taken at FSU.

Florida State University is a fully accredited institution by the Southern Association of Colleges and Schools (SACS) with comprehensive educational programs that have been certified and validated by the Florida Department of Education and many other equivalent agencies.

Doctor of Philosophy Degree in Entomology - The Division of Agricultural Sciences offers a Master of Science degree in Agricultural Sciences and the PhD degree in Entomology in cooperation with the University of Florida. This cooperation between the two Universities, in developing this innovative minority program, represents a historic achievement in the profession of entomology and a landmark in higher education for both Universities. The cooperative PhD in Entomology has received strong support from a number of state and national societies, government agencies and industrial leaders. The PhD is awarded by the University of Florida.

Doctor of Philosophy Degree in Nursing Science - The University joined with the University of Florida to offer a cooperative PhD in Nursing Science. Through this cooperative degree offering, students may access the University of Florida's doctoral program on the campus of the University via an interactive audio-visual system. The PhD degree is awarded by the University of Florida.

Florida Engineering Education Delivery System (FEEDS) - Florida Engineering Education Delivery System (FEEDS) was established by an act of the Florida Legislature to provide opportunity for graduate work from all SUS Engineering programs for Florida Professional Engineers so that they can earn a Master's degree in Engineering while employed.

Admitted graduate students in the FAMU/FSU College of Engineering who wish to participate in the Florida Engineering Education Delivery System (FEEDS) program must adhere to the following guidelines:

1. Student shall earn at least fifty percent (50%) of all credits applied to the Master's program in the FAMU/FSU College of Engineering.
2. A maximum of six hours can be transferred from universities outside the State University System (SUS).
3. Student is in good academic standing i.e., GPA 3.00, not on suspension.

Financial Regulations

Registration - Students must be prepared to make full payment of fees, including room and board, for each semester. No student will be permitted to register until all unpaid University accounts and fees have been satisfied. This includes delinquent short term loans, traffic and library fines, clinic charges, and other obligations to the University.

All checks tendered for fee payment which are returned unpaid by the bank may cause the student's registration to be canceled. However, the student remains liable and must make prompt restitution for the face amount of the check plus a service charge of $10 or 5% of the face amount, whichever is greater. Subsequent personal checks from the maker of the check will not be accepted by the University.

Failure to pay for these fees, unless the student has an approved deferment, will result in the cancellation of the student's registration/prohibit release of transcripts and diploma.

A returned check fee, pursuant to Section 832.07, Florida Statutes, as now or hereafter amended, will be assessed for checks returned to the University. If a student issues the check, the student's ability to register for classes and receive transcripts will be suspended until the account has been paid in full.

Exemptions
Students exempted from any fees indicated above shall not be entitled to any of the privileges which the payment of such fee gives. Collection cost may be assessed to student.

Cashier and Student Account Office Hours: 8:30 a.m. to 4:00 p.m., Monday through Friday.

Fees
Registration and tuition fees are established by the Board of Education and the FAMU Board of Trustees as required by the Florida Legislature. These fees are subject to change without notice. The current credit hour fee schedule is as follows:

	IN-STATE	OUT-OF-STATE
Undergraduate	$151.78	$549.80
Graduate	405.67	1,022.04
Law	455.86	1,097.89

Other Semester Fees

Orientation (New Student Only)		$ 35.00
Health (Six or more hours)		59.00
Material & Supply Fee		15.00 - 300.00
Official Transcripts (each)		10.00
Transportation & Access Fee	65.00	(Summer $33.00)
Repeat Surcharge Regular (additional per credit hour)		158.84
College Prep. (additional per credit hour)		182.00
Late Registration		100.00
Late Payment		100.00
I.D. Card Fee (Fall & Spring)		5.00
Differential Fee		$36.38;
College of Law Bar Review Preparation Fee		$2400.

Excess Credit Hours
Undergraduate students entering fall, 2009 and fall, 2010 academic years will pay 50% more tuition per credit hour for each credit hour exceeding 144 attempted credit hours. Undergraduate students entering fall, 2011 academic year will pay 100% more tuition per credit hour for each credit hour exceeding 138 attempted credit hours. Undergraduate students entering fall, 2012 academic year and thereafter will pay 100% more tuition per credit hour for each credit hour exceeding 132 attempted credit hours.

Repeat Course Surcharge
In accordance with State of Florida statutes, 240.124 & 240.177, each University in the State University System is required to implement a repeat course surcharge for students who take a State-funded undergraduate course for the third time or a college preparatory course for the second time.
Accordingly, beginning the Fall Semester 1997, students who repeat the same course for the third time at FAMU will be subject to an increased matriculation fee of 100% of the cost instruction. Students who repeat the same college preparatory course (i.e., for the second time) at FAMU will also be subject to an increased matriculation fee of 100% of the cost instruction. However, exceptions may be made for individualized study, courses that are repeated as a requirement of a major, and courses that are intended as continuing over multiple semesters. The repeat of coursework more than two times to increase grade point average or meet minimum course grade requirements is also subject to the

surcharge. (Attempts prior to Fall 1997 will not be counted under this statute).

Economy Meal Plan
Florida A&M University Dining Services provides nutritious, wholesome and delicious meals to Faculty, Staff and Students. Students residing in the following Residence Halls (FAMU Village, Gibbs Hall, PaddyFoote Complex, Sampson Hall, Truth Hall, and Young Hall) are required to purchase one of the Mandatory Meals Plans. All other students have the option to purchase a Commuter Meal Plan, one of the Mandatory Meals Plans or no Meal Plan. Meal Plans options, information and prices can be found at www.metzfamu.com.

University Refund Policy
A 100% fee refund/charge adjustment will be made to the student for tuition and registration fees if notice of withdrawal from the University is approved prior to the end of the drop/add period and written documentation is received from the student. Terms in the student housing contract will determine the refund of room rent, whereas board will be prorated based on the approved date of cancellation.
(a) A 25% refund/charge adjustment of registration and tuition fees, less building and capital improvement fees, will be made if notice of withdrawal from the University is approved prior to the end of the fourth (4th) week of classes and written documentation is received from the student or at an appropriate time as designated by the University for summer sessions. The late registration/payment is nonrefundable.
(b) A 100% refund/charge adjustment will be made of the registration and tuition fees if a student withdraws or drops a course due to circumstances determined by the University to be exceptional and beyond the control of the student, including but not limited to:
(i) Illness of a student of such severity or duration, as confirmed in writing by a physician, to preclude completion of the course(s),
(ii) Death of the student or death in the immediate family (parent, spouse, child, or sibling),
(iii) Involuntary call to active military duty,
(iv) Or a situation in which the University is in error.
Formal application for a refund in the instances specified above must be made to the office of the University registrar on forms provided by that office.

Office of Student Financial Aid and Scholarships
The role of the Student Financial Aid and Scholarships Office (SFAO) is to provide assistance to students and parents by identifying resources to be used to help offset educational costs. Financial aid funds are awarded primarily on the basis of a student's demonstrated financial need without regard to race, color, sex, national origin or disability. Through a comprehensive financial aid program, administered and coordinated by the SFAO, the University seeks to assist all students who demonstrate financial need. While the full need of all applicants cannot be met, every effort will be made to assist students in locating resources.

Financial aid awards may include loans, grants, scholarships, or part-time employment and may be offered singularly or in various combinations. When a student applies, a good rule to follow is to apply at least six (6) months prior to the term of expected enrollment.

Categories

Scholarships and Grants - Scholarships and grants do not have to be repaid. They are available from many sources, including the federal government, state agencies, professional and service organizations, private foundations and individual schools.

Loans - Loans may come from many sources, including the federal government by way of the school or from private financial institutions. Interest rates for most student loans are very reasonable, but may vary for private loans since they are credit based. Depending on the loan program, money is loaned either directly to the student or to the parents.

Work-study Jobs – Work-study programs allow students to earn money toward their education while they're going to school. Students can sometimes find jobs related to their program of study. Work-study wages are based on federal minimum wage guidelines, but they may vary according to the skill and experience needed for the job.

How to Apply for Financial Aid
The Free Application For Student Financial Aid (FAFSA) is available at www.fafsa.ed.gov. The student and parent will need a federal pin number to process the FAFSA. Visit www.pin.ed.gov to retrieve. The University priority deadline is March 1st of each year.

Federal
To receive The Student Guide Booklet on Federal Programs (Department of Education) write to: Student Financial Aid, Room 101 Foote-Hilyer Administration Center, Florida A&M University, Tallahassee, Florida 32307-3200 or Federal Student Aid Information Center, Post Office Box 84, Washington, DC 20044-0084.

State
The Florida Department of Education, Office of Student Financial Assistance (OSFA) administers a variety of state-funded grants and scholarships to assist Florida residents with the cost of their postsecondary education. Visit www.floridastudentfinancialaid.org for additional information.

Students with Disabilities
In accordance with Chapter 240.4041, Florida Statutes, students with disabilities who are unable to carry a 12-hour course load due to their disabilities may be eligible for consideration of the Florida Student Assistance Grant Program. Certain requirements regarding disability documentation are necessary. Therefore interested students must check with the Center for Disability Access and Resources Office (CEDAR) at (850) 599-3180 to ensure that they meet eligibility standards.

Scholarships

Presidential Scholar Program
The Presidential Scholarship Program is a component of the Division of Student Affairs and the Office of Financial Aid and Scholarships. The offices will select and screen applicants for participation in the program and forward recommendations to the President of the University. After the offer is made, the official letter of offer will be forwarded to the applicant.

All scholarship participants must apply for financial aid each year by completing the Free Application for Federal Student Aid (FAFSA).

Life-Gets-Better Scholarship
Selected first time in college incoming freshmen designated as National Achievement Scholarship Program, National Hispanic Recognition Program, or National Merit Scholarship Program Finalist or Semifinalist by the National Merit Corporation **and** who have an unweighted 3.50 GPA; and scores of an 1800 on the SAT **or** 27 on the ACT; **or**

Incoming freshmen who have at least an unweighted 3.50 GPA **and** scores of 1900 on the SAT or 29 on the ACT will receive the following over four (4) consecutive years, excluding summer terms

if eligibility is maintained will receive the following: **Tuition, fees, room, board, books—not to exceed $500/semester, $500/ semester stipend, opportunities for internship(s) or research, laptop, and waiver of $350-housing deposit.**

Prospective recipients must major in Biology, Chemistry, -Computer Science, Engineering, Environmental Science, Mathematics or Physics in order to be eligible for this scholarship. Selected individuals are verified through the FAMU application process and submission of official documents. Students that do not choose the above-mentioned majors will be offered the Distinguished Scholar Award (DSA).

Distinguished Scholars Award Scholarship
Incoming freshmen who have scores of at least 1800 on the SAT or 27 on the ACT **and** have a high school **academic core** GPA of 3.50 or National Achievement, Merit, Hispanic Semifinalists/Finalists:

Florida Residents receive a full four-year scholarship that pays for tuition and fees, double occupancy room rate, and board. The $350 housing deposit will be waived for Florida Bright Futures Scholar awardees. Additionally, **National Achievement Semifinalists/ Finalists** and students majoring in Engineering will receive up to $500 a semester for books. Additionally, **National Achievement Finalists** will receive a laptop.

A National Achievement Scholar will receive a laptop, $500 per semester for books and a $500 semester stipend.

Out-of-State students receive a four-year scholarship that pays for tuition and fees. A **National Achievement Semifinalist** will receive double occupancy room rate and board. A **National Achievement Finalist** will receive a laptop. A **National Achievement Scholar** will receive a laptop, $500 per semester for books and a $500 semester stipend.

George W. Gore Assistantship
This is a four-year scholarship. Incoming freshmen who have at least 1650 (R&M) on the SAT or 23 on the ACT **and** a minimum high school GPA of 3.00 qualify for the following awards:

Test Score Requirement	Annual Award
ACT 23 or SAT 1650 - 1679	$2,000
ACT 24 or SAT 1680 - 1724	$3,000
ACT 25 or SAT 1725 - 1754	$4,000
ACT 26 or SAT 1755 - 1784	$5,000
SAT 1785 and up	$6,000

Incoming freshmen majoring in Biology, Chemistry, Computer Science, Environmental Science, Mathematics or Physics will receive an extra award of $1,000 annually, and Engineering majors will receive an extra award of $2,000 annually.

Florida Community College Scholarship
The scholarship was established to assist high achieving Florida community/junior college graduates. This partial scholarship is a two-year undergraduate scholarship awarded to a AA or AS Degree transfer student who has a minimum 2.50 GPA and is not enrolled as a FAMU student. The annual amount of the scholarship is as follows:

Cumulative GPA	Annual Award
2.50 - 2.74	$1,500
2.75 – 3.00	$2,000
3.01 – 3.49	$3,000
3.50 – 3.99 or PTK Member	$4,000
4.00	$5,000

Criteria
The President's Special Scholarship recipient must have an academic high school GPA of 3.0 on a 4.0 scale. The recipient must have at least an SAT score of 1000 or at least an ACT score of 20. The recipient must maintain a cumulative grade point average of 3.0 at the end of each semester and be enrolled in fifteen (15) hours each Fall and Spring semester and pass all courses attempted.

For additional information about the scholarships listed above, please call: (850) 599-3512.

Other Scholarships
Army ROTC - Awards of two-, three-, and four-year and green and gold scholarships are given to outstanding applicants. Each scholarship pays full tuition (in-state/out-of-state) and room and board. In addition to the awarded scholarship, each winner receives a flat rate of $450 annually for books, supplies and equipment, as well as up to $1,500 in spending money, tax free. Interested students should contact the Department of Military Science at (850) 599-3515/3516.

School of Business and Industry (SBI)-Limited financial aid is available to SBI students through both SBI and the University Office of Financial Aid. Although SBI announces its awards to students, all award are made by the FAMU Office of Financial Aid, and all rules of that office must be followed. All students receiving SBI awards must file all appropriate financial aid forms. Awards will be made to only those students who complete the financial aid application process.

Admits who desire aid, but did not receive an SBI award, should apply directly to: Office of Financial Aid, Florida A&M University, Tallahassee, FL 32307, phone: (850) 599-3730.

Robert T. Bacon Scholarship-This scholarship is to be awarded to a student in the School of Business and Industry from the Northeast Region.

College of Agriculture and Food Sciences- The USDA Forest Service Scholarships for freshmen and sophomore Forestry and Natural Resource Conservation majors; The Ruben Capeluto Scholarship available to Entomology majors; The Benjamin L. Perry, Jr. Agricultural Sciences Scholarship for Agricultural Sciences majors; and The Florida Rural Rehabilitation Corp. Agricultural Sciences Scholarship Fund for Agricultural Sciences majors coming from a Florida farm or a rural Florida background. Interested students should contact CESTA at (850) 599-8816.

College of Architecture and Engineering Technology-The Dwight D. Eisenhower Scholarship for engineering technology; The Gainesville Regional Electricity Scholarships for freshmen in Electronic Engineering Technology; The Hensel-Phelph Scholarship for juniors and seniors in Construction/Civil Engineering Technology; The Ray Long Alumni Scholarship for Engineering Technology majors; The URS-Greiner, Incorporation Scholarship available to Construction/Civil Engineering Technology majors.

College of Pharmacy-Contact the dean of the School of Pharmacy for information regarding the following scholarships available to pharmacy majors: Kellogg Foundation, Pfeiffer Foundation, Pfizer Foundation, Warner-Lambert, Jack Eckerd's Drugs, John W. Dargaval, McKesson & Robbins, Rexall Mortar and Pestle Trophy, Reyno Award, Broward County Pharmaceutical Company. Interested students should contact the College of Pharmacy at (850) 599-3301.

Air Force ROTC Scholarships-Four, three and one-half, two and one-half, or two-year scholarships based on merit are available to selected AFROTC students. Each scholarship pays full tuition, books, laboratory expenses, and a $100 per month tax-exempt allowance. Four-year scholarships must be applied for no later than December 15th of the senior year in high school. Other scholarships may be applied for after enrolling in college level AFROTC courses. Interested students should contact the Department of Aerospace Studies, Florida State University, telephone 644-3461.

Alethia A. Lesesne Howard Award Fund of $1,000-This fund provides an annual award in the amount of $1,000 to a member of the senior class. The award is based on excellence in English literature and on character, scholarship, and personality. The fund was established by Dr. W. H. Lesesne Howard, class of 1917, B.S., in honor of his mother Mrs. Alethia A. Lesesne Howard. From the basic sum of $16,033.67, in the Home Owner's Federal Savings and Loan Association of Boston, Mass., $1,000 annually in interest will provide the award. A selection committee composed of the chairperson and two members of the department of languages and literature chooses two nominees on an annual basis to compete for the $1,000 award. The finalist is selected by two trustees of the Fund at Boston, Mass.

Alumni Chapter-County alumni chapters set up the criteria for these scholarships and select the recipients for same. Funds are sent annually to the FAMU director of Alumni Affairs. Active chapters participating are: Leon; Philadelphia; Palm Beach; Gadsden; Broward; Brevard; Seminole; Washington, D.C.; Jefferson; Marion; Escambia; Orange-Orlando; New York; New Jersey; Daytona Beach Delta Sigma Theta Sorority; and the Miami-Gold Coast Chapter. Interested students should contact the FAMU Foundation at (850) 599-3860.

The Arthur Thompson Scholarship is a $2,500 award for local students enrolled in Florida A&M University who demonstrate a dire need for financial assistance to continue their educational career. Interested students should contact the Office of Public Affairs at (850) 599-3413.

American Foundation of Pharmaceutical Education Award-The Board of Grants of the American Foundation for Pharmaceutical Education provides a fund of $400 annually to be awarded to highly deserving students who are in need of financial aid. Third, fourth, and fifth year students in the upper quarter of their class who maintain a 3.00 average or higher are eligible. Individuals who are receiving veterans benefits are not eligible for this scholarship. Interested students should contact the College of Pharmacy at (850) 599-3030.

Division of Vocational Rehabilitation-The Department of Children and Family Services provides scholarship assistance to some persons who are physically or mentally handicapped or who have a behavior disorder due to social or cultural deprivation. The applicant must have average high school grades and at least a "C" average if already enrolled in Florida A&M University.

Application for this assistance should be made at least three months prior to the time the student wishes to enroll. Application can be made to the Division of Vocational Rehabilitation, Tallahassee District Office (850-599-5330), or to the office nearest the student's home.

Elsie Dunbar Scholarship-Two scholarships are available annually. Contact the FAMU Foundation for more information at (850) 599-3860.

NaLen Pittman Sociology Award-This $1,000 annual award was established by Dr. Ezell Pittman in memory of his parents, Nathaniel and Lena Wynn Pittman. The scholarship is to be awarded to a sophomore, junior or senior majoring in sociology who has a 2.0 or better GPA.; and is in need of financial assistance to pay for books and tuition. Priority will be given to a student from Jackson, Gulf, or Duval counties if the GPA requirement is met along with demonstrated leadership ability and commitment to community service. The recipient will be selected by the Sociology Scholarship Selection Committee. For Additional information, contact the Sociology Department at 599-3316.

NROTC Navy-Marine Scholarship Program-This scholarship plan pays tuition and fees, books, uniforms, and $100 per month subsistence allowance. The purpose of the program is to provide civilian educated career officers to serve American people in the U.S. Navy and Marine Corps. For more information, contact the NROTC office at (850) 599-8412.

General Motors Endowed Scholarship Program-These endowed scholarships are designed to provide educational assistance to minority and female employees of General Motors, as well as spouses and offspring. Apply directly to the Office of Student Financial Aid.

The John Due and Patricia Stephens Due Freedom Scholarship-This endowed scholarship is named for FAMU alumni John Due and Patricia Stephens Due, who have been stalwart crusaders for civil rights and equality for more than four decades. The John Due and Patricia Stephens Freedom Scholarship ("The Freedom Scholarship") shall be administered by the following guidelines: 1) The Foundation Scholarship Committee or the Office of Recruitment and Scholarships shall determine all awardee(s) based on applications submitted by the posted deadline. The scholarship committee overseeing interviews should include Attorney John Due. 2) The Freedom Scholarship shall be awarded annually to one student in the amount of $1,000 based on need, so long as the funds are available. This scholarship is for tuition, room, board, books, and fees; 3) The Freedom Scholarship is designated for an undergraduate student with a minimum cumulative GPA of 3.0. Applicants must be majoring in history, sociology, journalism, black studies or political science—or be able to demonstrate outstanding volunteer work in civil rights or community improvement during their high school and/or college years; 4) Recipient(s) will be required to provide a photograph and written statement to the Foundation. In this statement, the recipient(s) will write how they plan to use the legacy of the civil rights movement to do their part to make this a better nation. These materials will be used for promotional purposes upon acceptance of this scholarship: 5) Recipient(s) must complete and sign a Scholarship Acceptance Form. All scholarship winners will receive a paperback copy of Freedom in the Family: A Mother-Daughter Memoir of the Fight for Civil Rights, by Tananarive Due and Patricia Stephens Due; and 6) This scholarship may be renewed; however, current recipients must re-apply each year and follow the procedures outlined by the Committee. For more information, contact the FAMU Foundation at (850) 599-3860.

The Norma Solomon White Band Scholarship-Because of her love for FAMU and affiliations with the Music Program as the first female to participate in the Marching "100", the first female band director in Jacksonville and the first female to conduct the Marching "100", a perpetual remembrance for music students at the University was established. The Norma Solomon White Band Scholarship was created in the Alpha Kappa Alpha Educational Advancement Foundation. Awards are announced during commencement week or at a time designated for awards. The scholarship is presented to a deserving student at Florida A&M University. The recipient must be presently enrolled at FAMU pursuing a degree with a major in Music/Music Education and participating in the Marching "100" and Symphonic Bands. The Director of Bands and the band scholarship committee must recommend the recipient. For more information, contact the

Director of Bands at (850) 599-3024.

William J. Gunn, Medical, Dental, and Pharmaceutical Association and The Women's Auxiliary Scholarship-An award of $500 will be presented annually to a junior level student in the School of Nursing and the School of Pharmacy, with recipients coming from nursing one year and pharmacy the next. Students qualifying for the scholarship must have a 3.0 cumulative grade point average and be evaluated on scholarship, economic status, community activities, and campus activities.

Eddie Jackson Scholarship Fund-An award established to begin Fall semester of 2004-2005 to be presented in the amount of $750.00 per semester. The recipient must be a graduate of Jones High School in Orlando, Florida, with priority given to students who live in Lake Mann Homes or other public housing projects in Orlando. For more information, contact the FAMU Foundation at (850) 599-3860.

Althea Gibson Scholarship-An award established through an endowment made by Drs. William "Bill" H. Cosby, Jr. and Camille Olivia Cosby. Ms. Gibson was one of our acclaimed graduates and had the distinction of winning two Wimbledon singles titles, two U.S. Opens and a French Open, in the late 1950s. This scholarship supports students studying physical education, recreation and health, which were Ms. Gibson's disciplines at FAMU. For more information, contact the Department of Health, Physical Education and Recreation at (850) 599-3135.

The Ethics in Business Scholarship Program- Designed to provide need-based scholarships to full-time undergraduate Florida residents attending Florida A&M University. For more information, contact the Office of Student Affairs at (850) 599-3183.

School of Journalism and Graphic Communication Scholarships-Scholarships are awarded to freshmen or community college transfers admitted to FAMU to study journalism or graphic communication. To be eligible for consideration, first-time-in-college applicants must have at least a "B" average in English and a 3.4 GPA along with a 26 or higher ACT or 1100 or higher SAT score. Based on academic credentials and practical skills; awards may go as high as $2,500 per year. For more information, contact the School of Journalism at (850) 599-3379.

Anne Richardson Gayles-Felton Endowed Scholarship Fund
This scholarship shall be awarded to teacher education undergraduate students in the College of Education who meet the following criteria: fully admitted to the Teacher Education Program; maintain a minimum overall GPA of 3.00 and a GPA of 3.25 or better in their area of specification; and submit three (3) letters of recommendation.

The Anne Richardson Gayles-Felton Endowed Scholarship will be awarded annually to one person, but it can be renewed. Recipients must apply each year. The award amount will be determined by the amount of funds accrued over and above the principal. The scholarship is for tuition, matriculation fees, laboratory fees, and books. For more information, contact the Dean in the College of Education at (850) 599-3482.

Richard A. McLellan Endowed Scholarship-The Richard A. McLellan Endowed Scholarship was established by Richard A. McLellan to assist a deserving student preferably from the Apopka, Florida, geographical area. Applicants should possess a minimum 3.0 GPA, a minimum of 950 on the SAT and 21 on the ACT. Scholarships shall be awarded for a period of one (1) year. For more information, contact the FAMU Foundation at (850) 599-3860.

The Freddie Lang Groomes Scholarship-Designed to contribute to the development, improvement and education of single mothers at Florida A&M University in Tallahassee, Florida, by providing educational opportunities and financial support for single mothers entering or returning to school. For more information, contact the FAMU Foundation at (850) 599-3860.

George and Lula Rawls Endowed Scholarship-Established to support students who are aspiring toward a career in medicine. This scholarship has been established in honor of Lula P. and George H. Rawls. Participants must be either biology or chemistry majors who are committed to pursuing the M.D. degree. For more information, contact the FAMU Foundation at (850) 599-3860.

Martha J. and LaSalle Leffall, Sr. Endowment Fund-Established by Dr. LaSalle D. LeFall, Jr. in honor of his deceased parents. The Endowment will provide scholarships for students in science at Florida A&M University. This is a need-based scholarship to assist full-time, degree seeking undergraduate students preferably from Gadsden County Florida attending FAMU. Must be a U.S. citizen and a Florida resident. For more information, contact the FAMU Foundation at (850) 599-3860.

The Tom Joyner Foundation Scholastic Scholarship Program-Established to provide a need-based scholarship for full-time undergraduate students and "Save-A-Student" funds for Florida A&M University students. Recipients must be a U.S. Citizen; currently enrolled and a student in good scholastic standing with the University; student must have completed 10 hours of community/volunteer services per semester; open to both in-state and out-of-state students; and student must provide a statement of purpose/need for scholarship. For more information, contact the FAMU Foundation at (850) 599-3860.

Melvene Hardee Scholarship-This scholarship will be limited to applicants who have been admitted to the Teacher Education Program (TEP). Applicants will demonstrate their commitment to the profession of teaching by writing a letter of interest and intent that addresses teaching as their chosen profession. Financial need will be a decisive factor in the awarding of scholarships. For more information, contact the College of Education at (850) 599-3482.

Elinor Jackson Endowed Scholarship Fund-For a student in the Occupational Therapy Program. For more information, contact the School of Allied Health Sciences at (850) 599-3818.

Antoinette and Frederick S. Humphries Scholarship-For more information, contact the FAMU Foundation at (850) 599-3860.

Minnie Humphries Scholarship-For more information, contact the FAMU Foundation at (850) 599-3860.

Griffin-Tookes Endowed Scholarship-For more information, contact the Department of Health, Physical Education and Recreation at (850) 599-3135.

Costa and Emma Kittles Scholarship-For more information, contact the FAMU Foundation at (850) 599-3860.

Revolving Loan Fund - Short Term
Revolving loan funds are available to students who receive financial aid administered by the Office of Financial Aid. The financial aid office approves applicants who prove the need and urgency for financial assistance to continue or complete their educational objectives. All short term loans are payable in thirty to ninety (30-90) days. Students assuming financial responsibilities are expected to comply with loan procedures and policies.
NOTE: A $10.00 service charge is levied on all short-term loans.

Student Affairs

The Division of Student Affairs is dedicated to facilitating attainment of the objectives of the University. Its primary emphasis is centered on the principles of developing a well-rounded student involving the student's intellectual, physical, spiritual, leadership and emotional development To assist students in their personal adjustment and preparation for academic pursuits, the student development services, enrollment services, and student life components of the division provide services through the following offices.

The offices of New Student Orientation, Housing and Residential Life, Student Health Services Counseling Services, Learning Development Evaluation Center, Career Center, Student Union and Student Activities, Law Enforcement, Judicial and Resource Services, Ombudsman, Campus Recreation, and New Beginnings Child Care Center devote much time, energy and resources toward assisting the individual student in achieving maximum motivation and optimum growth and development. Aspects of departmental programs include social education, cooperative living, health and wellness, safety concerns, student involvement and participation, student government and leadership, veteran affairs, student disability, foreign and minority student programs, recruitment, co-curricular activities, counseling, intramural programs, and career placement.

New Student Orientation

The Office of New Student Orientation provides a number of services to incoming freshmen, transfer students, and the community at large. Its primary purpose is to assist in students' transition into the collegiate environment by providing opportunities for entering students to develop realistic academic and personal goals, gain information about available support services and resources, and meet with faculty and staff, as well as current students. It also provides services to parents and family members, including information on how to help their students with the transition to college life.

Orientation programs are offered in the summer and spring semesters. During orientation, students receive pertinent information about the University's rules and regulations, academic advisement, registration, financial aid, and campus life. The Orientation Office also coordinates campus tours to prospective students and to the general public. The office is located in Room 105 of the Student Union Building.

Housing and Residence Life: Living and Learning

Residential living offers an excellent opportunity to experience a "liv-ing and learning" environment. Living on campus provides students the opportunity to get fully involved in their academic process. The goal of the Office of Housing and Residence Life is to provide residents an effective living learning environment, supportive student development systems and programs and activities linked to academic learning.

Programming is the key element in making living in the residence halls an enlightening experience. Many of these programs are facilitated by Resident Assistants (RAs) or Resident Directors (RDs). RAs are trained student leaders that live on each floor of the residence halls. They develop programs and activities that develop community and assist residents with their development as students. The RDs are professional live-in staff members that serve as resources for residents, provide guidance, and assist with crisis management. Residence life programs are designed to help students develop a sense of community, meet and interact with each other, bring academic life into the halls, and provide relaxation and leisure. Through the assistance of professional and student staff, residents also learn to utilize many of the resources FAMU has to offer.

Housing is provided to all students regardless of race, creed, color or national origin. Facilities for males and females are proportionate in quantity, quality, and cost for each student. Housing is also available for students with special needs and disabilities.

Housing

University Rule 6C3-2.001 (13) Housing, Florida Administrative Code

All First Time In College (FTIC) students whose permanent home mailing address indicated in the Student's University record is more than 35 miles from campus shall reside in a University owned or leased housing facility, based on space availability, for the first academic year of enrollment.

A FTIC student is defined as a student under the age of 21 prior to the first day of classes with fewer than 30 semester hours recognized by Florida A&M University and has resided in University housing for less than two semesters.

College credits earned during high school completion through accelerated mechanisms such as Advanced Placement, International Baccalaureate, Advanced International Certificate of Education, dual enrollment courses, career academy courses, national industry certification courses, as well as course offerings through virtual instruction, will not be counted towards an exemption from the On-Campus Residency Requirement.

For purposes of this provision, the following are on-campus residence hall facilities designated for freshmen: FAMU Village, Gibbs Hall, Paddyfote Complex, Young Hall, Sampson Hall, and Truth Hall.

Exceptions may be granted for:

a) Students residing at home if the permanent home address as indicated in student's University records is 35 miles or less from campus;
b) Married students;
c) Students with a dependent child or children;
d) Students 21 years of age or older prior to the first day of classes;
e) Students who are military veterans that served on active duty for at least 12 months or students currently serving on active military duty;
f) Students on a case-by-case basis by the President or President's designee provided there is good cause shown by the student.

To request an exemption, complete and submit an exemption request available on the Housing website or located in the Housing main office in Gibbs Hall, Lower Level. The above requirement may be waived by the President or president's designee on a case-by-case basis provided there is good cause shown by the student.

Residence Halls

Three types of student housing are provided at Florida A&M University. The "traditional residence hall" is one style offered, and it is characterized as a community living experience. The traditional hall provides several rooms designed for multiple occupancy and sharing a common hallway, bathroom, and other facilities. This form of housing offers the student a living experience in which he/she is exposed to many new people and ideas. As a part of the benefit derived from living in the traditional type of housing, the student becomes part of the community and learns many of the following lessons that are gained through the experience: acceptance of individual differences, respect for the rights of others, and an opportunity for friendship from different parts of the state, nation and the world. Each room in the traditional hall is air-conditioned and furnished with beds, desks, chairs, dresser, local telephone service and closet. The men's residence halls include: Gibbs, and Sampson Halls. The residence hall for women include: Paddyfote Complex and Truth Hall.

Suite Style Living
Suite style living community in the FAMU Village consists of a single occupant bedroom and a shared personal bathroom with adjoining suitemate of same sex. Suite occupants enjoy the privacy of a single bedroom adjoined by a bathroom in one unit. The residents of the unit are responsible for the daily cleaning of the shared bathroom facility.

Apartments are located in Palmetto Street Complexes. The Palmetto Street South Apartments and Palmetto Street Phase III Apartments have two styles of apartments: four single bedrooms for four students, and three double bedrooms for six students. These apartments are furnished including cable, air conditioning, wireless internet access, computer lab, and utilities. Each apartment is equipped with a full kitchen and two full sized bathrooms.

On-line Application Process for Students
Students must be 18 years of age to complete the online process. Before starting the online process you must contact the HELP Desk to obtain your iRattler user name and password by calling (850) 412- HELP (4357) or email at **helpdesk@famu.edu.**
A) Go to https://irattler.famu.edu/psp/famepprd/EMPLOYEE/EMPL/h/?tab=PAPP_GUESTB)
B) Log in using your iRattler credentials
C) To begin the Housing Online Payment Process, click on "iRattler Campus Solutions"
D) To continue the Housing Online Payment Process, click on the "Self Service" link
E) Click on the "Campus Finances" link
F) Click on the "FAMU Advance Housing Agreement"
G) Select a term (i.e. Fall Semester 20xx)
H) After selecting a term, the next screen is the online housing agreement authorization. Please read over this page in its entirety and scroll to the bottom of the page.
I) In the "Housing Advance Payment Acknowledgement" box, click on and read the "FAMU Housing Agreement Terms and Conditions". (This link must be read in order to proceed)
a. Make sure an active email address is entered in the confirmation email box below. This email address will allow you to receive a confirmation notice and inform you on the next step to completing the online process.
b. After clicking on the agreement link, please carefully read agreement to be informed on University Housing's terms and conditions
J) Please read the acknowledgment message and click the "OK" button to proceed to the next screen or "Cancel" to cancel the posting process
K) Click "OK" to submit charge, the next page will list housing advance payment charge under "Outstanding Charges". Please enter the advance payment amount in the "Payment Amount" box and continue with steps 1 through steps 4 in the electronic payments/purchases process
a. Please note: Some scholarship recipients with room and board credit, will receive a message informing them that they have completed the first step in applying for housing
b. If you submitted a payment you should get the following message **"Congratulations, you have completed the steps in applying for online housing."**
L) You are required to wait one hour for processing. After waiting the hour you will receive an email with instruction on how to complete the room selection process. At this point you will be able to self-select your facility and room.

For any questions concerning the online process, please contact the housing office by telephone at (850) 599 – 3651 or (850) 599 – 3652

Housing Procedures

Residence Halls/Apartments
I. Each student desiring on-campus housing is required to submit a Housing Agreement, accompanied by the $350 advance payment cashier's check or money order (DO NOT SEND CASH), to the Housing Office. The new student is asked NOT to submit a HOUSING AGREEMENT until he or she has received a certificate of admission from the University director of admissions. Students living in the traditional residence halls are required to purchase one of the meal plans. Students assigned to the apartments have a choice with regards to being on the meal plan.

II. The applicant can view their housing assignment online at https://rms.famu.edu/. A housing assignment will be made only for a person who has been officially admitted and submitted a Housing Agreement and the $350 advance payment.

III. The Housing Agreement for traditional facilities is binding for two (2) academic semesters (fall and spring) in which the student is enrolled at the University. The contract terminates at the end of the spring semester but may be renewed, at the student's option, for the summer semester.

IV. AGREEMENT CANCELLATION - PRIOR TO OPENING DATE OF RESIDENCE HALLS: All students assigned to a residential facility are subject to the cancellation and fee schedule. Students with advanced payment deferments and students on scholarship are responsible for all provisions of the Florida A&M University's Housing Agreement; including the Agreement Cancellation and Fee Schedule. The Housing Agreement may be cancelled, provided the Housing staff receives a notice of cancellation in writing via certified mail in accordance with the below listed deadlines. Please notify the Housing staff promptly of your housing cancellation!

Fall Cancellation Policies and Procedures
Returning Students

DEADLINE DATES DUE	CANCELLATION FEE	REFUND
On or before June 1	$ 40	$310
June 2 - July 1	$200	$150
July 2 - August 1		
August 2 thru	$350	No Refund Due
Opening Day	$500	No Refund Due
After the Opening Day	The Entire Semester's Rent	
No Refund		

FRESHMEN STUDENTS

DEADLINES DATES DUE	CANCELLATION FEE	REFUND
On or before June 15	$ 40	$310
June 16 - July 1	$200	$150
July 2 - August 1	$350	No Refund Due
August 2 thru Opening Day	$500	No Refund Due
After the Opening Day	The Entire Semester's Rent	No Refund Due

Spring Cancellation Policies and Procedures

STUDENTS

DEADLINES DATES	CANCELLATION FEE	REFUND DUE
On or before November 1	$ 40	$310
November 2 - December 1	$200	$150
December 2 - December 15	$350	No Refund Due
December 16 thru Opening Day	$500	No Refund Due
After the		

Opening Day The Entire Semester's
Rent No Refund Due

Summer Cancellation Policies and Procedures

SESSIONS "A" AND "C" DEADLINE AND CANCELLATION FEE OPTION FORM APPLICANTS
On or before April 15 is $40
After April 15 is The Entire Session's Rent

NEW RESIDENTS APPLICANTS
On or before April 30 is $40
After April 30 is The Entire Session's Rent

SESSION "B"
ALL APPLICANTS
On or before May 31 is $40
After May 31 is The Entire Session's Rent

If you require a reasonable accommodation pursuant to the Americans with Disabilities Amendment Act (ADAA), please contact the Office of Equal Opportunity Programs at (850) 599-3076 at least 10 working days prior to the start of the event.

Student Health Services
FAMU Student Health Services (SHS) is an outpatient primary care center that provides services to currently enrolled FAMU students. Students are assessed a health fee that is included with tuition each semester that allows unlimited office visits and reduced costs for procedures, specialty services, lab tests and pharmaceuticals. SHS is staffed with Florida licensed physicians, advance registered nurse practitioners and other health care professionals to provide high quality, convenient, and affordable services.

Available services include:
- Treatment of minor illness or injuries;
- Immunizations;
- Chronic disease management (diabetes, asthma, sickle cell disease;
- Gynecological and physical examinations;
- Laboratory tests;
- Family planning services;
- Psychiatric medication management
- Allergy shots;
- Pharmacy;
- HIV testing; and
- Health education and outreach services

Student Health Services is open Monday through Friday from 8 a.m. to 4:30 p.m. and is closed on Saturday, Sunday and University observed holidays unless otherwise posted.

FAMU recommends that all students have health insurance and offers an affordable University sponsored health insurance plan that is available to students taking six (6) or more credits a semester. Students are not required to have insurance to use the clinic. SHS does not accept any insurance other than the University sponsored plan in payment for services. However, students may have charges placed on their financial account for payment prior to the next class registration period. Upon request, SHS will complete and submit insurance forms for reimbursement.

Student Health Fee
A per credit hour student health fee is assessed at the time of registration for each student. The health fee covers the cost of the office visit with clinical staff. The health fee does not pay for medical supplies, procedures, certain physical examinations, lab work, X-rays, or medications.

Immunization Requirements for FAMU Students
All incoming students are required to complete the FAMU Health History and Immunization form. This information must be submitted directly to Student Health Services and accepted before you will be allowed to register for classes. Please pay careful attention to immunization requirements. Students must provide the following:

1. MMR: Proof of two (2) Measles, Mumps, Rubella (MMR) shots received at least 28 days apart;
   a. Vaccinations must have been received after your first birthday;
   b. Vaccinations must have been received in 1968 or later, or

2. Proof of rubella, rubeola and mumps immunity by way of lab results.

Hepatitis B and Meningitis:
1. Proof of immunization for Hepatitis B or sign declination and
2. Proof of immunization for Meningitis or sign declination.

Recommended Immunizations: Other immunizations recommended by the American College Health Association (ACHA) and the Advisory Committee on Immunization Practices (ACIP) include: Varicella (chickenpox); Polio; Tetanus, Diptheria, Pertussis (Td or Tdap); Human papillomavirus (HPV); Influenza; Hepatitis A and Pneumonia.

Exemptions:
1. Students born prior to January 1, 1957 are exempt from MMR requirements;
2. Religious exemption must be accompanied by a signed statement and completion of the FAMU Religious Exemption Waiver signed by the student/guardian; and
3. A medical exemption requires specific, written documentation on office letterhead signed by a physician. The student/guardian must also complete the FAMU Permanent Medical Waiver form. Temporary medical deferments will be allowed if the condition is documented on official letterhead and signed by a physician, for pregnancy/possibility of pregnancy, breastfeeding or illness. The student is also responsible for completing the Temporary Medical Waiver form.

Students health history form and immunization documentation may be delivered in person; via mail to FAMU Student Health Services, 116 Foote-Hilyer Administration Center, Tallahassee, FL 32307, Attn: Immunizations; or faxed to 850-599-3067. Immunization forms and documentation may also be emailed to studenthealthcenter@famu.ed Florida A&M University

HIV/AIDS Policy
(abbreviated)

Florida A&M University is committed to providing students and employees with accurate information concerning the transmission and prevention of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS.)

A University committee representing a wide spectrum of interests has been organized. This committee is responsible for administering the policy on HIV/AIDS in specific cases and for coordinating the University's efforts in educating the FAMU community on HIV/AIDS.

This committee is chaired by the Medical Director of the Student Health Services. All inquiries and referrals should be directed to the Medical Director.

The HIV/AIDS Committee will evaluate each known student with HIV/AIDS on an individual case-by-case basis. There will be no

discrimination against such students by the University.
Appropriate measures reflecting official University policy will be taken to ensure legal safeguards, confidentiality and emotional support. Committee recommendations will be consistent with the welfare of both the individual patient and the University community.

Educational materials on HIV/AIDS can be obtained at Student Health Services. In addition, information on video tape is available for viewing in the health services. HIV testing is available at Student Health Services.

The Office of Counseling Services

The Office of Counseling Services is a unit within the Division of Student Affairs. The OCS is accredited by the International Association of Counseling Services (IACS). We provide a professional, confidential atmosphere where students can discuss academic and personal issues. The OCS is staffed by professional counselors who have earned a minimum of a master's degree in the counseling profession and are licensed. Our motto is "Here for You from Orientation to Graduation."

The mission of the Office of Counseling Services of Florida A&M University is to increase students' academic success, self-awareness, and knowledge of potential growth and challenges of collegiate experiences through outreach, counseling, consultation, and crisis intervention. The Office of Counseling Services exemplifies and seeks to foster within those whom they serve the following values: courage, diversity, ethics, excellence, respect, scholarship, and service.

Students seek our services for a variety of concerns. Some of those concerns include academic issues, stress management, relationships, personal development, intimacy issues, and other concerns related to the maturational process. Students also seek our services for assistance with depression, anxiety, and substance abuse issues.

Overview of Services

- Counseling: Students may participate in individual or couples counseling. Individual counseling is available for a student who appreciates confidential and individualized attention and couples counseling is available to assist students with concerns related to relationships.
- Academic Support: These services are for students who need assistance with remaining on task, developing an individualized schedule, and resisting the tendency to procrastinate.
- Support Groups: A variety of groups are available based on student interest and need. Some examples of groups include Life Class, Man Talk, and Substance Abuse Intervention.
- Workshops and Presentations: Staff members are available to present on requested topics. This service is available to student groups and organizations, faculty and staff members.
- Self-help Information: Come see our resource materials to assist you with self-help or to obtain educational brochures related to mental health.
- Screenings: Our staff conducts live screenings throughout the year for depression, anxiety, eating disorders, and substance abuse. Screenings can also be conducted on-line on our website at www.famu.edu/counseling.
- Psychiatric Consultation: For students who may come to the University already on medication or who may benefit from it while matriculating, a psychiatrist is available once a week for consultation and follow-up.
- Graduate Internship: Students who are nearing the completion of a master's degree in a clinical counseling profession and who have stellar letters of recommendation and a demonstrated commitment to professionalism may apply for an internship.

The OCS also oversees the University's Alcohol and Other Drug Program and the Victim Advocate Program.

The Alcohol and Other Drug Program is primarily responsible for educating the University community about the University's alcohol and other drug policy and educating students about the negative consequences of drug use and abuse, specifically as it relates to undermining academic progression.

The Victim Advocate Program is a 24-hour crisis response program that provides advocacy and counseling and facilitates other services for individuals who have been victims of a variety of crimes. This program is provided in collaboration with the FAMU Department of Campus Safety & Security.

All OCS services are free and available to currently enrolled students. Students may have up to twelve counseling sessions per semester. Our office is located in Sunshine Manor, and we are available Monday-Friday from 8 a.m. - 5 p.m. with extended hours on Thursdays from 5 p.m. - 7 p.m. by appointment only. To make an appointment, request a workshop, or to access our online services, contact us at www.famu.edu/counseling. You may also contact us by phone at (850) 599-3145.

The Career Center

The Career Center is an integral part of the total education process at the Florida A&M University. It is housed under the Division of University Advancement and reports to the Vice President of Advancement.

The Center assists in the fulfillment of the primary mission of Florida A&M University, namely, to prepare and provide opportunities for students to pursue meaningful careers in a variety of professional and occupational fields and/or pursue graduate studies. The mission of the Career Center is clearly defined: To provide comprehensive and progressive career planning, placement, and follow-up programs and services designed to augment the academic process and to assist students in successfully pursuing and managing meaningful career opportunities upon graduation and throughout the work life cycle. The following components comprise the make-up of the Career Center and have been established to operationalize the mission:

- Career Planning and Development
- Career Placement and Employer Relations
- Experiential Learning (co-op education, internships, summer employment, and part-time employment)
- Research and Alumni Services

The Center operates under the philosophic premise that career development is a lifelong process. The earlier students receive professional guidance through this process, the better prepared they will be to enter the work force. Consequently, the services and programs offered are developmental in nature and are designed to meet the needs of Florida A&M University undergraduate, graduate students and alumni.

Overview of Current Services

Career Counseling

The Career Center provides individual and group counseling for students to explore career interests and to develop employability skills needed for conducting successful job searches and subsequent career management.

Placement Services

(On-Campus Recruitment Program)
During the fall and spring terms, over 300 organizations visit the campus to recruit students for full-time employment, internships, co-op positions, summer and part-time employment. Information on graduate school admissions and private scholarship sponsors are also available.

Job Posting
Announcements for all types of employment opportunities are received daily. These announcements are sorted and placed on the Career Center Venomtrak system. Persons interested in these opportunities must apply directly to the employer at the address indicated, unless otherwise instructed.

The Career Center Community Connection
This program works with community-based organizations, public schools, prisons and churches to provide information forums on career development issues.

Rattler Insight
Industry partnership program which allows company representatives to facilitate professional development workshops and seminars for students and staff.

MyPlan
Computerized career guidance program which provides thoroughly researched databases of occupations, skills, interests, work-related values, educational programs, and more. The program examines the students' work-related values, explores options, and interprets relevant data in order to assist students in identifying academic and career choices.

Career Counseling for Athletes
The program is designed to work with the unique career planning and development needs of today's college athletes.

Dormitory Program for Career Awareness
Partnership program with the dormitory resident assistants designed to increase student awareness of the career planning process and requirements. Students participate in career planning workshops and seminars in their dormitories.

Fall Career Exposition
Approximately 90 employers with over 200 representatives participate in the Fall Career Expo. There are approximately 1,300 students who participate. This event is for students of all majors and classifications.

Spring Career Exposition
Approximately 70 employers with over 150 representatives participate in Spring Career Expo.

Experiential Learning Program
This program is designed to give students the opportunities to have hands-on experiences after graduation in a wide variety of majors. This program allows closer collaboration between The Career Center and the academic units on campus.

College Relations Visits
The Career Center hosted or participated in more than 20 employer site visits to FAMU each year. These visits are to establish new relationships or to renew relationships in order to increase recruiting presence on campus.

Teacher Interview Day
Approximately 30 school districts participated in TRD for fall and spring semesters. Students indicated that they have acquired multiple job offers.

Seminars/Receptions
Examples of some workshops are:

- The Resume & Business Letter That Sell
- Corporate Etiquette
- The Art of Interviewing
- Dress for Success
- The Plant Visit-A Way In or Out
- Negotiating Salary

The Career Center staff and representatives from various corporations sponsor these workshops throughout the fall and spring semesters.

Presentations/Receptions
Many of the employers who recruit at FAMU will host pre-recruitment presentations to provide students with the opportunity to acquaint themselves with their company and available career opportunities prior to the on-campus interview date. A question-and-answer period and reception usually follow each presentation. Employers may invite students to a dinner instead of the reception.

Technology Highlights

Computerized Student and Employers' Registration (VenomTrack)
This is a comprehensive system which allows the Center to automate various aspects of the recruiting process including student and employer information, job listing, interviewing schedules, placement and referrals. The system also tracks full-time, internship, co-op and summer placements.

Interactive Video Conferencing Technologies
The Career Center has employed two different types of video conferencing technologies: desktop and large conference or training. Desktop video conferencing is used to conduct interactive interviews with organizations that do not participate in the on-campus recruitment program. Large conference video is used to conduct professional development training workshops and seminars utilizing expertise from corporate sponsors or other University colleagues from around the country.

World Wide Web Services
The home page service provides students with the ability to register with The Career Center and to access employers' information via the World Wide Web. It also provides alumni the ability to access job information via the web.

Alumni Database Service
Alumni are eligible to participate in referring their resumes electronically to employers. Please contact the Career Center for more information.

Student Activities
The Student Activities program provides a myriad of activities designed to enhance the educational experience for students. In addition, the program coordinates the efforts of all student organizations as they promote opportunities for growth in group settings that enrich University life.

Programs - The University officially recognizes the activities of several organizations in providing for the social and recreational needs of students, developing their cultural and religious interests and broadening their contacts with the public and fellow students. The University encourages the widest possible participation consistent with scholarship requirements because it is within this area that leadership qualities are developed. The student activity committee is composed of students and faculty. The committee is concerned with the conduct of student organizations and activities with University policies relative to student organizations.

The University Union

The University Union is the campus center of student activities. Its objective is to fulfill the cultural, educational and recreational needs of the students of Florida A&M University. The Union

houses several venues. These venues include the following offices/ areas:

- Student Activities
- Student Government Offices
- University Post Office
- Television Room
- The Rattler's Edge
- New Student Orientation Office
- Faculty/Staff Dining
- Grand Ballroom
- Bowling Alley/Billiard Room
- Rattler's Den
- Office of Student Life
- Embassy Room
- Anne L. Cooper Room
- Student Judicial Affairs Office

Student Organizations

Student organizations at Florida A&M University contribute greatly toward the enrichment of the University's total program of growth and morale.

Each student organization must have the recognition of the University and remain subject to its jurisdiction. Although the University issues regulations to govern student activities, some authority has been delegated to student organizations.

General
Presidential Ambassadors
Honda Campus All-Star

Departmental
Association of Black Psychologists Student Circle
Association for Computing Machinery
Association for the Education of Young Children
Association General Contractor of America
Collegiate Music Educators National Conference
Environmental Science Student Organization
FAMU SBI
FAMU-FSU Engineers without Borders
Graduate Student Health Administration Association
Graduate Student Physical Therapy Association
Graphics Art Club
Health Science/Pre-Physical Therapy Student Association
National Society of Black Engineers
Phi Alpha Delta Law Fraternity
Public Relations Student Society of America
Respiratory Care Club
School of Allied Health Sciences Student Executive Council
Student Health Care Management Association
Student Health Informatics and Information Management Association
Student Respiratory Care Association
Student Occupational Therapy Association

Social Fraternities and Sororities
Panhellenic Council
Alpha Kappa Alpha Sorority
Alpha Phi Alpha Fraternity
Delta Sigma Theta Sorority
Iota Phi Theta Fraternity
Omega Psi Phi Fraternity
Phi Beta Sigma Fraternity
Sigma Gamma Rho Sorority
Zeta Phi Beta Sorority

Musical
FAMU Concert Choir
FAMU String Orchestra
FAMU Marching "100"
Sigma Alpha Iota Fraternity
University Gospel Choir

Military
National Society of Pershing Rifles

Literary
Journey Magazine
School of Architect Newsletter " Blue Print"

Service Organizations
Alpha Phi Omega Service Fraternity
Gamma Sigma Sigma Sorority
Gateways Book Club
Delta Sigma Pi International Fraternity
Divine D.I.M.E.S.
Eternal Legendary Queens
Phi Lambda Sigma
Project HOME
Sigma Gamma Lambda National Sorority
Sigma Rhomeo Fraternity
Teaching Our Youth Science

Religious
Adventist Ministries to College and University Students
Ambassadors for Christ
Baptist Collegiate Ministry
Catholic Student Association
College and Young Professionals
Every Nation Campus Ministry
FAMU Gospel Choir
House of Judah Christian Ministries
Presbyterian Fellowship Club

Honorary and Scholastic
Alpha Eta Honorary Society
Alpha Kappa Psi Business Fraternity
Alpha Rho Chi Fraternity
American Choral Dir. Assoc.
Epsilon Tau Sigma Honor Society
Golden Key International Honor Society
Honors Student Association
Kappa Epsilon Professional Fraternity for Women in Pharmacy
Kappa Delta Pi International Honor Society in Education
Kappa Psi Pharmaceutical Fraternity
Kappa Psi Psi Professional Sorority
Lambda Iota Tau
National Society of Collegiate Scholars
Pi Epsilon Theta Honor Society
Presidential Scholars Association
Rho Chi Honors Society
School of Allied Health Sciences Scholars Society
Trio Scholars Association
White and Gold Honor Society
Golden Key National Honor Society

Other
A Network of Our Own
Anime Club
Big Bend Area Club
Boyz of Poison
California Club
Caribbean Student Association
Chicago Club
Circle K International
Collaborative Minds Industries
DC Metro Club
DIVAS Dance Team
Essence Dance Theatre
FAMU Access Grid Task Force

FAMU Elite Dance Squad
FAMU Strikers
FAMU Venom Dancers
Graduate Student Association
Haitian Culture Club
Hatchett Law Club
House Arrest II
Images Modeling Troupe
Indiana Club
Institute of Electrical and Electronic Engineers
Jacksonville Student Alliance
Louisiana Club
Mahogany Dance Theatre
March of Dimes Collegiate Council
Miami Club
Michigan Club
Midwest Alliance Club
Mississippi Club
NAACP
National Council of Negro Women
National Organization for Women
North Eastern Vibe Organization
Operating in Unity and Truth
Proactive Volunteer Organization
Progressive Black Men
Rainbow Coalition Rattler Association of Chemist
Sankofa
SISTUHS
Student National Medical
Student National Medical Association-MAPS
Student National Alumni Association
Student Alliance for Cultural Development
Texas Club
Torque Dance Team
Vegetarian Student Alliance
Young and Striving

Department of Campus Safety & Security
The Department of Campus Safety & Security Public Safety (DPS) is a full service law enforcement agency providing safety, security, enforcement and parking services to the University community. Its mission is promoting a safe environment through student and staff interaction with emphasis on integrity, fairness, and professionalism. The mission also embraces the University's vision of enhancing humankind through the assurance of a quality University life in a stable environment, where security is balanced with freedom of movement and individual rights balanced with community needs as a service entity, police officers safeguard lives and property, preserve the peace, and prevent crime through enforcement of all federal and state laws, city ordinances, as well as University rules and regulations falling under its jurisdiction. Police service technicians patrol the campus to ensure parking compliance by University students, staff and visitors. To wit, citing, towing, and/or immobilizing vehicles illegally parked, improperly decaled, or otherwise posing a safety hazard on campus grounds.

The department offers engraving services on personal items (Operation ID) to assist in identifying items that may be stolen. The Department of Campus Safety & Security also provides auto lockouts and jump starts, we also offer crime prevention seminars are presented to new student and new employee orientation sessions, and, upon request, to campus groups and organizations.

Judicial Affairs
It is the desire of the Office of Judicial Affairs and Resource Services to work collaboratively with the larger Florida A&M University community to create a safe and secure scholarly atmosphere, where academic and personal pursuits are achieved through interpersonal care and respect for the academic mission of Florida A&M University.

The focus of the office is student success and development so we have designed our services to make sure that every student has the opportunity to learn and grow in an environment that encourages intellectual curiosity, compassion, and responsible community membership. Moreover, we have dedicated ourselves to providing every Florida A&M University community member with a fundamentally fair and just process for resolving alleged violations of the standards set forth by the University.

In addition, the Office of Student Judicial Affairs and Resource Services is designed to provide all community members with fair and accurate information and services regarding the Student Code of Conduct.
The Office of Judicial Affairs and Resource Services is responsible for all student disciplinary matters. This office is located in Suite 101, Student Union.

You may contact the Office of Judicial Affairs and Resource Services at (850) 599-3541 or (850) 599-3542, fax (850) 561-2169.

Office of the University Ombudsman
The mission of the Office of the University Ombuds is to enhance the collegial environment at the University. This includes providing confidential, impartial, independent and informal assistance to all members of the University community in addressing academic and non-academic student problems that established processes and procedures have not resolved. In addition, this office assists in preventing problems by recommending policy and procedural modifications necessary to achieve fair treatment.

The Office of the University Ombuds was established by the state legislature (1002.21(6) and 1006.51 Florida Statutes) to specifically accept appeals for access to courses and granting of school credit. It is located on the campus of Florida A&M University at the Foote-Hilyer Administration Center in Room 308. The office telephone number is (850) 599-3183 and facsimile number is (850) 561-2674. The website address is www.famu.edu/ombuds.

The University is committed to providing the best possible environment for all of its students, faculty and staff. We want to ensure that all constituents of the University are served well in all situations.

Campus Recreation Department
The Department of Campus Recreation offers an array of programs and services that foster wellness and positive socialization for the University Community. The department's mission is to meet the needs of a diverse student population by providing a comprehensive and innovative program of recreational, leisure and fitness activities. The department is comprised of many components: Facility Operations & Space Rentals, Intramural Sports, Sports Clubs, Fitness & Group Exercise, and Outdoor Adventures.

The department also encourages the development of leadership and life skills among its clientele through its student driven recreation, wellness and fitness programs. In addition, the department collaborates with the Student Government Association to ensure that the department is meeting the needs and expectations of the student body in general.

The Department of Campus Recreation is housed in the Hansel E. Tookes Student Recreation Center, an $11.5 million state-of-the-art facility on the corner of Wahnish Way and Osceola Street. The 60,000 sq. ft. facility includes: a 3,500 sq. ft. group exercise/aerobics studio; an 800 sq. ft. spinning room; a 16,000 sq. ft. weight training/cardio workout areas; a wellness suite; 2 basketball courts and 2 racquetball courts. In addition, there is a 30-acre outdoor facility with 2 flag football fields, 2 softball fields, 1 soccer field, 2 sand volleyball courts and 3 basketball courts. For further information, please call 599-3785 (administration) or

412-7281 (lobby).

New Beginnings Educational Research Center for Child Development (NB-ERCCD)
The New Beginnings Educational Research Center for Child Development (NB-ERCCD), within the Division of Student Affairs, provides quality childcare services for Florida A&M University's students, faculty, staff and community. The center also serves as an on-site facility for pre-internships, training, and research.

NB-ERCCD provides childcare services for children between the ages of 2.6 and 5; and after school care for children between the ages of 5 and 12. It offers an array of developmentally appropriate and culturally relevant curricula geared to the individual needs of children.

Normal operating hours are from 7:30 A.M. to 5:30 P.M. Evening care is available upon request. NB-ERCCD, an accredited center, is located at building 459 FAMU Way. You may contact us at (850) 599-3267.

Student Consumer Rights and Responsibilities

Discipline
The University President has delegated the responsibility of student discipline at the University to the Vice President for Student Affairs. However, the President's Office reserves the right to handle certain student disciplinary matters involving the welfare and safety of the University community. By Florida Statutes and Board of Governors' regulations, the President is the chief officer of the University and is responsible for establishing regulations governing student life. The University Board of Trustees must approve the regulations. Student disciplinary matters and/or appeals are handled in accordance with Regulation 2.012 Student Code of Conduct. Refer also to the University's Student Handbook, The FANG.

Non-Academic and Non-Disciplinary Grievances
Non-academic and non-disciplinary grievances are handled in accordance with the procedures or established protocol of the area or unit in question. An appeal of the area or unit's decision on the grievance should be directed to the vice president of the division in which the area or unit is located. The student may also seek the assistance of the University Ombudsperson who acts as a liaison between students and the University in resolving problems through referral and on-site service.

Academic Grievances
Each college, school and/or academic unit within the University has internal procedures for student grievances pertaining to academic matters. The student is normally expected to follow the procedures established by the college or school in which the student is pursuing a course of study; however, academic grievances regarding a course grade must be filed with the college or school in which the course is offered. The grievance procedures are available in the Office of the Dean of the respective school or college.

Due Process, Other Rights and Responsibilities
University Regulation 2.013 addresses the due process protections, other rights and responsibilities of students. Please refer to the below regulation.

Regulation
2.013 Due Process, Other Rights and Responsibilities

(1) The due process requirements contained below shall be applicable in all cases involving academic dishonesty and alleged violations of the Student Code of Conduct. Applicable definitions are found in Florida A&M University ("University") Regulation 2.012, Student Code of Conduct. All definitions not included herein or in Regulation 2.012, are in accordance with definitions found in the Merriam-Webster's dictionary located in the Office of Judicial Affairs. Due process as applied by the University and its schools, institutes, and colleges shall include, as a minimum, the following:

(a) The student shall be provided with written notice of the violations against him/her in sufficient detail and in sufficient time to prepare for a hearing or meeting before an appropriate committee, hearing body, or designated University official;
(b) The University shall establish a minimum number of days in advance of the hearing or meeting to present the written notice of violations, but in no case will this notice be less than five (5) business days, except in cases of emergency hearings as specified below;
(c) The student shall be entitled to a prompt hearing or meeting before an appropriate committee or hearing body, as established by the University or the student shall have the option to request resolution of the matter by an appropriate official designated by the University. The hearing shall normally be scheduled within fifteen (15) business days from receipt of a written, signed request by the student, except in cases of emergency hearings;
(d) The student and his/her advisor may inspect all of the information that will be presented against the student at least three (3) business days before the student disciplinary hearing or meeting, except in cases of emergency hearings where the student may inspect the information at least one (1) business day prior to the hearing. Failure of the student to request the information in sufficient time for the University to comply with the three
(3) business day timeframe shall constitute a waiver of the time requirement. The University shall also have the right to inspect any information the student intends to use at least three (3) business days before the student disciplinary hearing or meeting, except in cases of emergency hearings where the University may inspect the information at least one (1) business day prior to the hearing;
(e) The student may present information on his/her own behalf during the student disciplinary hearing or meeting;
(f) The student may hear and question adverse witnesses who testify at the hearing or meeting;
(g) The student shall not be forced to present testimony which would be self-incriminating; however, the University is not required to postpone the proceedings pending the outcome of a criminal or other outside proceeding. The University disciplinary proceeding is designed to address student behavior; therefore, alleged academic dishonesty or violations of the Student Code of Conduct will be addressed independently of any penalty imposed by a judicial or administrative body;
(h) The student may, at his/her own expense and initiative, have an advisor of the student's choice present during the student conduct process who may be an attorney. It is the student's responsibility to make appropriate arrangements for the advisor to attend the student conduct proceedings and the proceedings will not be delayed due to scheduling conflicts of the chosen advisor. The student is responsible for presenting his or her own information; therefore advisors are not permitted to speak or participate directly in any proceeding and an advisor may not act as a witness. An advisor's attempt to participate in a proceeding by speaking, presenting information or otherwise intervening in the proceeding is grounds for the advisor being required to leave. In such event, the proceeding will continue without the advisor present and the advisor's absence shall not require a delay or affect the validity of the proceedings;
(i) The decision of Responsible or Not Responsible shall be based solely on the information presented during the proceedings;
(j) The decisions of any committee, hearing body, or designated University official, shall be presented to the student in writing and within fourteen (14) business days following the proceeding;
(k) The student may appeal the decision of any committee,

hearing body, or designated University official, within ten (10) business days to the Dean of Students, or other designated University official, as appropriate;

(l) The student's enrollment status will remain unchanged pending the University's final decision in the matter, except where the Vice President for Student Affairs determines that the safety, health, or general welfare of the student, other students, or the University and/or its employees is involved. If a student's privileges are temporarily revoked as described in this paragraph, but the student is subsequently found not responsible for the violations, the University will:

1. Correct any record of the change in enrollment status in the student's permanent records and reports in a manner compliant with state and federal laws; and

2. Refund to the student a pro rata portion of any charges for tuition and out-of-state fees, as appropriate, if the temporary revocation or suspension of the student's ability to attend classes lasts for more than ten (10) business days;

(m) At the conclusion of the appeals process regarding violations of the Student Code of Conduct, the decision of the Dean of Students shall be final and the student's disciplinary matter shall be disposed through a final order signed by the Vice President for Student Affairs. The final order shall include notice to the student of the right to appeal to an external judicial forum, as appropriate.

(2) Additional due process protections as may be provided by regulation or policy of the Board of Governors shall also be applicable to cases involving academic dishonesty or violations of the Student Code of Conduct as indicated by said regulation. Refer to Board of Governors Regulation 6.0105.

(3) The Student Code of Conduct supersedes all other means of disciplining or removing students for behaviors prohibited by the University.

(4) Victim Rights. Victim is defined as the person harmed by a violation of the Student Code of Conduct committed by the charged student. Victims have the following rights:

(a) To have an advisor of the alleged victim's choice accompany him/her when presenting information to the hearing body and to any other relevant meetings held throughout the disciplinary process;

(b) To submit a victim impact statement to the hearing body. This information may be used only in the sanctioning phase of deliberations, if the charged student is found Responsible for the violations. If the charged student appeals the decision on the basis of severity of the sanction imposed, he/she will have the right to view the victim's impact statement upon written request;

(c) To have unrelated past behavior excluded from the hearing. The University Judicial Officer or chairperson of the hearing body will decide if such information is unrelated;

(d) To submit questions to the Judicial Office at least three (3) business days prior to the hearing. The University Judicial Officer will decide whether the questions are relevant and should be presented at the hearing;

(e) To have personal property returned to him/her if in the current possession of the University. The determination of when this property may be returned is left to the University Judicial Officer and/or University Department of Public Safety;

(f) To be notified of the hearing panel's decision after the Vice President for Student Affairs has issued a final order. This will not include the sanctions the charged student is required to complete; and

(g) For victims of sexual misconduct violations, please refer to additional rights noted in Regulation 2.012(8)(u).

(5) All students enrolled at the University shall be accorded the basic rights as set forth below:

(a) The right of respect for personal thoughts; the right of freedom from indignity of any type; the right to expect an education of the highest quality; and the right to make the best of one's talents and time toward the objectives which brought him/her to the University;

(b) The right to inquire about and to recommend improvements in University policies, regulations and procedures through established protocol;

(c) The right to participate in the self-governing process of student organizations pursuant to the regulations, policy, and procedures of the University and affected organizations;

(d) The right to be represented on University-wide committees in accordance with University procedures;

(e) The right of freedom of expression and peaceful assembly as defined and governed by the constitutions of the United States and the State of Florida and the regulations of the University;

(f) The right to participate in dialogue during public discussions that provide a diversity of opinions;

(g) The right to join University clubs and organizations for educational, political, social, religious and cultural purposes in accordance with the regulations, policy, and procedures of the University and the respective clubs and organizations;

(h) The right of due process as outlined above; and

(i) The right of freedom of press and media to publish and distribute materials in accordance with the Constitutions of the United States and the State of Florida and the regulations of the University.

(6) The University encourages its students to help maintain a healthy academic climate where students can intellectually grow and develop as mature and responsible individuals. Concomitant with student rights are student responsibilities. These responsibilities include but are not limited to the following:

(a) The responsibility of making the most of their educational opportunities by attending classes and laboratory periods on a regular basis and by completing all academic requirements, in a satisfactory manner, as stated in each course syllabus while taking advantage of the many opportunities provided in a University environment for all around personal growth, development, and maturation;

(b) The responsibility of knowing and observing all University policies, procedures and regulations (e.g. the General Catalog of the University and Student Handbook, including the Student Code of Conduct, etc.) as well as state and federal laws and requirements;

(c) The responsibility of taking the initiative in exercising the democratic processes to include, but not be limited to, voting and performing community or volunteer services;

(d) The responsibility of ensuring the orderly operation of the University through appropriate conduct in and out of the classroom; and

(e) The responsibility of assuming the consequences of one's own actions, and to avoid conduct detrimental in its effect upon fellow students and members of the University community.

Specific Authority: Article IX, section 7(c), Florida Constitution, sections 1006.60, 1006.61, 1006.62, Florida Statutes, Board of Governors Regulation 6.0105. History New October 1, 1975, Formerly 6C3-2.13, Amended September 14, 1987, Amended June 29, 2006, Amended July 15, 2013; Amended July 7, 2014.

Academic Affairs

College-Level Communication and Computation Skills

Florida Administrative Code Rule 6A-10.030(2), commonly known as the "Gordon Rule" specifies that all state universities require in all baccalaureate degree programs, satisfactory completion of

a. Six (6) semester hours of English coursework and six

(6) semester hours of additional coursework in which the student is required to demonstrate college-level writing skills through multiple assignments.

b. Six (6) semester hours of mathematics coursework at the level of college algebra or higher. For purposes of this rule, applied logic, statistics and other such computation coursework which may not be placed within a mathematics department may be used to fulfill three (3) hours of the six (6) hours required by this section.

c. A grade of "C" or above is required for each course.

Note: Students who enter Florida A&M University with Associate of Arts degree from a Florida College System institution or State University is considered to have satisfied Gordon Rule requirements.

COMMUNICATION

Students are required to complete 6 semester hours of English coursework.

Course Prefix #	Course Title	Credit Hours
ENC 1101	Freshman Communication Skills I	3
ENC 1102	Freshman Communication Skills II	3
	AAAB	
ENC 1121	Honors Freshman Composition I	3
ENC 1122	Honors Freshman Composition II	3

COURSEWORK WITH COLLEGE-LEVEL WRITING SKILLS

Students are required to complete 6 semester hours of additional coursework in which the student will demonstrate college-level writing skills through multiple assignments.

Course Prefix #	**Course Title**	**Credit Hours**
AFA 3104	The African Amer. Experience	3
AMH 2010	U.S. History 1492-1865	3
AMH 2020	U.S. History 1865-Present	3
AMH 2091	Intro. to African-American History	3
AML 2010	American Literature I	3
AML 3041	American Literature II	3
ARC 2701	Survey of Arch. History I	3
ARH 2000	Art Appreciation	3
ARH 2050	Art History I: Prehistory to Rennaiss.	3
ARH 2051	Art History II: Baroque to Modern	3
ENL 3013	English Literature to 18th Century	3
ENL 3034	English Literature II	3
EUH 3100	Ancient History	3
EUH 3120	Medieval History	3
HUM 2211	Historical Survey I	3
HUM 3214	Early Civil & the Classical World	3
HUM 3217	Judeo Christian & Medieval Cultures	3
HUM 2230	Historical Survey II	3
HUM 3237	Counter Reformation Bar. & Enlight.	3
HUM 3238	The European Rennais. & Reform.	3
HUM 3244	19th Cent. Rev.: Historic & Artistic	3
HUM 3255	Modern and Post-Modern Culture	3
HUM 3401	Asian Humanities	3
HUM 3421	African Americans in Film	3
HUM 3425	African Humanities	3
LIT 2110	Intro to Literature I	3
LIT 2120	Intro to Literature II	3
LIT 3196	African-Caribbean Literature	3
LIT 3824	Latino Literature	3
MMC 2000	Introduction to Mass Media	3
MUH 3116	Jazz History	3
MUH 3211	History and Literature of Music I	3
MUH 3212	History and Literature of Music II	3
MUL 2111	Intro. to Music I	3
MUL 2112	Intro. to Music II	3
PHH 2102	Ancient and Medieval Philosophy	3
PHI 2010	Intro to Philosophy	3
PHI 2101	Intro to Logic	3
PHI 3601	Ethics	3
PHI 2801	Intro. to Aesthetics	3
PHM 3120	Contemporary Black Social Phil.	3
REL 2000	Intro. to Religion	3
REL 3120	Religion in American Culture	3
REL 2135	Black Religion in America	3
REL 3145	Women in Religion	3
REL 2210	Intro. to Old Testament	3
REL 2240	Intro to New Testament	3
REL 2320	Western World Religion	3
REL 4440	Contemporary Religious Thought	3
THE 2000	Intro. to Theatre	3
THE 3112	Theatre History I	3
THE 3113	Theatre History II	3
THE 3232	Black Theatre/Film & Rel. Studies	3
THE 3235	Cont. Black Theatre	3
WOH 1012	History of Civilization	3
WOH 1022	Hist. of Civil.: Ren. to 1848	3

MATHEMATICS

Students are required to complete a minimum of 6 semester hours of mathematics coursework from the following approved course list:

Course Prefix #	**Course Title**	**Credit Hours**
MAC 1105	College Algebra	3
MAC 1114	Alg. & Trig Functions	3
MAC 1147	Pre-Calculus Math	4
MAC 2223	Calculus for Arch	4
MAC 2233	Calculus for Business I	3
MAC 2234	Calculus for Business II	3
MAC 2311	Calculus I	4
MAC 2312	Calculus II	4
MAD 2120	Finite Mathematics	3
MGF 1106	Liberal Arts Math I	3
MGF 1107	Liberal Arts Math II	3
MTG 2206	College Geometry	3
STA 2023	Intro to Probability & Stat I	3

Note: Any 3 credit hour college-level applied logic, statistics and other such computation coursework may be used.

General Education Approved Course List

All students enrolled in the lower division programs of the university must complete the following sequence of general education courses for a total of 36 credit hours. A minimum grade of "C" is required for all general education courses.

COMMUNICATION [6]

Course Prefix #	Course Title	Credit Hours
ENC 1101	Freshman Communication Skills I	3
ENC 1102	Freshman Communication Skills II	3
OR		
ENC 1121	Honors Freshman Composition I	3
ENC 1122	Honors Freshman Composition II	3

HUMANITIES [6]

Complete two courses from the following approved humanities course list

Course Prefix #	Course Title	Credit Hours
AMH 2010	U.S. History 1492-1865	3
AMH 2020	U.S. History 1865-Present	3
AMH 3571	Afro-American History to 1865	3
AMH 3572	Afro-American History Since 1865	3
AML 2010	American Literature I	3
AML 3041	American Literature II	3
AML 4154	Modern American Poetry	3
ARC 2701	Survey of Arch. History I	3
ARH 2000	Art Appreciation	3
ARH 2050	Art History I: Prehistory to Rennaiss.	3
ARH 2051	Art History II: Baroque to Modern	3
ARH 3610	American Art	3
ARH 4410	Modern Art History	3
ARH 4614	African-American Art	3
ENL 3013	English Literature to 18th Century	3
ENL 3034	English Literature II	3
EUH 3100	Ancient History	3
EUH 3120	Medieval History	3
EUH 3501	History of England, 1485-1714	3
HUM 2211	Historical Survey I	3
HUM 3214	Early Civil & the Classical World	3
HUM 3217	Judeo Christian & Medieval Cultures	3
HUM 2230	Historical Survey II	3
HUM 3237	Counter Reformation Bar. & Enlight.	3
HUM 3238	The European Rennais. & Reform.	3
HUM 3244	19th Cent. Rev.: Historic & Artistic	3
HUM 3255	Modern and Post-Modern Culture	3
HUM 3401	Asian Humanities	3
HUM 3421	African Americans in Film	3
HUM 3425	African Humanities	3
HUM 3546	Caribbean Literature & Popular Cult.	3
HUM 3930	Special Topics in Humanities	3
LIT 2110	Intro to Literature I	3
LIT 2120	Intro to Literature II	3
LIT 3196	African-Caribbean Literature	3
LIT 3824	Latino Literature	3
MMC 2000	Introduction to Mass Media	3
MUH 3116	Jazz History	3
MUH 3211	History and Literature of Music I	3
MUH 3212	History and Literature of Music II	3
MUH 3561	Afro-American Music	3
MUL 2111	Intro. to Music I	3
MUL 2112	Intro. to Music II	3
PHH 2102	Ancient and Medieval Philosophy	3
PHH 3400	Modern Philosophy	3
PHH 3600	Contemporary Philosophy	3
PHI 2010	Intro to Philosophy	3
PHI 2101	Intro to Logic	3
PHI 3601	Ethics	3
PHI 2801	Intro. to Aesthetics	3
PHM 3120	Contemporary Black Social Phil.	3
REL 2000	Intro. to Religion	3
REL 3120	Religion in American Culture	3
REL 2135	Black Religion in America	3
REL 3145	Women in Religion	3
REL 2210	Intro. to Old Testament	3
REL 2240	Intro to New Testament	3

Course Prefix #	Course Title	Credit Hour
REL 2320	Western World Religion	3
REL 3310	Eastern World Religions	3
REL 3383	Caribbean Religion & Culture	3
REL 4440	Contemporary Religious Thought	3
THE 2000	Intro. to Theatre	3
THE 3112	Theatre History I	3
THE 3113	Theatre History II	3
THE 3232	Black Theatre/Film & Rel. Studies	3
THE 3235	Cont. Black Theatre	3
WOH 1012	Hist. Of Civil.	3
WOH 1022	Hist. Of Civil.: Ren. to 1848	3

MATHEMATICS [6]

Complete two Mathematics or computation coursework at or above College Algebra from the following approved course list

MAC 4211	Advanced Calculus	4
MAC 1105	College Algebra	3
MAC 1114	Algebraic and Trigonometric Functions	3
MAC 1147	Pre-Calculus Mathematics	4
MAC 2223	Calculus for Architecture	4
MAC 2233	Calculus for Business	3
MAC 2234	Calculus for Business II	3
MAC 2311	Calculus I	4
MAC 2312	Calculus II	4
MGF 1106	Liberal Arts Mathematics I	3
MGF 1107	Liberal Arts Mathematics II	3
MGF 2212	Finite Mathematics (MAD 2120)	3
MTG 2206	College Geometry	3
STA 2023	Intro to Probability & Statistics I	3

NATURAL SCIENCES [6-8]

Students are required to complete 6-8 credit hours from the following approved Natural Science course list. Science majors are required to complete two courses with corresponding laboratory for each science course for a total of 8 semester credit hours.

Course Prefix #	Course Title	Credit Hour
AEB 2104	Economics of Agric and Natural Resources	3
AST 1002	Astronomy	3
AST 1002L	Astronomy Lab	1

Course Prefix #	Course Title	Credit Hour
BOT 1010	Elementary Botany	3

BOT 1010L	Elementary Botany Lab	1
BSC 1005	Biological Science	3
BSC 1005L	Biological Science Lab	1
BSC 1010C	General Biology I	3
BSC 1010L	General Biology I Lab	1
BSC 1011C	General Biology II	3
BSC 1011L	General Biology II Lab	1
CHM 1015	Fundamentals of Chemistry	3
CHM 1015L	Fundamentals of Chemistry Lab	1
CHM 1030	Intro Chemistry for Health Sci	3
CHM 1030L	Intro Chemistry for Health Sci lab	4
CHM 1031	Chemistry for Health Sciences	3
CHM 1031L	Chemistry for Health Sciences Lab	1
CHM 1045	General Chemistry I	3
CHM 1045 L	General Chemistry I Lab	1
CHM 1046	General Chemistry II	3
CHM 1046L	General Chemistry II Lab 1	
ENY 2570	Prin of Environmental Entomology	3
EVR 1001	Intro Environmental Sciences	3
GLY 2001	Intro Earth & Space Science	3
HUN 2401	Human Nutrition	3
ISC 1006	Wide World Science I	3
ISC 1006L	Wide World Science I	1
ISC 1007	Wide World Science II	3
ISC 1007L	Wide World Science II Lab	1
PHY 2048	General Physics I	3
PHY 2048L	General Physics I Lab	1
PHY 2049	General Physics II	3
PHY 2049L	General Physics II Lab	1
PSC 1121	Physical Science	3
PSC 1121L	Physical Science Lab	1

SOCIAL SCIENCES [6]
Complete AMH 2091 Introduction to African American History or any AFA prefix course and one course from the following approved course list;

GEA 2000	World Geography	3
ANT 2000	Introduction to Anthropology	3
ECO 2013	Principles of Economics I	3
ECO 2023	Principles of Economics II	3
POS 2001	Introduction to Political Science	3
POS 2041	American National Government	3
POS 2112	American State and Local Government	3
PSY 2012	Introduction to Psychology	3
SYG 2000	Introduction to Sociology	3

Note: Students who satisfied general education from a Florida public institution prior to attending Florida A&M University are exempt from completing AMH 2091 course for general education purposes

ELECTIVES [4-6]

SPC 2608	Public Speaking	3
HSC 1100	Health Modern Living	3
CGS 2060C	Computer Literacy I	3

NOTE:
1. Students who completed only 6 credit hours of natural science may complete additional 2 credit hours of electives
2. Each School/College may require students to be computer literate by requiring them to take an appropriate course or by certifying that the student has mastered certain computer competencies specified by the school/college.
3. Students must complete a total of 36 semester credits of general education courses.

Honors Program
Honors Center Mission

The mission of the Florida Agricultural and Mechanical University Honors Center is to provide a series of challenging courses and academic enhancement experiences for undergraduate students who excel. Enhancement of academic performance in critical thinking skills, in essence, will lead to consummate intellectual engagement and strong research orientation as a launch to both graduate and professional schools, as well as career paths. The center stresses four major areas of concentration: academic achievement, development of leadership potential, community service and cultural enrichment.

Honors Program Objectives
1. To create an environment where academically talented students can develop and thrive.
2. To provide mentoring, nurturing and academic support to assist students in achieving their full potential
3. To promote students' interest in international education.
4. To provide opportunities for internships and service learning involvement.

Honors Program Admission Requirements

The University Honors Center has a separate admissions process from the University as a whole. The criteria for admittance into the University Honors Center depend on a student's classification and enrollment status.

First Time in College
All high school graduates with a minimum GPA of 3.50 on a 4.0 scale, and 1700 on the SAT or 27 on the ACT, are invited to apply for admission to the University Honors Center. Complete application packets must be submitted with the following information:
- Two letters of recommendation
- A copy of the high school transcript
- Writing sample

Current and Transfer Students

Continuing college and transfer students, and community college graduates with AA degrees, with a strong academic background and/or a minimum GPA of 3.20 on a 4.0 scale may also apply for admission to the University Honors Center. The latest point at which students may apply for admissions to the center is the first semester of their junior year. In order to remain in the center, students must maintain a 3.0 GPA. Qualified applicants are accepted from all disciplines.

OFFICE OF INTERNATIONAL EDUCATION AND DEVELOPMENT

The Office of International Education and Development (OIED), a component of the Division of Academic Affairs, supports and promotes the internationalization of the University through the incorporation of international curriculum development, and

academic enhancement activities related to teaching, research, and public service. OIED seeks to promote the University's relevance in an interdependent global village and to facilitate greater appreciation of cross-cultural relations and global issues. OIED strives to establish and maintain a University environment that encourages faculty, staff, and students to participate in a process that enhances and broadens the global role of the University. Services to students, faculty, and staff are provided through three units: (1) International Student and Scholar Services; (2) Education Abroad and Exchange Programs; and (3) International Research and Development. If you need any of these services, please contact the Office of International Education and Development, located in 305 Perry-Paige North, call 850-599-3295/3562, or visit FAMU's International Education's webpage.

International Research and Development

The International Research and Development Department (IRD) facilitates the development of international collaborative projects by providing technical assistance to enable faculty, staff, and students to become involved in international collaborative research and development activities. IRD assists in identifying and/or coordinating international project proposals with faculty and staff. It establishes contacts and conducts fact finding activities with foreign universities that result in capacity building projects or teaching exchanges. It facilitates the engagement of faculty in exciting international capacity building projects and research activities with foreign universities and governments. The staff monitors or assists in coordinating collaborative international projects to be implemented by faculty and staff. It networks with professional international consortia, organizations and government agencies for grants to support FAMU internationalization. IRD has responsibility of developing and maintaining all international Memoranda of Agreements (MOAs) and is the official custodian of MOAs approved by FAMU with entities abroad. In addition, we create collaborative relationships with foreign institutions to foster two plus two agreements for enrollment of undergraduate students, as well as, admissions to masters and doctoral programs. In addition, IRD administers and processes all immigration documents for transferring F-1 students and J-1 research scholars to change their visa status to H-1B temporary specialty employment visas; as well as, review and process permanent resident visa petitions.

International Student and Scholar Services (ISSS) Department
The International Student and Scholar Services Department provides resources to facilitate the adjustment process of international students in their new cultural environment. ISSS coordinates the Florida West Africa Institute (FLAWI) and monitors the programs of students supported by other institutions in Florida. ISSS administers and oversees all international F-1 and sponsored J-1 students enrolled at FAMU and provides assistance to faculty and staff desiring to change their visa status or transfer to another U.S. institution. In addition to administrative support and referral services related to immigration and other needs, ISSS offers a range of programs and activities to advance the overall educational experience of international students and scholars at FAMU. All incoming international students and scholars are provided orientation to the University and the local community. The staff provides international students and scholars individualized advising related to academic issues, housing, health issues and other concerns. It also sponsors outreach initiatives, which include a host family program and participation in the community international awareness activities. OIED also sponsors the International Student Union Association. In addition, international students and scholars are encouraged to actively participate in both international and domestic cultural events and training opportunities to include, but not limited to: employment career fairs; foreign employment and income tax workshops; study abroad, research and internship opportunities; leadership conferences; international awareness and education week; annual Charles Billings International Reception hosted during international education week; and presenters in classrooms and cultural events campus-wide and the greater community; and processing of immigration documents for travel, study, research, and employment.

Education Abroad and Exchange Programs

The Education Abroad and Exchange Programs (EAEP) Department, a Title III funded activity, provides FAMU students a substantial array of resources to help them identify opportunities for study, travel and work abroad. The International Resource Center consists of printed directories, guidebooks, pamphlets, brochures, a TV monitor and a computer to access electronic bookmarked websites of diverse education abroad opportunities. Education abroad consists of service learning, traditional year-long or semester study abroad, internships, departmental-sponsored short-term study, research and outreach. All study abroad courses are taught by the respective host institution faculty. The education abroad staff organizes several short-term academic excursions with a service learning component during our spring breaks or summer sessions for faculty, staff, and students. The enriching activities can be customized to the faculty member's class syllabi or a department research project. FAMU is a member of the College Consortium for International Studies (CCIS), a partnership of accredited two and four year U.S. and foreign colleges and universities that share a commitment to developing a variety of international programs. Through its consortia affiliations with CCIS and the Council for International Education & Exchanges, students can study in over 100 countries and in most fields. Applications are processed through the Office of International Education and Development.

The education abroad staff seeks to identify opportunities for faculty and staff to study, teach, or conduct research abroad. They assist with travel arrangements, travel document issues, pre-departure orientation, and other concerns related to travel abroad. The staff maintains a collection of resources for faculty and staff and regularly informs them through the OIED Newsletter, flyers, etc., of the various opportunities available through public and private agencies for exchanges, research opportunities, and technical assistance to other universities. The Diplomat-In-Residence (DIR) Program is another component within OIED. Since 2001, FAMU has hosted eight Diplomats-in-Residence; a program supported by the U.S. Department of State to encourage more students to pursue careers in the Foreign Service and foreign affairs and prepares students to compete for prestigious international and State Department internships. The DIR program is central to the effort to recruit the best and brightest to represent America's rich diversity to the world.

Student Records Management Procedures
The Purpose
The Family Educational Rights and Privacy Act of 1974, most often referred to as FERPA, deals specifically with the education records of students, affording them certain rights with respect to those records. For purposes of definition, education records are those records which are:

1) Directly related to a student and
2) Maintained by an institution or a party acting for the institution.

FERPA gives students who reach the age of 18 or who attend a post-secondary institution the right to inspect and review their own education records. Furthermore, students have other rights, including the right to request amendment of records and to have some control over the disclosure of personally identifiable information from these records.

FERPA applies to the education records of persons who are or have been in attendance in post-secondary institutions, including students in cooperative and correspondence study programs. FERPA does not apply to records of applicants for admission who are denied acceptance or, if accepted, do not attend an institution.

Furthermore, rights are not given by FERPA to students enrolled in one component of an institution who seek to be admitted in another component of an institution.

The Policy
Florida Agricultural and Mechanical University (FAMU) shall comply with the Family Educational Rights and Privacy Act (FERPA, also known as the Buckley Amendment) – 20 U.S.C. ~ 1232g – of 1974, which gives enrolled students the right to:
1. Review and inspect their education records;
2. Challenge and seek to amend education records that the student believes are inaccurate or misleading;
3. Consent to disclosures of personally identifiable information contained in their educational records, except to the extent that FERPA allows disclosures without consent; and
4. Complain to the U.S. Department of Education concerning alleged violations by FAMU of any such rights.

Pursuant to FERPA requirements, some personally identifiable student information, designated by law as "directory information," may be released to third parties by FAMU without prior consent of a student unless the student files a written request with the FAMU Office of the Registrar to restrict directory information access.

FAMU has designated the following as directory information:

- The name of a student who is in attendance or who has been in attendance
- The local, home address of a present or former student)
- The telephone number of a present or former student
- Date and Place of Birth of a present or former student
- The major field of study of a present or former student
- Dates of attendance
- Enrollment Status
- Participation in Officially Recognized collegiate sports
- Weight and height of athletes
- Degrees and academic honor awards received and pertinent dates
- Most recent educational institutions attended prior to FAMU

The following information is not considered directory information and may not be released or disclosed in any way (except to a school official with a legitimate interest, or to a third party with signed and dated consent from the student or former student):

- Student Identification Number
- Social Security Number
- Ethnicity/Nationality
- Gender

An enrolled student may select Privacy (refuse to permit disclosure of "directory information'). To do so, the student must notify the Office of the Registrar in writing if he/she refuses to permit the University to disclose such information. The University will not release any further disclosures of directory information about the student without the student's prior written consent except to the extent authorized by FERPA or other State or Federal laws.

All custodians of a student's education records and all University employees/agents shall comply with FERPA and follow strict practice that information contained in a student's education record is confidential and shall not be disclosed without the prior written consent of the student except as otherwise provided by FERPA. FERPA exceptions are outlined in the policy and procedures herein.

Regarding the disposition of records held pertaining to a deceased student, in accordance with FERPA, it is the policy of FAMU that the privacy interests of an individual expire with that individual's death.
FAMU publishes annually a notice of primary rights for enrolled students.

All University employees who manage or have direct or indirect access to student education records are held responsible for reading and understanding the policy. Furthermore, all employees who manage or have direct or indirect access to student education records are responsible for following security practices established by the University, Colleges, or departments.

The University Registrar has been designated as the FERPA Compliance Officer for the University. Further information about FAMU's policy and procedures with respect to privacy of student records may be obtained from the Office of the Registrar.

Location of Education Records
All information provided by a student to the University for the use in the educational process is considered part of the student's education record. Information may fall into one of the following categories:

- Admission records are located in the Office of Admissions and Recruitment, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Admissions and Recruitment, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Suite G-9, Tallahassee, FL 32307.
- Cumulative academic records are located in the Office of the Registrar, Foote-Hilyer Administration Center, and the custodian of such records is the University Registrar, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Room 112, Tallahassee, FL 32307.
- Financial aid records are located in the Office of Financial Aid, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Financial Aid, Florida Agricultural and Mechanical University, Foote-Hilyer Administration Center, Suite 101, Tallahassee, FL 32307.
- Student financial records are located in the Office of Student Financial Services, Foote-Hilyer Administration Center, and the custodian of such records is the Director of Student Financial Services, Florida Agricultural and Mechanical University, Suite G-7, Tallahassee, FL 32307.
- Student placement records are located in the Career Center, Student Union Plaza and the custodian of such records is the Director, Career Center, Florida Agricultural and Mechanical University, Student Union Plaza Suite 118, Tallahassee, FL 32307.
- College-based testing records are located in the Counseling and Assessment Center, and the custodian of such records is the Director, Counseling and Assessment, Florida Agricultural and Mechanical University, University Counseling Center, Tallahassee, FL 32307.
- College records are located in the college dean's office and/or departmental offices of each college and in faculty offices at each college or department and the custodian of such records is the appropriate dean, department chairperson, professor, instructor or advisor.
- Disciplinary records are located in the Office of Judicial Affairs, Student Union Plaza, and the custodian of such records is the Associate Vice President for Student Affairs, Florida Agricultural and Mechanical University, 308 FHAC, Tallahassee, FL 32307.
- Disability records are located in the Learning Development Evaluation Center, and the custodian of such records is the Director, LDEC, Florida Agricultural and Mechanical, Orr Drive, Suite 555, Tallahassee, FL 32307.
- International student records are located in the Office of

International Services, HFFM, and the custodian of such records is the Provost, Florida Agricultural and Mechanical University, 301 Foote-Hilyer Administration Center, Tallahassee, FL 32307.

Excluded Records
While most student records maintained by the University are considered to be education records, those listed below are specifically excluded:

• Sole possession records or memory aids created and maintained for private use with limited access to anyone other than the creator;
• University Police records maintained solely for law enforcement purposes;
• University employment records for employment not dependent on student status and does not result in academic credit or a grade;
• Records created by a medical or mental health professional to be used only for providing treatment to a student;
• Alumni records if they contain only information related to an individual after the individual is no longer a student.

Legitimate Educational Interest
University officials shall have access to student education records for legitimate educational purposes when a need to know has been demonstrated by those officials who act in the student's educational interest. This includes faculty, administration, student employees, clerical and professional employees and other persons who manage student records information. Any school official who needs information about a student in the course of performing instructional, supervisory, advisory or administrative duties has a legitimate educational interest.

Exceptions to Student Consent for Release of Records
All custodians of a student's education records and other University employees/agents may not disclose student information to third parties without the student's prior written consent except as provided in this section:

• Under the following circumstances, University officials may make disclosures of personally identifiable information contained in the student's education records without the consent of the student:

a) To officials of another college or University where the student seeks or intends to enroll on the condition that the institution makes a reasonable effort to inform the student of the disclosure unless the student initiates the transfer.
b) To certain federal and state officials who require information in order to audit or enforce legal conditions related to programs at the University supported by federal or state funds.
c) To parties who provide or may provide financial aid to the student.
d) To an individual or organization under written contract with the University or FLDOE for the purpose of conducting a study on the University's behalf for the development of tests, the administration of student aid, or the improvement of instruction.
e) To an outside contractor who is a "party acting on behalf of the University and is performing a service which the University would otherwise have to perform for itself."
f) To accrediting organizations to carry out their accrediting functions.
g) To parents of an enrolled student if the parents claim the student as a dependent under the Internal Revenue code of 1954. The University will exercise this option only on the condition that the evidence of such dependency is furnished to the University Registrar.
h) To comply with a lawfully issued subpoena or judicial order of a court of competent jurisdiction. The University will make reasonable effort to notify the student before the disclosure -unless otherwise noted by the judicial document.
i) The result of a disciplinary proceeding may be released to the victim on the student's crime of violence.
j) To comply with an ex parte order from the Office of the Attorney General (or designee).
To state or local officials in compliance with state laws adapted prior to November 19, 1974.
• University officials are authorized to make necessary disclosures from student education records without the prior consent of the student in a health or safety emergency if the University official deems:
a) The disclosure to be warranted by the seriousness of the threat to the safety or health of the student or other persons; or
b) The information disclosed is necessary and needed to meet the emergency; and
c) Time is an important and limiting factor in dealing with the emergency.

All requests for disclosure under the above circumstances, where the University may disclose personally identifiable information without the student's prior consent to third parties other than its own officials, will be referred to the University Registrar or the appropriate records custodian.

Parental Access
At the post-secondary level, parents have no inherent rights to inspect a student's education records. The right to inspect is limited solely to the student. Records may be released to parents only under the following circumstances:

a) Through the written consent of the student
b) In compliance with a subpoena,
By submission of evidence that the parent declares the student as a dependent on their most recent Federal Income Tax form (IRS Code of 1954).

Written Consent

• University officials may not disclose personally identifiable information contained in a student's education record except directory information or under the circumstances listed above, except with the student's prior written consent. Written consent must include the following:
a) A specification of the information the student consents to be disclosed
b) The person or organization or the class of persons or organizations to whom the disclosure may be made; and
c) The purpose of the disclosure
d) The student's signature and date (within the last calendar year) of the consent.
• The student may obtain a copy of any records the University disclosed pursuant to the student's prior written consent. The University will not release information contained in a student's education records, except directory information, to any third parties except its own officials, unless those third parties agree in writing that they will not redisclose the information without the student's prior written consent.

Additional Guidelines for Faculty

• The posting of grades by the student's name, institutional student identification number or social security number is not allowed. Grades cannot be posted via paper source or electronic source unless the instructors and others who post grades use a system that ensures FERPA requirements are met.
• Prohibition on disclosure of personally identifiable information from an education record of a student applies to any kind of nondirectory information. Examples include performance in class, grades, attitude, motivation, abilities and background that are conveyed in writing, in person or over the phone to third parties.

Challenge of Contents of Education Records
Florida A&M University provides any student with an opportunity to challenge and amend the contents of his/her education records which the student considers to be inaccurate, misleading, or otherwise in violation of their privacy or other rights. Challenge requests must be submitted to the University Registrar.

Protocol for Records Storage and Disposal
Once University officials who are designated custodians of student records have established the following protocol for ensuring that student records being collected, accessed, stored, printed, destroyed or otherwise used are physically secure from unauthorized access.

Each person using electronic systems to access records must have a unique account with a password assigned for his/her own use. The account name and passwords used to access these systems must not be written down, told to others, or made available in any way for use by other persons. Account holders must change their passwords frequently.

Computers used to access electronic records systems must not be left unattended. Computers located in public areas must be positioned so that visitors cannot view.

Printers must not be publicly accessible and must be attended so that printed materials cannot be seen or taken by authorized persons. To reduce this risk, printed materials must be retrieved from the printer promptly.
Printed or copies of records stored on electronic media must be kept in locked drawers or cabinets when not being used. Records being used must be returned to locked storage areas overnight. Central filing systems must be secured behind locked doors when they are not attended.

Printed records must be shredded prior to recycling. Copies of records stored on electronic media, such as computer hard drives, CD-ROM, or diskette must be permanently deleted from these media before the media is disposed of. If this is not possible, the media itself should be destroyed and made unusable prior to its disposal.

Definition of Terms
Student – An individual for whom the educational institution maintains records. The term refers to a person who is or in the past has received academic credit from the University. "Student" does not include an individual who is or has been enrolled in non-credit, Continual Learning programs.

Enrolled Student – For the purpose of this document, this term refers to a student who has satisfied all the institution's requirements for attendance in course offered for academic credit at the institution and is statistically represented in federal, state and/or local reports maintained by the educational institution.

Education Records (Academic Records) – Any records maintained by the University and employees/agents of the University which contain personally identifiable information directly related to a student record, and used herein, includes any information or data recorded in any medium, including but not limited to handwriting, print, magnetic tapes and disks, film, microfilm and microfiche.

Student Records – Any information or data collected, recorded, or maintained in any medium (e.g., handwriting, print, tapes, films, files, microfilm, microfiche, and any other form of electronic data storage).

Directory Information – Information contained in an education record of a student that generally would not be considered harmful or an invasion of privacy if disclosed. Items that can never be identified as directory information are a student's social security number, citizenship, gender, religious preference, grades and GPA.

Personally Identifiable Information – Data or information which includes:
- The name of the student, the student's parents, or other family members;
- The student's addresses;
- A personal identifier such as a social security number or any generated student number; or
- A list of personal characteristics or other information that would allow the student's identity to be traced.

School Officials (University Officials) – Those members of an institution who act in the student's educational interest within the limitations of their "need to know." Officials may include faculty, administration, clerical, and professional employees and other persons, including student employees or agents, who manage student education record information.

The University has also defined a school official to be any person currently serving as:

- A member of the Florida Board of Governors (FBOG);
- As a temporary substitute for a staff member or faculty member at FAMU for the period of his/her performance as a substitute member; and
- A member of the FBOG or under contract to the University to perform a special administrative task. Such persons shall be considered to be school officials for the period of their performance as an employee or contractor.

University Libraries

The Samuel H. Coleman Memorial Library and its branches provide information services for the University Community. Branch libraries include the Science Research Center Library, the Journalism and Graphic Communication Resources Center, and the Architecture and Engineering Technology Library. The University Libraries also support the FAMU/FSU College of Engineering Library and the FAMU Developmental Research School. The College of Law Library, an independent library, is operated under the auspices of the College of Law. Library users may find it necessary to use more than one library to discover all resources available at the University.

Library collections presently include nearly two million cataloged volumes, over 99,000 bound periodicals, over 500,000 microforms, over 76,000 non-print resources, and over 83,000 serial and/or journal titles. Since 1936, the University has been designated also as a selective depository for United States government publications. There are over 200,000 items in the government documents depository collection. In addition to the resources owned by the University Libraries, our Interlibrary Loan services provide access to holdings of other cooperating libraries. Interlibrary loan requests may be placed in person or online while searching the online catalog. Reciprocal borrowing privileges are available at all Florida public universities and colleges.

The online catalog can be found on the Libraries' homepage: http://www.famu.edu/library. The online catalog reflects the majority of book and journal holdings of the University Libraries. It links to journal articles, over 77,000 unique full-text journal titles, over 55100,000 electronic books, and over 470,000 government publications in electronic format. The Libraries' homepage, together with the online catalog, eases the difficulty of locating information.

In addition to research materials, the Libraries provide over 200 public computer workstations in the main libraries and branches in support of research and study and a team of systems personnel. These computer workstations can be used to access the Library Homepage, the online catalog, and other Internet sites. Software is

provided at the workstations to support the research needs of our students.

The Rattler Identification Card is necessary to obtain certain library services. This card is used to borrow books or to establish identity for other library services such as interlibrary loan service, course reserves, printing, copying, and off-campus database use.

Members of the library staff are available to provide assistance with all library materials and information services. Reference service is provided to library users in each library. In addition to onsite reference services, ASK-A-LIBRARIAN provides virtual reference service. The University Libraries deliver competent, quality, and timely instruction through individual point of use instruction, formal individual and group orientations and literacy sessions, printed handouts, research guides and online tutorials. Instruction is provided to local users as well as to distance learners. Information literacy sessions are designed to equip users with the skills needed to locate, evaluate, and use library information resources and services. Formal literacy instruction is based upon goals as defined by classroom faculty. Additional information, including contact information and descriptions of specialized services and resources are available in the Library's on-line section..

Instructional Technology

Instructional Media Center
The Instructional Media Center (IMC), located on the ground floor of the Coleman Library, Room 104, contains two interactive classrooms, a faculty development lab, and an academic computer lab. The IMC offers multimedia, distance learning, audiovisual, and videoconferencing support to faculty, staff and students at Florida A&M University. These facilities are available for class sessions or developing instructional and student materials.

The Instructional Technology staff is also available to help faculty assess the feasibility of using technology to enhance the teaching-learning environment. The staff will assist faculty with incorporating technology into lesson development and lesson delivery. In addition, staff members can work with faculty to prepare course material for delivering classes via videoconference and web-based instruction. The IMC provides assistance in the creation of projected images or computer generated presentations. Please call the IMC at (850) 599-3460 or 599-3461 for appointments and reservations or visit our website at www.famu.edu/it

Faculty Development Lab

Recognizing that faculty training and support are pivotal to the full integration of technology into the learning process, a faculty development lab, located in the Instructional Media Center, is devoted to training faculty in the use of multimedia and distance learning technologies and in the development of courseware. A comprehensive online faculty development certification is available to professors, which qualifies them to teach in the distance learning program. In addition, the IMC provides resources to keep the University community up-to-date in the rapidly changing technological environment for instruction. The lab is equipped with computers, printers, scanners, digital cameras, CD-ROM writers/recorders, and instructional software that faculty can use to enhance and develop instructional materials.

Distance Learning Classroom
There are two IP videoconferencing interactive classrooms. One of the interactive classrooms is a turnkey integration of videoconferencing equipment, multimedia, Internet service, and multipoint conferencing. This room is located in 117 of the IMC. The other Instructional Technology interactive classroom is located in the new wing of the Coleman Library in room 113 in the Office of Instructional Technology. This IP classroom runs on Internet 2 and houses the Access Grid. This room is equipped with state-of-the-art components. Some of these components include Sony cameras, three Sharp LCD projectors, four Intel Pentium III machines, Mackie speakers, Crown Microphones, two sound blaster audio cards, two multimedia keyboards, one Matrox video card, two Matrox dual video cards, a NEC MultiSync LCD and four video capture cards.

Academic Computer Lab
The Academic Computer Lab is equipped with DELL and GATEWAY personal computers, which are connected to the campus network in order to provide students access to the Internet and electronic mail. The software installed on the computers is Microsoft Office Suite (Word, PowerPoint, Excel, Access, etc.). The computer lab has a printing cost of $.10 per page. Printing is activated by the use of the Rattler Card. Students can put cash on their Rattler Card at the Cash Value Center (CVC) located in the IMC. Other CVCs are located in several locations around campus. A computer lab supervisor and lab assistants are available to assist students with their various academic assignments.

Satellite Downlinking Services
The IMC houses two digital and two analog satellite antennas (C and Ku-band). The IMC is a member of the Florida Channel. Satellite programs can be downlinked and viewed live or recorded for viewing at a later date.

Media Circulation
The IMC provides faculty, staff and students access to media circulation services and a growing collection of instructional materials selected to meet their educational needs. The IMC houses a collection of nearly 6,000 titles in different formats (i.e. videotape, audiotape, etc.). The collection is available for classroom use to faculty, students and other related area where non-printed media are an integral parts of the teaching-learning process. The videotape collection is continually upgraded with new acquisitions made throughout the academic year. A large selection of audio-visual equipment, such as LCD projectors, slide projectors, over-head projectors, VCRs and camcorders, are available to enhance classroom instruction.

Enterprise Information Technology (EIT)
The Office of Enterprise Information Technology (EIT) is the primary information technology provider for Florida A&M University. This includes providing technical support to a majority of hardware and software systems of the university. The mission of EIT is to provide innovative, reliable, cost effective technological services to the University community and stakeholders in support of the University's operations and mission.
EIT is responsible for campus-wide networking, e-mail services, telecommunications, network and data security, software and hardware support, PC computing, wireless networking, webcast services, virus protection, development, maintenance and support of the iRattler/PeopleSoft system which, among other functions, allows students to enroll in classes, pay tuition and view financial aid. The Internet is available through fiber optic and Ethernet connections provided to the desktops of faculty, staff, classrooms, dormitories, and other laboratories on the university campus. EIT also oversees the Center for Public Computing and Workforce Development (CPCWD) which offers workforce development training and serves as a resource for small businesses growth and development. The CPCWD provides public access to broadband computers and video conferencing services.
Additionally, the official Florida A&M University's website is developed and supported by EIT in conjunction with the Division of Communications and External relations. EIT also manages an iRattler mobile application which allows students to perform a variety of enrollment functions, check their financial aid status, pay their fees and access their grades. E-mail, iRattler and Blackboard are key information technology services that are available to all students (traditional and distance learning).

The EIT Helpdesk office is open Monday through Friday from 8 a.m. to 5 p.m. and provides a variety of services that are designed to assist university community in maintaining and supporting their iRattler/e-mail accounts, university owned computers and providing software installation support. EIT in conjunction with the Office of General Counsel sets the policy standards for university computing. EIT staff also assists with computer setup and configuration, software installations, troubleshooting, and problem diagnosis for hardware/software issues for university owned computers. EIT manages the e-mail servers which involves administration, backup, restoration, security and maintenance of the servers as well as overseeing the network servers on the university campus. Network servicing entails server administration, backup and restoration, security and maintenance of connectivity both on and off the university campus for authorized computer users. Finally, EIT facilitates the allocation of the Technology Fee funds after they are approved by the Technology Fee committee. These funds are used for renovating computer labs, providing new computers, funding technology based positions, purchasing hardware/software that enhances technology experience and supports academic learning for students.
EIT consists of following teams:

Applications Development
The Applications Development/Technical team for PeopleSoft development works with various offices across the campus for designing, developing and implementing various enhancements in the iRattler/PeopleSoft applications. Additionally, the team generates queries and other ad-hoc reports used for administration, faculty, staff, governmental and accrediting agencies.

Campus Solutions
The Campus Solutions/iRattler Student Administration Team enables the university to deliver web based student enrollment and business services to students, staff, faculty and administrators using a functionality available in our PeopleSoft application. The team provides direct functional and technical support in the form of training, application maintenance, upgrades, reports, troubleshooting and enhancements to the enrollment and academic offices.

Financial Management System
The iRattler/PeopleSoft Financial Management System (FMS) Team provides support to the various university offices that carry out the general ledger, commitment control, asset management, project costing, purchasing, eProcurement, contracts, billing, sponsored projects (Grants), accounts payables, expenses and receivables.
The iRattler Financials team also maintains the iRattler Financial Management System, ensuring that bundles, fixes and tax tables are tested and implemented. The team is responsible for troubleshooting problems and issues of a technical nature and generating queries as well as other ad hoc reports for the offices they support.

Human Capital Management
The Human Capital Management (HCM) team is responsible for managing the iRattler (PeopleSoft) HCM Application. Human Capital Management Application is an integrated system, which includes the functions of Human Resources, Payroll, Benefits, Commitment Accounting and Recruiting. This application enables university employees to securely view their paychecks, personal information, compensation history, direct deposit information, W-2 information, report time, apply for job openings, check leave balances and provides other useful Human Resources features.

Information Security
The Information Security team is charged with the responsibility of ensuring the on-going viability of Florida A&M University by establishing and maintaining a robust security program based on best practices.

The Information Security team is responsible for information security strategy, security architecture development, university wide oversight, continuous monitoring and protection of information resources, evaluating suspected security breaches and recommending corrective actions as well as serving as the enterprise focal point for computer security incident response planning and execution. The scope of this team covers all utilized enterprise technologies, including mainframe, distributed and infrastructure-based systems. This department also has enterprise-level responsibility for all data/information security policies, standards, evaluations, roles and university-wide awareness. This department also interfaces and has reporting responsibilities to the Division of Compliance and Audit.

Enterprise Information Technology Services/ Telecommunications

EIT Services provides the following services:

- iRattler Assistance
- FAMMail set up and password reset
- Wireless setup for personal laptops
- Virus Protection
- Webcasting services
- University Data Center management
- Telephony support
- Printer and imaging support

The Office of Telecommunications is part of EIT Services. This Office of Telecommunications main function is to provide telephone services to the campus community.

Web Team
The Web Team in conjunction with Division of Communications and External Relations is responsible for the design, development, and maintenance of main university website and interior webpages. The web team is responsible for creating applications and systems to further enhance the quality of the service of the university. These applications help administrators provide better service to the university. The web team also maintains the Task Management System (TMS) and Content Management System (CMS). The TMS allows faculty and staff to report various technology problems, data requests, and submit various requests. The Content Management System (CMS) allows content managers from different departments to maintain their departmental websites. FamCast is the Florida A&M University's Webcast System which brings quality audio and video content from convocations, Board of Trustees Meetings, commencements other important events to the university community.

Networking Infrastructure
The Network and Infrastructure team is responsible for the implementation, upgrade and maintenance of university wide network infrastructure. The Network Team ensures that students, faculty and staff have access to the Internet via both wired and wireless infrastructure. FAMUSecure is the university's secure wireless network and is available to all faculty, staff and students.

Center for Public Computing and Workforce Development (CPCWD)
The Center for Public Computing and Workforce Development (CPCWD) offers workforce development training and serves as a resource for growth and development of small businesses. It provides public access to broadband computers and video conference services.

Title III Program
Title III Program is under the direction of the Office of the

President and managed by the Executive Director. The Program is the result of the Higher Education Act of 1965, designed to strengthen Historically Black Colleges and Universities to include Historically Black Graduate Institutions. The funding received from the U.S. Department of Education provides an opportunity to implement Legislative Allowable Activities across disciplines, schools, colleges and departments that will support University goals and objectives directly related to the strategic plan, the development of new and enhanced curricular offerings, and the successful completion of degree programs by its students.

The mission of the Title III Programs Office is to ensure that federal resources are effectively and efficiently used to assist the University in becoming self-sufficient and expanding its capacity to serve low-income students. The funds are provided to improve and strengthen the University's academic quality, institutional management, fiscal stability, and student services outcomes.

Currently, Title III funds are used to assist academic and administrative departments in meeting requirements for accreditation and certification; in implementing retention activities; and in developing innovative curricula for new degree programs. FAMU is one of 18 universities receiving financial support for graduate institutions in strengthening programs such as the sciences, engineering, pharmacy, architecture, libraries, allied health, nursing and environmental sciences provided under the Strengthening Historically Black Graduate Institutions (HBGI) Program of Title III.

Under the auspices of the Office of Title III Part B, HBCU and HBGI, and Part F, SAFRA (Student Aid Fiscal Responsibility Act, these federal funds have made and continue to make positive impacts on the University. Title III funds support (1) technological enhancements for instructional and administrative purposes; (2) faculty development and exchanges; (3) renovation and maintenance of instructional facilities; (4) innovative academic programs where blacks are underrepresented; (5), Ph.D. programs, professional programs, and assistantships in engineering, pharmacy, and environmental studies, Computer Information Systems (CIS), Physics, Biology, Chemistry, Law and Architecture; (6) purchase of instructional materials; (7) research facilities in the sciences and engineering; and (8) student services.

Title III Activities
Each year selected activities are approved for continuation and/or new funding within a five-year funding cycle. The Office of Title III Programs monitors each activity to ensure compliance with the U.S. Department of Education's regulations. The following activities are Title III supported programs:

Academic Affairs (General)
Enhancing Instructional Technology Resources
Enhancing Specialized Health Related Resources in Library
Innovative Academic Instruction for STEM Programs
Post Baccalaureate Curriculum
Academic Success Institute
Academic Support - Library
Distance Learning
Enhancing Library Resources and Services for Graduate Programs

Administration
Institutional Development and Capacity Building
Strengthening Institutional Effectiveness in Accreditation, Assessment, and Research
Enhancing Operational Efficiencies Through Training
ImageNow
Organization Development and Training

College of Science and Technology
Enhancing Graduate Arts and Sciences

Student Affairs
Enrollment Management

School of Architecture & Engineering
School of Architecture Graduate Student Summer Program

College of Education
Teacher Education and Certification

FAMU-FSU College of Engineering
Minority Engineering Support for Graduate Students
STEM-Research Center for Cutting-Edge Technology

FAMU School of Law
Enhancement of the J.D. Program

College of Pharmacy and Pharmaceutical Sciences
Program Administration

School of the Environment
Advanced Graduate Studies in Environmental Sciences and Policy through Interdisciplinary Research

School of Nursing
Nursing

School of Allied Health
Academic Enhancement of Graduate Health Management Education

College of Social Sciences, Arts and Humanities
International Study (Exchange Program)
Honors Program
Legal Scholars Preparatory Program
TRiO

Title IV or TRiO Programs are administered by the US Department of Education, the purpose of Title IV is to provide support to students ranging from middle school to graduate school in gaining access to, and successfully completing programs of postsecondary education. The University operates three TRiO Programs. The collective mission of the TRiO Academic Support Center is to increase the number of students from groups underrepresented in higher education who gain admission to, and complete programs of studies resulting in higher education degrees. Programs within the Center supported by the U.S. Department of Education's TRiO Programs include 1) Upward Bound Regional Institute for Math & Science, 2) Student Support Services, and 3) Talent Search. Collectively, the Center provides a range of academic support services, including instruction, academic advising, counseling, tutoring, career planning, residential programs, research internships and access to technology to over 1,000 students annually.

Student Support Services
Student Support Services is a TRiO Program federally funded by the US Department of Education. The goal of TRiO/SSS is to increase the college retention and graduation rates of its participants and help students make the transition from one level of higher education to the next. The program provides opportunities for academic development, assists students with basic college requirements, and serves to motivate students toward the successful completion of their postsecondary education.

Mission
TRiO/Student Support Services will provide services designed to help the participants graduate from college.

The lab is open weekdays for all TRiO students during the day and operates on extended hours during exam weeks. To get more

information on the lab, feel free to either stop by, send us an email, or call @ 850-561-2104.

Upward Bound Regional Institute for Math & Science
The Upward Bound Math and Science (UBMS) program is designed to strengthen the math and science skills of participating high school students. The goal of the program is to help students recognize and develop their potential to excel in math and science and to encourage them to pursue postsecondary degrees in math and science, and ultimately careers in the math and science profession.

The FAMU UBMS Program currently serves six high schools in five Northern Florida counties. Program services include: summer programs with intensive math and science training; year-round counseling and advisement; exposure to university faculty members who do research in mathematics and the sciences; computer training; and participant-conducted scientific research under the guidance of faculty members or graduate students, who are serving as mentors; education or counseling services designed to improve the financial and economic literacy of students; students from groups that are traditionally underrepresented in postsecondary education, students with disabilities, students who are homeless children and youths, students who are in foster care or are aging out of foster care system or other disconnected students.

Talent Search
The Talent Search program identifies and assists individuals from disadvantaged backgrounds who have the potential to succeed in higher education. The program provides academic, career, and financial counseling to its participants and encourages them to graduate from high school and continue on to and complete their postsecondary education. The program publicizes the availability of financial aid and assist participant with the postsecondary application process. Talent Search also encourages persons who have not completed education programs at the secondary or postsecondary level to enter or reenter and complete postsecondary education. The goal of Talent Search is to increase the number of youth from disadvantaged backgrounds who complete high school and enroll in and complete their postsecondary education.

Projects provide tutorial services, career exploration, aptitude assessments, counseling, mentoring programs, workshops, information on postsecondary institutions; education or counseling services designed to improve the financial and economic literacy of students; guidance on and assistance in secondary school reentry, alternative education programs for secondary school dropouts, entry into general educational development programs or postsecondary education; and programs and activities previously mentioned that are specially designed for students who are limited English proficient, students from groups that are traditionally underrepresented in postsecondary education, students with disabilities, students who are homeless children and youths, students who are in foster care or are aging out of the foster care system or other disconnected students.

Center for Disability Access and Resources (CeDAR)

Mission
The Center for Disability Access and Resources (CeDAR) at Florida A & M University provides supportive services to students with disabilities to enhance their skills for personal, academic and professional growth. The mission of the CeDAR, is to provide enriching support programs, services, and reasonable accommodations to FAMU students with disabilities. Our mission is to also foster a sense of empowerment in students with disabilities by educating them about their legal rights and responsibilities so that they can make informed choices, be critical thinkers, and self-advocates. Our goal is to ensure students with disabilities have access to the same programs, opportunities, and activities available to all FAMU students.

Overview
The CeDAR identifies a participant's level of abilities and provides services to include:
- Assessments
- Prescriptive Plans of Study
- Academic Advisement
- Individualized Counseling/Testing
- Development of Compensatory and Life-Long Skills
- Monitoring of Student Progress
- Readers, Tutors, and Proctors

We recognize that many students with specific disabilities have the potential; however, without these specialized support services their potential may never be fully realized and developed. As a participant, students have access to life-long learning skills that are necessary for active participation in a competitive society.

Mobility Services
The CeDAR also supports the University by providing campus-wide transportation to students with physical disabilities and/or challenges. This includes access to University buildings and/or gated areas for student drop-off/pick-ups.

Adaptive Learning Lab

The CeDAR is supported by an adaptive learning laboratory that consists of desktop computers w/printers and large screen monitors; voice dictated and synthesized computer software. Additional equipment available for use includes:

- Talking Calculators
- Laptop Computers
- Laser Scanners
- Magnification Devices
- Calculators
- Brain Child (mini tutorial software)
- Digital/Micro-cassette Recorders
- Quicktionary Pen Readers
- Hearing Helper Personal FM System
- Books on Tape/CD
- CCTV

College Study Skills Institute
The CeDAR sponsors the College Study Skills Institute (CSSI), a five week summer program designed for prospective students with disabilities. During CSSI, students' strengths and weaknesses are identified, and their disability/disabilities and reasonable accommodations are discussed and broadened to enhance their academic foundation levels for learning and success.

Theodore R. and Vivian M. Johnson Scholarship
The CeDAR sponsors the Theodore R. and Vivian M. Johnson Scholarship, a competitively award program which is available to undergraduate students with disabilities who enroll in the State of Florida University System. Contact Information:

Florida A&M University
Center for Disability Access and Resources (CeDAR)
667 Ardelia Court
Tallahassee, FL 32307
(850) 599-3180 (Main Line)
(850) 561-2513 (Fax)
(850) 561-2783 (TDD)

Small Business
Development Center (SBDC)
A Partnership Program with the United States Small Business

The Small Business Development Center has as its major focus

provision of management and technical assistance to small business firms to aid in stabilizing the economy, developing jobs in the private sector, and fostering entrepreneurship. Services are provided to an area which includes eight counties: Leon, Franklin, Gadsden, Liberty, Jefferson, Madison, Taylor and Wakulla.

Services Provided

Educational Programs - Provide workshops, conferences and courses in business management. A nominal registration fee is charged for all educational programs.

Counseling - Provides personal and confidential counseling by certified business analysts which include but is not limited to the following:

•Starting a Business
•Business Plan Development
•Market Research and Planning
•Accounting Systems
•Taxes and Licensing Compliance
•Loan Resources
•Government Procurement

Counseling services are provided free and requires an appointment.

Resource Library - Provides access to business-related publications, videos and various reference materials.

Computer Learning Center - Provides access to various business software applications and the internet.

Construction Management Development and Bond Guarantee - Funded by the Florida Department of Transportation (FDOT), the CMDBG provides a comprehensive construction management development training program for Disadvantaged Business Enterprises (DBEs) and Small Business Enterprises (SBEs) and establishes a program for providing bonding assistance to DBEs through bond guarantees on FDOT projects.

Innovation Park Business Incubator - In collaboration with the Small Business Development Center at Florida A&M University and the Leon County R&D Authority, the Innovation Park Business Incubator expects to enhance the regional economy by promoting the creation, expansion and recruitment of high growth/high wage companies.

The purpose of the Innovation Park Business Incubator is to provide a nurturing environment for new and/or fledgling businesses, no-to- reduced rent for short periods of time, conference/meeting facilities, receptionist/secretarial support, capital investment search assistance and a variety of other business services for start-up companies and entrepreneurs during their first two to three years of development. By coordinating the strategic deployment of resources and encouraging small business networking and joint-venturing, the Innovation Park Business Incubator helps entrepreneurs to minimize and manage the risk normally associated with starting and growing.*

Small Business Enterprise - A collaborative agreement between the Small Business Development Center at Florida A&M University and Leon County, the Small Business Enterprise (SBE) is a race and gender neutral program, which affords benefits to small businesses to participate in Leon County's procurement of goods and services. The SBE program fosters growth in the county's economy by affording small businesses a chance to gain experience, knowledge, and training to compete and secure contracts in the bidding process.

Benefits of the SBE Program - The Small Business Enterprise Program provides management and technical assistance training to enhance the small business probability of success, thereby increasing the community's economic development. The training is provided through the Small Business Development Center at Florida A&M University.

County officials will reserve bids and Requests for Proposal (RFP) for SBEs when at least three (3) SBEs are certified within the same type of commodity or service activity.**

***Information from Incubator Program Agreement**
****Information from SBE Program Brochure**

Florida's Statewide Course Numbering

Courses in this catalog are identified by prefixes and numbers that were assigned by Florida's Statewide Course Numbering System (SCNS). This numbering system is used by all public postsecondary institutions in Florida and 26 participating non-public institutions. The major purpose of this system is to facilitate the transfer of courses between participating institutions. Students and administrators can use the online Statewide Course Numbering System to obtain course descriptions and specific information about course transfer between participating Florida institutions. This information is at the SCNS website at http://scns.fldoe.org.

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 a 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 "statewide course profiles."

Example of Course Identifier

Prefix	**Level Code** (first digit)	**Century Digit** (second digit)	**Decade Digit** (third digit)	**Unit Digit** (fourth digit)	**Lab Code**
ENC	**1**	**1**	**0**	**1**	
English Composition	Lower (freshman) Level at this institution	Freshman Composition	Freshmen Composition Skills	Freshman Composition Skills I	No laboratory component in this course

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 a few exceptions (Exceptions are listed below).

For example, a freshman composition skills course is offered by 58 different postsecondary institutions. Each institution uses "ENC_101" to identify its freshman composition skills course. The level code is the first digit and represents the year in which students normally take the course at a specific institution. In the SCNS taxonomy, "ENC" means "English Composition," the century digit "1" represents "Freshman Composition," the decade digit "0" represents "Freshman Composition Skills," and the unit digit "1" represents "Freshman Composition Skills I."

In the sciences and certain 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 participating 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, ENC 1101 is offered at a community college. The same course is offered at a state University as ENC 2101. A student who has successfully completed ENC 1101 at the community college is guaranteed to receive transfer credit for ENC 2101 at the state University if the student transfers. The student cannot be required to take ENC 2101 again, since ENC 1101 is equivalent to ENC 2101. 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 that have not been designated as equivalent. NOTE: Credit generated at institutions on the quarter-term system may not transfer the equivalent number of credits to institutions on semester-term systems. For example, 4.0 quarter hours often transfer as 2.67 semester hours.

The Course Prefix

The course prefix is a three-letter designator for a major division of an academic discipline, subject matter area, or sub-category 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 to identify the course.

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 possess 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

Since the initial implementation of the SCNS, specific disciplines or types of courses have been excepted from the guarantee of transfer for equivalent courses. These include varying topics courses that must be evaluated individually, or applied courses in which the student must be evaluated for mastery of skill and technique. 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 are not offered by the receiving institution.

B. For courses at non-regionally accredited institutions, courses offered prior to the established transfer date of the course in question.

C. Courses in the _900-999 series are not automatically transferable, and must be evaluated individually. These include such courses as Special Topics, Internships, Practica, Study Abroad, Thesis and Dissertations.

D. Applied academics for adult education courses.

E. Graduate Courses.

F. Internships, practica, clinical experiences and study abroad courses with numbers other than those ranging from 900-999.

G. Applied courses in the performing arts (Art, Dance, Interior Design, Music and Theatre) and skills courses in Criminal Justice are not guaranteed as transferable.

Courses at Nonregionally Accredited Institutions

The Statewide Course Numbering System makes available on its home page (http://scns.fldoe.org) a report entitled "Courses at Nonregionally Accredited Institutions" that contains a comprehensive listing of all nonpublic institution courses in the SCNS inventory, as well as each course's transfer level and transfer effective date. This report is updated monthly.

Questions about the Statewide Course Numbering System and appeals regarding course credit transfer decisions should be directed to (Dr. Agatha U. Unwunli) in the (registrar's office) or the Florida Department of Education, Office of Articulation, 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 via the internet at http://scns.fldoe.org.

International Education and Development

The International Student and Scholar Services (ISSS) Department provides resources to facilitate the adjustment process of international students in their new cultural environment. ISSS coordinates the Florida West Africa Institute (FLAWI) and monitors the programs of students supported by other institutions in Florida. ISSS administers and oversees all international F-1 and sponsored J-1 students enrolled at FAMU and provides assistance to faculty and staff desiring to change their visa status or transfer to another U.S. institution. In addition to administrative support and referral services related to immigration and other needs, ISSS offers a range of programs and activities to advance the overall educational experience of international students and scholars at FAMU. All incoming international students and scholars are provided orientation to the University and the local community. The staff provides international students and scholars individualized advising related to academic issues, housing, health issues and other concerns. It also sponsors outreach initiatives, which include a host family program and participation in the community international awareness activities. OIED also sponsors the International Student Association. In addition, international students and scholars are encouraged to actively participate in both international and domestic cultural events and training opportunities to include, but not limited to: employment career fairs; foreign employment and income tax workshops; study abroad, research and internship opportunities; leadership conferences; international awareness and education week; annual Charles Billings International Reception hosted during international education week; and presenters in classrooms and cultural events campus-wide and the greater community; and processing of immigration documents for travel, study, research, and employment.

Education Abroad and Exchange Programs
The Education Abroad and Exchange Programs (EAEP) Department, a Title III funded activity, provides FAMU students a substantial array of resources to help them identify opportunities for study, travel and work abroad. The International Resource Center consists of printed directories, guidebooks, pamphlets, brochures, a TV monitor and a computer to access electronic bookmarked websites of diverse education abroad opportunities. Education abroad consists of service learning, traditional year-long or semester study abroad, internships, departmental-sponsored short-term study, research and outreach. All study abroad courses are taught by the respective host institution faculty. OIED administers a year-round semester study abroad program in Santo Domingo, the capital city of the Dominican Republic, for students seeking a Latin American/Caribbean experience. Classes are taught at Pontificia Universidad Católica Madre y Maestra (PUCMM). The prescribed academic program consists of Spanish Language studies, Dominican and Afro-Caribbean culture and literature, directed individual study in the student's major field, and a community service component. The education abroad staff organizes several short-term academic excursions with a service learning component during our spring breaks or summer sessions for faculty, staff, and students. The enriching activities can be customized to the faculty member's class syllabi or a department research project. FAMU is a member of the College Consortium for International Studies (CCIS), a partnership of accredited two and four year U.S. and foreign colleges and universities that share a commitment to developing a variety of international programs. FAMU coordinates the CCIS Summer Program in the Dominican Republic. Through its consortia affiliations with CCIS and the Council for International Education & Exchanges, students can study in over 100 countries and in most fields. Applications are processed through the Office of International Education and Development.

The education abroad staff seeks to identify opportunities for faculty and staff to study, work, teach, or conduct research abroad. They assist with travel arrangements, travel document issues, pre-departure orientation, and other concerns related to travel abroad. The staff maintains an array of resources for faculty and staff and regularly informs them through the OIED Newsletter, flyers, etc., of the various opportunities available through public and private agencies for exchanges, research opportunities, and technical assistance to other universities. The Diplomat-In-Residence (DIR) Program is another component within OIED. Since 2001, FAMU has hosted four Diplomats-in-Residence; a program supported by the U.S. Department of State to encourage more students to pursue careers in the Foreign Service and foreign affairs and prepares students to compete for prestigious international and State Department internships. The DIR program is central to the effort to recruit the best and brightest to represent America's rich diversity to the world.

Office of International Education and Development

The Office of International Education and Development (OlED), a component of the Division of Academic Affairs, supports and promotes the internationalization of the University through the incorporation of international curriculum development, and academic enhancement activities related to teaching, research, and public service. OlED seeks to promote the University's relevance in an interdependent global village and to facilitate greater appreciation of cross-cultural relations and global issues. OlED strives to establish and maintain a University environment that encourages faculty, staff, and students to participate in a process that enhances and broadens the global role of the University. Services to students, faculty, and staff are provided through three units: (1) International Student and Scholar Services; (2) Education Abroad and Exchange Programs; and (3) International Research and Development. If you need any of these services, please contact the Office of International Education and Development, located in 302 Perry-Paige North, call 850-599-3562/3295, or visit www.famu.edu/international.

International Research and Development
The International Research and Development Department (IRD) facilitates the development of international collaborative projects by providing technical assistance to enable faculty, staff, and students to become involved in international collaborative research and development activities. IRD assists in identifying and/or coordinating international project proposals with faculty and staff. It establishes contacts and conducts fact finding activities with foreign universities that result in capacity building projects or teaching exchanges. It facilitates the engagement of faculty in exciting international capacity building projects and research activities with foreign universities and governments. The staff monitors or assists in coordinating collaborative international projects to be implemented by faculty and staff. It networks with professional international consortia, organizations and government agencies for grants to support FAMU internationalization. IRD has responsibility of developing and maintaining all international Memoranda of Agreements (MOAs) and is the official custodian of MOAs approved by FAMU with entities abroad. In addition, we create collaborative relationships with foreign institutions to foster two plus two agreements for enrollment of undergraduate students, as well as, admissions to masters and doctoral programs. In addition, IRD administers and processes all immigration documents for transferring F-1 students and J-1 research scholars to change their visa status to H-1B temporary specialty employment visas; as well as, review and process permanent resident visa petitions.

OFFICE OF CONTINUING EDUCATION

Continuing Education
The Office of Continuing Education is an autonomous unit which reports directly to the Provost and Vice President for Academic Affairs and is responsible for ensuring that all non-credit educational programs sponsored by the University (held on or off campus) are conducted in accordance with the laws, rules, regulations and policies of the State of Florida, the Board of Governors and the University's Board of Trustees.

The Intensive English Program (IEP) is a unit within the Office of Continuing Education which delivers non-credit English language programming specifically offered to students at the postsecondary level to: (1) enhance their language skills for personal growth and development; and (2) prepare them for studies at colleges and universities, or in other educational programs. The program fosters language competency in reading, writing, speaking and listening. It also helps develop international students' cultural understanding of the United States and North American universities.

Definition of Continuing Education Programs
The University identifies any non-credit educational event which is sponsored in whole or in part by Florida A&M University that involves the collection of revenue, expenditure of University funds or resources and/or the use of the University's name as sponsor, co-sponsor or host as a continuing education program and requires prior approval by the Provost through the Office of Continuing Education. Additionally, the Office of Continuing Education is the only department authorized to collect revenue for continuing education programs. Such programs include but are not limited to the following:

- Workshops
- Conferences
- Seminars
- Symposia
- Institutes
- Youth Programs
- Summer Programs

Correspondence Study
The University of Florida Department of Independent Study by Correspondence administers all correspondence instruction for Florida's State University System (SUS). Florida;'s program of Independent Study by Correspondence offers well over 150 courses by computer, fax or regular mail to people in Florida, the United States and foreign countries. These courses are grouped into three categories: college credit, continuing professional education and high school credit. For a FREE brochure, please contact.

Department of Independent Study
2209 NW 13th St., ,Suite D
Gainesville, FL 32609-3498
Phone: (352) 392-1711- Fax: (352) 392-6950
E-mail: learn@nervm.nerdc.ufl.edu

College of Agriculture and Food Sciences

About The Division of Agricultural Sciences
Bachelor of Science in Agribusiness
Bachelor of Science Degree in Agricultural Science with majors in:

- Animal Science (Industry and Pre-Vet & Science)
- Agronomy
- Entomology
- Food Science
- Veterinary Technology

Bachelor of Science in Biological and Agricultural Systems Engineering
Forestry and Natural Resources 2+2 Program

The Division of Agricultural Sciences offers education and training in food and agricultural sciences. In the tradition of the land-grant college, this division seeks to serve the educational needs of the individual student. The curricula in the division also provide for broad training in the humanities, natural sciences, and social sciences mainly during the freshman and sophomore years. The junior and senior years are devoted largely to the professional aspects of the student's area of specialization. In general, the graduation requirement for the Bachelor of Science degree programs is 120 semester hours.

Degrees Offered
The division offers three bachelor of science degree programs: (1) Agribusiness, (2) Agricultural Sciences with majors in animal science, agronomy, entomology , food science, veterinary technology and (3) Biological and Agricultural Systems Engineering. The Division of Agricultural Sciences also offers a Master of Science degree in agricultural sciences and the Ph.D. degree in entomology in affiliation with the University of Florida.

Faculty
Emeritus Professors: Coultas, Charles; Flowers, Ralph; Heinis, Julius; Pescador, Manuel.
Professors: Taylor, Robert (Dean); Anderson, Sr., Lee E.; Carter, Lawrence; Tsolova, Violetka M.; Gardner, Cassel; Hsieh, Yuch; James, Neil; Kanga, Lambert; Leong, Stephen; Lorenzo, Alfredo; Magee, Charles; Mbuya, Odemari; Milla, Katherine; Mobley, Ray; Muchovej, James J; Musingo, Mitwe; Olorunnipa, Zacch; Onokpise, Oghenekome; Phills, Bobby R.; Sheikh, Mehboob; Thomas, Michael
Associate Professors: Duke, Edwin; Gitau, Margaret; Hand, Samuel E.; Hix, Raymond; Taylor, Jennifer;
Adjunct Associate Professors: Bloem, Kenneth; Bloem, Stephanie; Hight, Stephen D.; Legaspi, Jesusa (Susie) C.;
Assistant Professors: Bailey, Nathaniel; Bolques, Alejandro; Sarjeant, Keavin; Solis, Daniel
Instructors: Beaudouin, Jean; Nelson, Tondalaya; Paul, Harriett; Richardson, Vonda; Wright, Glen; Purvis, Robert
Research Associates: Ananga, Anthony; Georgiev, Vasil; Haseeb, Muhammad; Kambiranda, Devaiah; McKenzie-Jakes, Angela; Queeley, Gilbert; Rasmussen, Andrew; Ren, Zhongbo; Umar, Gohar; Xu, Xia
Extension Agents: Hylton, Trevor; Newman, Conchita

Prequisite Coursework in the Division of Agricultural Sciences

There are statewide Common Program prerequisites for all majors in the Division. The following must be completed with a grade of "C" or higher. These courses may be taken as partial fulfillment of General Education requirements or as general electives.

MAC 1105 College Algebra or Higher Level Approved Math*	3
BSC 1010C General Biology I*	4
BSC 1010C General Biology II*	4
CHM X045 General Chemistry I* w/Lab	4
CHM X046 General Chemistry II w/Lab	4
MAC X311 Calculus with Analytic Geometry*	3
ECO X013*	3
SYG X000 or PSY X012*	3
SPC 2600 Public Speaking	3
CGS 2571 Introduction to Microcomputer Applications*	3
STA 2023 Introduction to Probability and Statistics	3

*This is a state common prerequisite. Substitutes identified in the state Common Prerequisite Manual at www.fact.org will be accepted.

NOTE: Statewide common prerequisites are always under review. For the most current information and for other courses that may serve as acceptable alternatives, visit www.facts.org.

NOTE: Course Prerequisites Policy

It is the student's responsibility to be aware of the prerequisites of a course prior to enrollment in a course. A student may contact his or her advisor or the department chair for additional information concerning course prerequisites and this policy. Failure to fulfill course prerequisites may result in the administrative cancellation of enrollment in the course at any time during the semester with no refund of tuition of fees.

***NOTE:** Some prerequisites/requirements coursework may also be applied to General education requirements in math and science.

Foreign Language Requirement

Transfer students are required to have completed two (2) years in high school or eight semester hours (or equivalent) at an accredited undergraduate institution in one foreign language or American Sign Language prior to enrollment or graduation.

Bachelor of Science in Agribusiness

Agribusiness is an applied field of study integrating the principles of economics, business, management and agriculture. It also involves solving operational problems of agricultural related firms

by using modern decision making aids as well as forecasting and strategic planning.

A total of 120 semester hours are required for graduation. Also a minimum of 27 semester hours are required in the major discipline (AEB).

Freshman Year	**Sem.Hrs.**
ENC 1101 Freshman Communication Skills I	3
ENC 1102 Freshman Communication Skills II	3
MAC 1105 College Algebra	3
AGG 2004 Intro. to Agric. Science	1
ECO 2013 Principles of Econ. I	3
ECO 2023 Principles of Econ. II	3
Approved Computer Applications Elective	3
First humanities elective	3
General Education	8
Approved Natural Science Courses (2)	
Total	**30**

Sophomore Year	**Sem. Hrs.**
AEB 2104 Economics of Agriculture	3
STA 2023 Statistics	3
ACG 2021 Financial Accounting Principles	3
MAC 2233 Business Calculus	3
ECO 3101 Microeconomics Theory	3
AMH 2091 African American History	3
Directed Electives	9
Directed CAFS Elective	3
Total	**30**

Junior Year	**Sem. Hrs.**
AEB 3331 Agricultural Price Analysis	3
AEB 3143 Agricultural Finance	3
QMB 3602 Quantitative Methods	3
AEB 3300 Marketing of Agricultural Products	3
ECO 3203 Macroeconomics Theory	3
AEB Directed Elective	3
MAN 3025	3
Communications Elective (ENC or Speech)	3
CAFS Directed Electives	3
Second humanities elective	3
Total	**30**

Senior Year	**Sem. Hrs.**
AEB 4261 Agric Policy	3
AEB 4152 Agribusiness Analysis	3
BUL 4130 Business Law	3
ECO 3421 Econometrics	
or AEB Directed Elective	3
AEB 4906 Special Problems	3
AEB 3133 Principles of Agribusiness	
Management	3
AEB Directed Elective	6
Major Directed Elective	6
Total	**30**
Total Credit Hours	**120**

Directed Electives:

AEB Directed Electives may be either 3000 or 4000 AEB courses other than the core AEB courses.
CAFS Directed Electives may be any 2000, 3000 or 4000 level course offered in CAFS other than AEB courses.
Major Directed Electives may be any 3000 or 4000 AEB, ECO or ECP course not part of the curriculum. Other substitutions are possible and may be considered on a case by case basis with the permission of the student's advisor.

B.S. Degree in Agricultural Science (with Majors)
Animal Science Major

There are two (2) options in the Animal Science Major:
(a) Industry Option
(b) Pre-Vet & Science Option

(a) Animal Science (Industry Option)

The industry option in animal science prepares individuals to manage technology needed to enhance production and management in the livestock and poultry industries. The curriculum is designed for students who are interested in preparing themselves for positions in the animal industry. These include positions in food science, management, production, breeding, nutrition, meats, and reproduction. It also prepares students for employment in related agricultural agencies of Florida, the U.S. government, and private industry. The Pre-Vet science option prepares individuals for further professional development beyond the B.S. degree, as well as entry into a college of veterinary medicine.

Freshman Year	**Sem. Hrs.**
Fall Semester	
ENC 1101 Freshman Communicative Skills I	3
AGG 2004 Intro. to Agri. Science	1
ANS 3006 Intro. to Animal Science	4
BSC 1005, 1005L Biological Sciences	3
Humanities I	3
(from General Education list of courses)	
Total	**15**

Spring Semester	
ENC 1102 Freshman Communicative Skills II	3
Approved Computer Application Elective	3
AMH 2091 African-American History	3
BSC 1010, 1010L General Biology I	4
Humanities Elective II	3
(from General Education list of courses)	
Total	**16**

Sophomore Year	Sem. Hrs.
Fall Semester	
MAC 1105 College Algebra	3
CHM 1020, 1015L Fundamentals of Chemistry I	4
ANS 3244 Beef Production	3
ECO 2013 Principles of Economics I	3
Restricted Electives	3
Total	**16**
Spring Semester	
MAC 1147 Pre-Calculus Math	4
CHM 1045, 1045L General Chemistry I	4
ANS 3232 Equine Science & Management Training	4
STA 2023 Probability Statistics	3
Total	**15**
Junior Year	
Fall Semester	
ANS 4080 Animal Science Expt.	4
PHY 2053, 2053L College Physics	4
Restricted Electives	4
AEB 3143 Agriculture Finance	3
Total	**15**
Spring Semester	
AGR 3232 Pasture & Range Management	3
ANS 3463 Feeds and Feedings	3
BSC 2093, 2093L Anatomy & Physiology	4
AEB 2104 Economics of Agriculture	3
Total	**13**
Senior Year	
Fall Semester	
ANS 3311 Reproduction of Farm Animals	4
VME 4117 Animal Sanitation & Disease Control	3
Restricted Electives	6
ANS 4931 Animal Science Seminar	1
Total	**14**
Spring Semester	
ANS 3264 Swine Production	3
ANS 4445 Animal Nutrition	4
ANS 4932 Special Problems	3
ANS 4291 Incubation & Brooding	3
Restricted Electives	4
Total	**17**
Total Credit Hours	**120**

(b) Animal Science (Pre-Vet & Science Option)

Freshman Year	Sem. Hrs.
Fall Semester	
ENC 1101 Freshman Communicative Skills I	3
AGG 2004 Intro. to Agri. Science	1
ANS 3006 Intro. to Animal Science	4
BSC 1010, 1010L Biological Sciences	4
Humanities I	3
Total	**15**
Spring Semester	
ENC 1102 Freshman Communicative Skills II	3
Approved Computer Application Elective	3
AMH 2091 African-American History	3
BSC 1011, 1011L General Biology II	4
Humanities Elective II	3
Total	**16**
Sophomore Year	
Fall Semester	
MAC 1147 Pre-Calculus Math	4
CHM 1045, 1045L General Chemistry I	4
ANS 3244 Beef Production	3
ECO 2013 Principles of Economics	3
Total	**14**
Spring Semester	
MAC 2311 Calculus I	4
CHM 1046, 1046L General Chemistry II	4
ANS 3232 Equine Science & Management Training	4
STA 2023 Probability and Statistics	3
Total	**15**
Junior Year	
Fall Semester	
CHM 2210, 2210L Organic Chemistry I	4
PHY 2053, 2053L College Physics	4
MCB 3020, 3020L Microbiology I	4
ANS 4080 Animal Science Expt	4
Total	**16**
Spring Semester	
CHM 2211, 2211L Organic Chemistry II	4
ANS 3463 Feeds and Feedings	3
PHY 2054, 2054L College Physics	4
BSC 2093, 2093L Anatomy & Physiology	4
Total	**15**
Senior Year	
Fall Semester	
ANS 4931 Animal Science Seminar	1
PCB 3063 Principle of Genetics	4
ANS 3311 Reproduction of Farm Animals	4
BCH 4033, 4033L Biochemistry	4
VME 4117 Animal Sanitation and Disease Control	3
Total	**16**
Spring Semester	
ANS 3264 Swine Production	3
ANS 4445 Animal Nutrition	4
ANS 4932 Special Problems	3

ANS 4291 Incubation & Brooding	3
Total	**13**
Total Credit Hours	**120**

*Restricted electives require advisor's approval and may be selected from the following courses: AEB 3134, AEB 4152; AEE 4301; AGG 2050C; AGG 4935; ANS 3273, 4932, 3614; APB 3220; AEB 2104 4391; AGR 3210; FOS 2002; FOS 3042; FOS 4222; MCB 3020, Z00 3753; PHA 2004; PCB 3723; ZOO 2203; ATE 2210/2210L; ATE2211/2211L; ATE 3660; ATE 1741 or any other course approved by the advisor.

Veterinary Technology Major

The veterinary technology major focuses on the health and welfare of animals and humans. The major coursework with broad foundation in biology, chemistry, physics, genetics, microbiology, and other fields prepares individuals for a wide variety of careers. These include research, medical or veterinary technologists, and technicians, counseling and consulting, pharmaceuticals, teaching, and instruction, management and sales, etc. The veterinary technology major meets the American Veterinary Medical Association (AVMA), Committee on Veterinary Technician Education and Activities (CVTEA) Standards of Accreditation.

Freshman Year	**Sem. Hrs.**
ENC 1011, 1102 Freshman Communication Skills I & II	6
MAC 1105 College Algebra	3
ATE 1001 Introduction to Veterinary Technology	1
BSC 1010 & 1010L General Biology I with Lab	4
BSC 1011 & 1011L General Biology II with Lab	4
AMH 2091 African-American History	3
STA 2023	3
ATE 1741 Veterinary Medical Terminology	1
CGS 2060 Computer Literacy I	3
Humanities elective	3
Total	**31**

Sophomore Year	**Sem. Hrs.**
CHM 1045 & 1045L General Chemistry I w/Lab	4
ATE 2210/2210L	4
ANS 3006 Introduction to Animal Science	4
MCB 3020C Microbiology w/lab	4
CHM 1046 & 1046L General Chemistry II with Lab	4
Second social science elective	3
ANS 4445 Animal Nutrition	4
ATE 2011/2011L	4
Total	**31**

Junior Year	**Sem. Hrs**
ATE 3659 Animal Nursing and Restraint with lab	4
ATE 3660 Zoonotic Disease	3
ANS 3311 Reproduction of Farm Animals	4
ATE 3515 Legal and Ethics in Vet Tech	3
ATE 3616 Animal Health Management with lab	4
ATE 2648 Veterinary Radiology for Technicians with lab	4
ATE 3664 Animal Disease & Prevention with lab	4
Humanities Elective	3
Total	**29**

Senior Year	**Sem. Hrs.**
ATE 3615 Veterinary Pharmacology	3
ATE 4317 Introduction to Veterinary Hospital Management	3
ATE xxxx and lab Laboratory Animal Procedures with lab	4
ATE 2638 Veterinary Clinical Pathology with lab	4
ATE 3658 Anesthesia & Surgical Nursing with lab	4
ATE XXXX Review course	2
ATE/ANS 3273 or 3463 Swine Sciences	3
or Feeds and Feeding) Restricted Elective	3
ATE 3940 Clinical Rotation/ I	2
ATE 3941Clinical Rotation II	2
ATE 4941 Clinical Rotation III	2
Total	**29**
Total Credit Hours	**120**

Agronomy Major

The major in Agronomy is designed to prepare students for careers as soil scientists, soil conservationists, and plant scientists with government and private agencies that require personnel having knowledge and expertise with soils and agronomic crops.

Freshman Year	**Sem. Hrs.**
ENC 1101 Freshman Communicative Skills I	3
Humanities Elective	3
AMH 2020 U.S. History	3
AGG 2004 Intro to Agri. Science	1
MAC 1105 College Algebra	3
BSC 1010, 1010L General Biology	4
ENC 1102 Freshman Communicative Skills II	3
AMH 2091 African American History	3
MAC 1114 Algebraic & Trig. Functions	3
BSC 1011, 1011L General Biology I	4
Total	**30**

Sophomore Year	**Sem. Hrs.**
Humanities Elective	3
CHM 1045, 1045L General Chemistry I	4
PHY 2048 General Physics	4
CHM 1046, 1046L General Chemistry II	4
ECO 2013 Principles of Economics I	3
PSY 2012 Introduction to Psychology	3
CGS 2571 Overview Microcomputer Application	3
BOT 1010C Elementary Botany	4
Total	**28**

Junior Year	**Sem. Hrs.**
ENY 3004 General Entomology	4
HOS 3010C Horticultural Science	3
PCB 3063 Principles of Genetics	4
CHM 2210, 2210L Organic Chemistry I	4
CHM 2211, 2211L Organic Chemistry II or CHM 3120, 3120L Quantitative Analysis	4
SWS 3022 Nature and Properties of Soils	4
AGR 3210 Field Crops Science	3
BOT 3504C Plant Pathology	3
Total	**30**

Senior Year	Sem. Hrs.
BOT 3503C Plant Physiology	4
AGG 4935 Agri. Senior Seminar	1
AGR 4512 Plant Ecology	3
AGR 3232C Pasture and Range Management	3
ENC 3210Technical Writing	3
STA 2023 Introduction to Probability and Statistics I	3
SWS 4427 Soil and Plant Analysis	3
SWS 3211C Soil and Water Conservation	3
SWS 4732C Soil Survey	3
SWS 4131C Soil Fertility and Fertilizers	3
Electives	3
Total	**32**
Total Credit Hours	**120**

*Electives are selected subject to the approval of the academic advisor. ABE 4034C, AGR 4430C, AGR 4905, AGG 2050C & FOR 3093.

Entomology Major

The major in entomology prepares individuals to seek positions in state and federal agencies or private businesses, including structural pest control ones that concern themselves with various entomological activities. The curriculum is offered for students interested in positions in urban entomology, forensic and medical entomology, biological control, aquatic environmental sciences and general entomology. Excellent employment opportunities are available in Florida and nationwide.

Freshman Year	Sem. Hrs
ENC 1101 Freshman Comm. Skills I	3
ENC 1102 Freshman Comm. Skills II	3
SPC 2600 Public Speaking	3
BSC 1010C General Biology I with lab	4
Humanities Elective	3
Humanities Elective	3
MAC 1105 College Algebra	3
MAC 1114 College Algebra & Trig. Functions	3
AGG 2004 Intro. to Ag. Sciences	1
BSC 1011C General Biology II with lab	4
Total	**30**

Sophomore Year	Sem. Hrs.
CHM 1045, 1045L General Chemistry I	4
ENY 3004C General Entomology	4
AMH 2091 African American History	3
Foreign Language I (Lec. & Lab) or Approved Elective*	4
Foreign Language II (Lec. & Lab) or Approved Elective*	4
Approved Computer Applications Elective	3
ECO 2013 Principles of Economics I (or Soc. Sci. Elective)	3
Elective (Agriculture)**	2
CHM 1046, 1046L General Chemistry II w/Lab	4
Total	**31**

Junior Year	Sem. Hrs.
BOT 1010 Botany w/Lab (1010L)	4
CHM 2210, 2210L Organic Chemistry I	4
PCB 2033C Introduction to Ecology (or Physics)	3
ENY 2570 Principles of Environmental Entomology	3
ENY 4150 Systematic Entomology	3
PCB 3063C Principles of Genetics	4
STA 2023 Introduction to Probability and Statistics I	3
ZOO 2203 Invertebrate Zoology or Med/Vet Entomology	3
Elective (Agriculture or Entomology Elective)**	4
Total	**31**

Junior Year - Summer	
ENY 3949 Entomology Internship	1-6 (variable)

Senior Year	Sem. Hrs.
ENY 4354C Insect Morphology	4
ENY 4931 ENY Seminar or AGG 4935 Seminar	1
*Approved Electives	17
Free Electives	6
Total	**28**
Total Credit Hours	**120**

* or 2nd Specialty if language requirements are met.
**Subject to the approval of the academic advisor. Approved electives include ENY 2001, ENY 3222, ENY 3223, ENY 3560, ENY 3661C, ENY 3668C, ENY 4229, ENY 4501, ENY 4907, ENY 3701, CAGG 2050C, AGR 4530C, AGR 4512, ANS 3006, BOT 3503C, BOT, 3504C, FOS 3042, HOS 3010C, ORH 3517, ORH 3222, PLS 2221, SWS 3022C, SWS 3211C.

Food Science Major

Food Science is a multidisciplinary science field that utilizes knowledge from areas such as chemistry, microbiology, nutrition, physics, biotechnology, mathematics, and engineering to solve the many problems that threaten our food supply as well as to create new food products. Food Science seeks to ensure that our foods are safe, tasty, nutritious, convenient, and abundant. The major in food science is designed to instruct students in the scientific principles that govern techniques and methods used in the preparation, processing, storage, evaluation, and utilization of foods. All students are exposed to an off campus food experience as part of their training. Graduates of this program are prepared to function in government, academic and corporate sectors of the food industry. The food industry is the world's largest industry and employment opportunities are available throughout the country.

Freshman Year	Sem. Hrs.
ENC 1101 Freshman Communication Skills I	3
AGG 2004 Introduction to Agricultural Sciences	1
AMH 2010 U.S. History: 1492 to 1865	3
BSC 1010/1010L General Biology I w/Lab	4
Approved Computer Applications Elective	3
CHM 1045,/1045L General Chemistry I w/Lab	4
ENC 1102 Freshman Communication Skills II	3
BSC 1011/ 1011L General Biology II w/Lab	4
FOS 2002 Food and Man	3
Total	**28**

Sophomore Year	Sem. Hrs.
CHM 1046,/1046L General Chemistry II w/Lab	4
MAC 1147 Pre-Calculus Mathematics	4

AMH 2091 African American History	3
Humanities General Education Requirement	3
CHM 2210/ 2210L Organic Chemistry I w/Lab	4
HUN 2401 Human Nutrition	3
Social Science General Education requirement	3
MAC 2311 Calculus with Analytic Geometry	4
SPC 2600 Public Speaking	3
Total	**31**

Junior Year	**Sem. Hrs.**
FOS 3042,/3042L Introduction to Food Science w/Lab	4
STA 2023 Introduction to Probability & Statistics I	3
ECO 2013 Principles of Economics I or	3
AEB 2104 Economics of Agriculture	
AGG 2050 Introduction to Biotechnology	2
PHY 2053/2053L Physics I with Lab	4
FOS 4930 Seminar in Food Science	1
FOS 4222C Food Microbiology and Safety	4
FOS 3429 Processing of Plant Foods	3
BCH 4033/ 4033L Biochemistry I w/Lab or AGG 4056	4
Approved science elective	3
Total	**31**

Senior Year	**Sem. Hrs.**
FOS 4321C Food Analysis	4
FOS 4454C Food Fermentation	3
MAN 3025 Principles of Management	3
FOS 4940 Practical Food Experience	4
*Restricted Elective	3
FOS 4311/ 4311L Food Chemistry w/Lab	4
FOS 4425 Food Manufacturing & Storage	3
Ethics Requirement (PHI 3601 or MAN 3701)	3
*Elective (3000 or higher)	3
Total	**30**
Total Credit Hours	**120**

*FOS Electives: FOS 3004; FOS 3429; FOS 3121; FOS 4005; FOS 4202; FOS 4435C; FOS 4454C; FOS 4641; FOS 4731; FOS 4942; AGG 4420; ANS 3614.
*All electives are selected subject to the approval of the academic advisor.

Forestry and Natural Resources Conservation 2+2 Program

The 2+2 joint degree program in Forestry and Natural Resource Conservation implemented in 1992 by the Florida A&M University (FAMU) and the University of Florida (UF) operates on a two tier basis.

This program curriculum provides broad training in the humanities, natural sciences and social sciences during the freshman and sophomore years. Approximately 60 hours are devoted to the general and pre-professional education sequence which includes courses in English, mathematics, humanities, social sciences, natural sciences, health and history, as well as some electives.

The program at UF picks up where this program leaves off. Students continue their education in one of several specialties in Forestry and Natural Resource Conservation. During their junior and senior years, students must earn approximately 63 hours, including electives, toward graduation. Graduates of this program are able to obtain professional careers in government, private and academic sectors nationally and internationally.

Freshman	**Sem. Hrs.**
ENC 1101 Freshman Communicative Skills I	3
AMH 2091 African American History	3
MAC 1114 Algebraic and Trig. Functions	3
BSC 1010/ 1010L General Biology I	4
ENC 1102 Freshman Communicative Skills II	3
FOR 3093 Forestry & Urban Environments	3
BSC 1011/ 1011L General Biology II	4
Humanities I Elective	3
PSY 2012 Intro. to Psychology	3
CHM 1045/ 1045L General Chemistry	4
Total	**33**

Sophomore Year	**Sem. Hrs.**
AGG 2004 Introduction to Agricultural Science	1
MAC 2231 Business Calculus	3
SWS 3022/ 3022L Nature & Properties of Soils	4
STA 2023 Introduction to Probability and Statistics	3
CGS 2571 Overview of Microcomputer Applications	3
SPC 2600 Public Speaking	3
PHY 2048 General Physics with Lab	4
Restricted Elective	2
ECO 2013 Principles of Economics	3
Humanities II Elective	3
Total	**29**
Total Credit Hours	**62**

Bachelor of Science in Biological and Agricultural Systems Engineering (BASE)

Biological and Agricultural Systems Engineering (BASE) integrates engineering and the agricultural, biological, and chemical sciences. The Bachelor of Science degree in Biological and Agricultural Systems Engineering has two options:
(1) Bioprocessing and Food Engineering
(2) Natural Resources Conservation Engineering

The program provides the students with a strong background in engineering fundamentals by incorporating a series of general engineering courses offered through the College of Engineering. It then provides a professional focus by combining courses in biochemical, food and natural resources engineering. Within the curriculum, students focus on solving current problems related to natural resource management and conservation as well as biological and agricultural production and processes. Graduates of the program are prepared for graduate studies in science and engineering, professional studies and/or for work as engineers in industry and government, solving complex engineering problems and designing products and processes.

The 128 semester hour BASE program is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, telephone: (410)

347-7700. The program is designed to prepare students for graduate study in STEM fields, including health fields or for a career in agricultural engineering, biotechnology, environmental engineering, process engineering and other related engineering.

Graduates primarily find employment in private industry, consulting, government (including local, state, and federal government agencies such as USDA and EPA).

Natural Resources Conservation Engineering Option

Freshman Year	**Sem. Hrs.**
ENC 1101 Communication Skills I	3
BSC 1010/1010L Biology I with Lab	4
MAC 2311 Calculus I	4
ABE 1010 Introduction to BASE	2
AMH 2091 African-American History	3
ENC 1102 Communication Skills II	3
BSC 1011/1011L Biology II with Lab	4
MAC 2312 Calculus II	4
ABE 2001L Introduction to Computer Applications	3
SUR 2140/2140L Elementary Surveying with Lab	5
Total	**35**

Sophomore Year	**Sem. Hrs.**
PHY 2048/2048L General Physics I with Lab	5
CHM 1045/1045L Chemistry I and Lab	4
MAC 2313 Calculus III	5
PHY 2049/2049L General Physics II with Lab	4
EGM 3512 Engineering Mechanics	4
MAP 2302 Differential Equations	3
CHM 1046/1046L Chemistry II with Lab	4
Total	**29**

Junior Year	**Sem. Hrs.**
SWS 3022/3022L Nature and Property of Soils with Lab	4
EML 3100 Thermodynamics	2
EEL 3003/3003L Introduction to Electrical Engineering with Lab	4
ABE 3013 Introduction to Design Analysis	3
CWR 3201 Hydraulics	3
CWR 3200L Environmental and Hydraulics Eng. Lab	1
ABE 3650 Engineering Properties of Biological Materials	3
CWR 4101 Engineering Hydrology	3
ECO 2013 Principles of Economics	3
ENC 3243 Technical Report Writing	3
ABE XXXX Restricted Engineering Elective*	3
MAS 3105 Linear Algebra	3
Total	**35**

Senior Year	**Sem. Hrs.**
ABE 4042 Senior Design Project I	2
HUM XXXX Humanities Elective	3
ABE 4224 Non-Point Source Pollution	3
ABE 3213C Natural Resource Conservation Eng.	4
EGN 3331 Strength of Materials	3
ABE 4043 Senior Design Project II	2
Humanities Elective	3
ABE 4232 Water Management Systems Design	3
ABE 4611 Environmental Modifications and Controls	3
XXXX Engineering or Science Elective	3
Total	**29**
Total Credit Hours	**128**

Engineering and Science Elective must be selected from 3000 level courses with advisor's approval. ABE 4830 and ABE 701 can be used as electives when offered.

Bioprocessing and Food Engineering Option

Freshman Year	**Sem. Hrs.**
ENC 1101 Communication Skills I	3
BSC 1010/1010L Biology I with Lab	4
MAC 2311 Calculus I	4
ABE 1010 Introduction to BASE	2
AMH 2091 Afro-American History	3
ENC 1102 Communication Skills II	3
BSC 1011/1011L Biology II with Lab	4
MAC 2312 Calculus II	4
CHM 1045/1045L Chemistry I with Lab	4
ABE 2001L Introduction to Computer Applications	3
Total	**34**

Sophmore Year	**Sem. Hrs.**
PHY 2048/2048L General Physics I and Lab	5
CHM 1046/1046L General Chemistry I and Lab	4
MAC 2313 Calculus III	5
PHY 2049/2049L General Physics II and Lab	5
EGM 3512 Engineering Mechanics	4
MAP 2302 Differential Equations	3
MCB 3010 Microbiology	4
Total	**30**

Junior Year	**Sem. Hrs.**
CWR 3201 Hydraulics	3
CWR 3200L Environmental and Hydraulics Lab	1
CHM 2210/2210L Organic Chemistry and Lab	4
EML 3100 Thermodynamics	2
EEL 3003/3003L Introduction to Electrical Engineering and Lab	4
ABE 3013 Introduction to Design Analysis	3
ABE 3650 Eng. Properties of Biological Materials	3
ECH 3023 Mass and Energy Balances	3
ECO 2013 Principles of Economics	3
ENC 3243 Technical Report Writing	3
MAS 3105 Linear Algebra	3
ABE XXXX Restricted BASE Engineering	3
Total	**35**

Senior Year	**Sem. Hrs.**
AEB 4042 Senior Design Project I	2
ABE 4812 Food and Bioprocess Engineering	3
ABE 3212C Natural Resource Conservation Engineering	4
EGN 3331 Strength of Materials	3
HUM XXXX Humanities Elective	3
ABE 4043 Senior Design Project II	2
ABE 4611 Environmental Modification and Control	3
ABE 4661 Biochemical Engineering	3
HUM XXXX Humanities Elective	3

Engineering or Science Elective	3
Total	**29**

MASTER OF SCIENCE IN AGRICULTURAL SCIENCES

Traditionally known as the land-grant arm of Florida A&M University (FAMU), the College of Agriculture and Food Sciences (CAFS) offers students majoring in agriculture sciences a broad spectrum of academic opportunities to continue their education and professional development. CAFS academic programs offer unique experiences for undergraduate and graduate students through incorporating aspects of teaching, research, international agriculture and business, as well as extension and community outreach.

The College of Agriculture and Food Sciences offers a MASTER OF SCIENCE DEGREE (thesis and nonthesis options) in Agricultural Sciences with concentrations in Agribusiness, Entomology, Plant Science, and Soil and Water Science. A minimum of thirty six (36) semester hours beyond the bachelor's degree is required for the Master of Science degree. The degree takes approximately two calendar years for its completion. The curriculum of the program is structured so that students may expand their knowledge in selected areas of agricultural sciences instead of specializing in any one field. However, the research performed by these students is specific in nature and is supervised by faculty members in their areas of expertise. Students are exposed to a full range of agricultural research problems and their management through on-campus instruction and hands-on experiential learning with the programs' faculty and off campus internships at other universities or industry partners. To ensure the success of the students in completing the degree program, each student is mentored by a Thesis Supervisory Committee. The committee members guide the student's choice of core courses, electives and internships; test their problem-solving skills on a regular basis and through final oral examination. The program produces well-trained graduate students who are ready for the challenges of the changing world.

ADMISSION POLICIES

1. General

For admission into the graduate programs in the College of Agriculture and Food Sciences (CAFS), an applicant must:

a.Have a baccalaureate or a master's degree in a related field from an accredited college or university;

b. Present official scores of the Graduate Record Examination (GRE) taken within the last two years. A minimum score of 1,000 points on the combined verbal and quantitative portions of the aptitude test or 300 points on the computer based GRE, or/and a minimum GPA of 3.0 (on a 4.0 scale) on the last two years of study for the baccalaureate degree or their highest awarded post-baccalaureate degree is required.

c. Present official copies of transcripts from all universities attended;

d. Have at least a GPA of 3.0 on all graduate work (Ph.D applicants);

e. Present three letters of recommendation from someone familiar with the student's academic performance in their field of study;

f. Submit a one-page personal statement, discussing the student's interest in a graduate degree;

g. Be approved by CAFS's Graduate Faculty Committee;

2. International Students: In addition to the requirements listed above, official scores of 500 (minimum) for MS students on the Test of English as a Foreign Language (TOEFL) or a 213 on the computer based TOEFL is required for international students whose native language is not English. Students are required to purchase U.S. health insurance while at the university.

FINANCIAL ASSISTANCE

In order to obtain any financial assistance from CAFS and the School of Graduate Studies and Research, a student must maintain an overall GPA of 3.0 or better and must be a full-time student. A full credit load consists of a minimum of nine (9) hours in each of the fall and spring semesters and one (1) to six (6) hours in the summer term. Continued funding of a student is contingent upon the student making satisfactory progress in the completion of his/her coursework and thesis research.

Research assistantships are available on a competitive basis. Research assistants work on externally sponsored research projects under the supervision of a faculty member. Letters of recommendation, evidence of communication skills, as well as GRE scores, are important considerations in the award of assistantships.

The assistantship awards range from $15,000 to $22,000 for 20-hours of work per week during the academic year. Out-of-state tuition and matriculation fee waivers are available on a competitive basis. A student should contact the Graduate Program Coordinator for opportunities within the College and the Dean of the School of Graduate Studies and Research for possible funding at the University level.

Most assistantships are halftime and students are obligated to work 20 hours a week on whatever assignments the supervisor designates. After 18 hours of coursework, a student may be asked to work as a Teaching Assistant. Students supported by research grant funds must perform work relevant to the grant stipulations.

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE IN AGRICULTURAL SCIENCES: THESIS OPTION

A student must have a minimum of thirty-six (36) semester hours of graduate credit. At least twelve (12) of these must be the specified core courses, eighteen (18) in the selected area of concentration or related areas, and six (6) for the Master's Thesis, AGG 5976. A student may register for more than three hours in AGG 5976 in any one semester, only with the permission of his/her advisor and committee.

At the beginning of the first semester, the student indicates an area of concentration and begins with general coursework (AGR

5825/5827 Statistical Methods in Research I&II, AGG 5920 Colloquium, and one course from the students proposed area of concentration). The student will also seek a Major Professor and then a supervisory committee who will, in conjunction with the student finalize the student's program of study.

Any subsequent changes to the student's program must be approved by the Supervisory Committee, and filed with the Graduate Program Coordinator.

Limits for degree programs are set by the graduate school, and any requests for extension must be approved by the students Major Professor, Committee, Graduate Program Coordinator, Dean of the College, and Dean of the Graduate School.
Study for the master's degree must be completed within five years from the first semester the student registers as a graduate student.
A student may earn no more than two (2) "C"s provided that he/she maintains an overall GPA of 3.0 or better. A third grade of "C" will result in termination from the program. A required or core course with a grade of "C" must be repeated. Any grade of "D" or "F" may be grounds for dismissal from the program;
Any grade of "U" in any phase of the coursework/thesis/research/dissertation shall require the student to be placed on probation for one semester. A second "U" grade will result in the termination of the student's degree seeking status;
Graduation requirements include a cumulative grade point average of 3.0 or better and the successful defense of a thesis or project report. All of the above requirements must be met within 7 calendar years.

PROGRAMS OF STUDY IN AREA OF CONCENTRATION: THESIS OPTION
AGRIBUSINESS

The academic program for the Master's of Science in Agricultural Sciences with a major in Agribusiness is as follows:

I. Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I &II	6
AGG 5931 Professional Seminar	3
AGG 5920 Colloquium (repeated each semester)	0
II. Select one of the following core courses	
AGR 5445C Advanced Plant Sciences	3
ANS 5205C Advanced Animal Production	3
SOS 5217 Soil and the Environment	3
PMA 5407C Integrated Pest Management	3
FOS 5314 Advanced Food Processing & Storage	3
III. Select all of the following core courses	
AEB 5307 Agricultural Marketing and Finance	3
AEB 5335 Advanced Agricultural Price Analysis	3
AEB 5555 Econometrics	3
AEB 5376 Market Research and Survey	3
AEB 5185 Advanced Agricultural Production	3
IV. AGG 5976 Master's Thesis	6
(The candidate must complete and successfully defend an original thesis).	
V. Approved electives, including courses in the area of concentration	3-5
VI. Seminars	
Total	**36**

ENTOMOLOGY

The academic program for the Master's of Science in Agricultural Sciences with a major in Entomology, is as follows:

I .Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I &II	6
AGG 5920 Colloquium (repeated each semester)	0
AGG 5931 Professional Seminar	3
II. Select one or two of the following core courses	
AGR 5185 Advanced Agricultural Production	3
AGR 5445C Advanced Plant Sciences	3
ANS 5205C Advanced Animal Production	3
FOS 5314 Advanced Food Processing & Storage	3
SOS 5217 Soil and the Environment	3
AGG 5537 Invasion Biology	3
BSC 5865 Conservation Biology	3
III. Select a minimum of 15 semester hours from the following core courses:	
ENY 5105C Principles of Animal Taxonomy	4
ENY 5150 Systematic Entomology	3
ENY 5355 Insect Morphology	4
ENY 5500 Aquatic Entomology	3
PMA 5407C Integrated Pest Management	3
ENY 6663 Medical Entmolgy	3
ENY 6821Insect Pathology	3
ENY 5204 Insect Ecology	3
ENY 6820 Insect Molecular Genetics	3
ENY 6215 Biological Control of Weeds	3
ENY 6651 Insect Toxicology	4
IV. AGG 5976 Master's Thesis	6
(The candidate must complete and successfully defend an original thesis)	
V. Approved electives, including courses in the area of concentration	3-5
VI.Seminars	
Total	**36**

FOOD SCIENCE

The academic program for the Master's of Science in Agricultural Sciences with an emphasis in Food Science, is as follows:

I. Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I &II	6
AGG 5920 Colloquium (repeated each semester)	0
AGG 5931 Professional Seminar	3
II. Select one of the following core courses	

AGR 5445C Advanced Plant Sciences	3
ANS 5205C Advanced Animal Production	3
SOS 5217 Soil and the Environment	3
PMA 5407C Integrated Pest Management	3
AGR 5185 Advanced Agricultural Production	3

III. Select a minimum of 15 semester hours from the following core courses:

FOS 5315 Advanced Food Chemistry	3
FOS 5325 Advanced Food Analysis	3
FOS 5930 Seminar in Food Science	1
FOS 5314 Advanced Food Processing and Storage	3
FOS 5226 Advanced Food Microbiology & Safety	3
FOS 5906 Directed Individual Study	1-6
FOS 5940 Practical Food Experience	3
FRC 5808C Enology	4
FOS 5245 Meat Science and Meat Research	4

IV. AGG 5976 Master's Thesis 6
(The candidate must complete and successfully defend an original thesis)

V. Approved electives, including courses in the area of concentration. 3-5

VI. Seminars
Total **36**

ANIMAL SCIENCE
The academic program for the Master's of Science in Agricultural Sciences with an emphasis in Animal Science, is as follows:

I. Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I &II	6
AGG 5931 Professional Seminar	3
*AGG 5920 Colloquium (repeated each Semester)	0

II. Select one of the following core courses

AGR 5185 Advanced Agricultural Production	3
AGR 5445C Advanced Plant Sciences	3
EVR 5063 Elements of Environmental Biology	4
FOS 5314 Advanced Food Processing & Storage	3
PMA 5407C Integrated Pest Management	3
SOS 5217 Soil and the Environment	3

III. Select all of the following core courses:

ANS 5205C Advanced Animal Production	3
ANS 5202 Monogastric Farm Animals	3
ANS 5447 Ruminant Nutrition	4
ANS 5454 Animal Science Experimentation	3
ASC 5405 Advanced Animal Nutrition	3

IV. AGG 5976 Master's Thesis 6
(The candidate must complete and successfully defend an original thesis)

V. Approved Electives 3-5

VI. Seminars
Total **36**

PLANT SCIENCE
The academic program for the Master's of Science in Agricultural Sciences with a major in Plant Science (Viticulture and Enology, Plant Biotechnology), is as follows:

I. Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I &II	6
AGG 5931 Professional Seminar	3
AGG 5920 Colloquium (repeated each semester)	0

II. Select one of the following core courses

ANS 5205C Advanced Animal Production	3
SOS 5217 Soil and the Environment	3
PMA 5407C Integrated Pest Management	3
AEB 5185 Advanced Agricultural Production	3
FOS 5314 Advanced Food Processing & Storage	3

III. Select all of the following core courses:

AGR 5322 Plant Breeding	3
AGR 5445C Advanced Plant Science	3
AGR 5616 Seed Science and Technology	3
BOT 5506 Advanced Plant Physiology	3
BOT 5937 Selected Topics in Plant Biotechnology	3

IV. AGG 5976 Master's Thesis 6
(The candidate must complete and successfully defend an original thesis)

V. Approved electives, including courses in the area of concentration. 3-5

VI. Seminars
Total **36**

SOIL AND WATER SCIENCE
The academic program for the Master's of Science in Agricultural Sciences with a major in Soil and Water is as follows:

I. Select the following required courses	**Sem. Hrs.**
AGG 5825/5827 Statistical Methods in Research I & II	6
AGG 5931 Professional Seminar	3
AGG 5920 Colloquium (repeated each semester)	0

II. Select one of the following core courses

CHS 5610 Environmental Chemistry	3
EVR 5260 Sources and Control of Environmental Pollution	3
ENY 5500 Aquatic Entomology	3
AGG 5330 Advanced GIS	3

III. Select a minimum of 15 credit hours from the following core courses:

AGR 5445C Advanced Plant Science	3
SWS 5217 Soil and the Environment	3
SWS XXXX Hydrology and Watershed Management	3
AGG 5930 Special Topics in SWS	3

(Cli Chg., Irrigat.& Water Cons)
SWS 5305 Soil Microbiology 3
SWS 5405C Soil Chemistry 3

IV. AGG 5976 Master's Thesis 6
(The candidate must complete and successfully defend an original thesis)

V. Approved electives including courses in the area of concentration or related areas 3-5

VI. Seminars
Total **36**

REQUIREMENTS FOR THE MASTER OF SCIENCE DEGREE IN AGRICULTURAL SCIENCES: NON-THESIS OPTION

The non-thesis option differs from the existing Master of Science degree program by replacing the six (6) hours of thesis with a research project and two directed electives and administering written and oral comprehensive exit exams designed and administered by the student's graduate committee. The replacement courses will not include supervised research or thesis and will be selected by the student with the approval of their graduate committee and the Graduate Coordinator. These additional courses will permit students to further focus their graduate training in specialties they and their committee believe are important to their professional development. The only exception to this is that students will be required to take one (1) hour of supervised research in their final semester of enrollment for the expressed purpose of taking their written and oral exit exams. The exit exam will permit the committee to assess the student's overall level of professional competency and assure that graduates leave the program with a consistent level of proficiency. At the discretion of the student's graduate committee and the Graduate Coordinator, the written and oral exit exams could include a multiple-semester research project designed to allow students following the non-thesis option an opportunity to conduct applied research.

Number of Credits Required

The non-thesis track requires additional course offerings. Instead, the present requirement of six (6) hours of thesis is replaced with two additional directed electives selected by the student and approved by the student's Supervisory Committee and the Graduate Coordinator.

The Master of Science Non-Thesis includes concentrations in Agribusiness, Entomology, Soil and Water Science and Plant Science. Candidates are required to successfully complete at least thirty-six (36) semester hours including the six (6) hours of course work and a research project, MS candidates in all concentrations are required to take AGR 5825 (Fundamentals of Research Design) or Statistical Methods in Research 1 and 2, AGG 5931 (Professional Seminar) and AGG 5920 (Colloquium) and three (3) to five (5) courses (varying by concentration) in their major field of study and several electives approved by their Supervisory

Committee. A minimum GPA of 3.0 is required to remain in the graduate program.

Exit Seminar and Final Examination

The students must give an exit seminar and pass a final examination administered by the Supervisory Committee. The exam has both written and oral components and each member of the committee participates in both exams. The oral portion of the exam is administered by the student's Supervisory committee. The Graduate Coordinator and a representative of the Graduate Council with questioning and voting privileges must participate in the oral exam. The examination cannot be taken earlier than the term before the degree is to be awarded.

Exit E-mail to Associate Dean

All students must either send an e-mail to the Associate Dean (copied to the Graduate Coordinator) with a short statement of the quality of her /his experience as a student in the College and information regarding plans for the immediate future regarding employment (Academia or Industry) or continued education.

Financial Assistance

Students enrolled in the Master of Science degree program with Non-thesis option are not eligible for financial assistance (tuition waiver and assistantship).
Students who are already enrolled in the Master of Science degree program with thesis option, but switch to a non-thesis option will immediately become ineligible for financial assistance.

PROGRAMS OF STUDY IN AREA OF CONCENTRATION AND MAJORS: NON-THESIS OPTION

The following courses are required by all concentrations and majors:

	Hours
a. AGG 5825 and AGG 5827 Statistical Methods in Research I & II	6
b. AGG 5931 Professional Seminar	3
c. AGG 5920 Colloquium (repeated)	0
Total	**7-9**

AGRIBUSINESS

i. Select one of the following courses

a. AGR 5442 Advanced Plant Sciences	3
b. ANS 5205C Advanced Animal Production	3
c. SOS 5217 Soil and the Environment	3
d. PMA 5407C Integrated Pest Management	3
e. FOS 5314 Advanced Food Processing & Sto.	3

ii. Core classes

a. AEB 5307 Agricultural Marketing and Fin.	3
b. AEB 5335 Advanced Agricultural Price Anal.	3
c. AEB 5555 Econometrics	3
d. AEB 5375 Market Research and Survey	3

e. AEB 5185 Advanced Ag. Production 3

iii. Approved electives in concentration: 11

iv. Graduate exit exam (Supervised Research) 1

Total 37-39

FOOD SCIENCE

i. Select one of the following courses
- a. AGR 5442 Advanced Plant Sciences 3
- b. ANS 5205C Advanced Animal Production 3
- c. SOS 5217 Soil and the Environment 3
- d. PMA 5407C Integrated Pest Management 3
- e. FOS 5314 Advanced Food Processing & Sto. 3

ii. Core classes (select a minimum of 15 hours)
- a. FOS 5314 Adv. Food Processing & Storage 3
- b. FOS 5315 Adv. Food Chemistry 3
- c. FOS 5325 Adv. Food Analysis 3
- d. FOS 5930 Seminars in Food Science 3
- e. FOS 5226 Adv. Food Microbiology & Safety 3
- f. FOS 5906 Directed Individual Study 1 - 6
- g. FOS 5940 Practical Food Experience 3
- h. FRC 5808C Enology 4
- i FOS 5245 Meat Science and Meat Research 4

iii. Approved electives in concentration: 11
iv. Graduate exit exam (Supervised Research) 1

Total 37-39

PLANT SCIENCE
i. Select one of the following courses
- a. AGR 5442 Advanced Plant Sciences 3
- b. ANS 5205C Advanced Animal Production 3
- c. SOS 5217 Soil and the Environment 3
- d. PMA 5407C Integrated Pest Management 3
- e. FOS 5314 Advanced Food Processing & Sto. 3

ii. Core classes
- a. AGR 5322 Plant Breeding 3
- b. AGR 5445C Advanced Plant Science 3
- c. ARG 5616 Seed Science and Technology 3
- d. BOT 5506 Advanced Plant Physiology 3
- e. BOT 5937 Selected Topics in Plant Biotech. 3

iii. Approved electives in concentration: 11
iv. Graduate exit exam (Supervised Research) 1

Total 37-39

ANIMAL SCIENCE

i. Select one of the following courses

a. AGR 5442 Advanced Plant Sciences 3

b. AEB 5185 Advanced Agricultural Production 3

c. EVR 5063 Elements of Environmental Bio. 3
d. SOS 5217 Soil and the Environment 3
e. PMA 5407C Integrated Pest Management 3
f. FOS 5314 Advanced Food Processing & Sto. 3

ii. Core classes
- a. ANS 5202 Monogastric Farm Animals 3
- b. ANS 5202C Advanced Animal Production 3
- c. ANS 5447 Ruminant Nutrition 3
- d. ANS 5454 Animal Science Exp. 3
- e. ANS 5446 Advanced Animal Nutrition 3

iii. Approved electives in concentration: 11
iv. Graduate exit exam (Supervised Research) 1

Total 37-39

ENTOMOLOGY
i. Core courses
- a. ENY 5155C Systematic Entomology 3
- b. ENY 5355 Insect Morphology 3
- c. ENY 5204 Insect Ecology 3
- d. ENY 5407 Integrated Pest Management 3
- e. ENY 6821 Insect Pathology 3

ii. Select one of the following courses.
- a. AGR 5185 Advanced Agriculture Prod. 3
- b. AGR 5445C Advanced Plant Sciences 3
- c. ANS 5205C Advanced Animal Production 3
- d. FOS 5314 Advanced Food Processing & Sto. 3
- e. SOS 5217 Soil and the Environment 3
- f. BOT 5937 Selected Topics in Plant Biotech. 3

iii. Approved electives in concentration: 11
iv. Graduate exit exam (Supervised Research) 1

Total 37-39

GRADUATE COURSE DESCRIPTIONS

AEB 5185 Advanced Agricultural Production (3) Prereq: Basic knowledge of differential and integral calculus. Emphasis on production theory and the theory of the firm, Technical aspects of agricultural production dealing with input-output input-input, output-output production cost, etc.

AEB 5307 Agricultural Marketing and Finance (3) Application of concepts and theories to facilitate financial analysis of agricultural production; capital theory and investment analysis; risk theory and portfolio analysis. Liquidity management; policy issues in agricultural financial marketing concepts, strategies, management and organizational requirements of marketing agriculture products. By permission only.

AEB 5335 Advanced Agricultural Price Analysis (3) Application of economic theory and statistical techniques to study price determination and methods used to analyze factors affecting agricultural prices; analysis of agricultural prices movements with respect to time, space and form; and examination of empirical and analytical methods used in price forecasting and techniques of time series analysis. By permission only.

AEB 5375 Market Research and Survey Sampling (3) Prereq:

An introductory statistics course. Marketing research methods used to evaluate market potential, problems and marketing decisions. Course includes sampling techniques of data collection and analysis. Selected no parametric statistical techniques issued to illustrate research methods and statistical inference of market data. By permission only.

AEB 5555 Econometrics (3) Application of economic and a linear algebra course. Emphasis on social and behavioral sciences research problems. Empirical research methods in estimating the basic linear model and hypothesis testing, statistical inference and problems involved in regression analysis and extensions of the general linear model. By permission only.

AGG 5825 Fundamentals of Research Design (4) Prereq: An introductory statistics course and a linear algebra course. Probability theory, random variables and sampling distribution, experimental design and analysis of variance, survey techniques, regression analysis, and nonparametric statistics. Permission of Graduate Program Coordinator.

AGG 5900 Directed Individual Study (1-4) Independent study or research under the supervision by faculty members. May be repeated up to a maximum of six hours. By permission only.

AGG 5910 Supervised Research (1-3) Students collect and analyze data on particular subject, under the supervision of a member of the area staff (not to exceed 6 semester hours). By permission only.

AGG 5920 Colloquium (0)

AGG 5930 Special Topics in Agricultural Science (1-41 Topics in agricultural sciences showing an interrelationship between subject matter areas. Content and credit may vary. May be repeated up to a maximum of six semester hours. By permission only.

AGG 5931 Professional Seminar (3) This course is designed to pre par students to understand and evaluate scientific research and provide the opportunity for them to plan and conduct research with the guidance of other professionals in the field.

AGG 5976 Master's Thesis (1-9) The student selects a topic in consultation with his advisor, collects data, writes and defends a thesis. By per- mission only.

AGR 5234 Forage Crops (4) Detailed study and agronomic characteristics of tropical and temperate improved and rangeland forage species; function and use of improved pastures and natural grassland in animal production systems.

AGR 5322 Plant Breeding (4) Plant improvement, methodologies for breeding fielding crops and horticultural crops will be discussed; cultivar development and multiplication of asexually propagated crop species, new plant breeding techniques such as plant cell selection, applications of haploidy and genetic engineering.

AGR 5442 Advanced Plant Sciences (3) Physiological processes associated with crops and crop production. Factors influencing crop yield potentials. Influence of environmental factors on photosynthesis, water movement, fruit set and yields.

AGR 5616 Seed Science and Technology (3) Examination of basic metabolic process related to seed development, maturation, dormancy and germination. Post-harvest processing, curing and storage of seeds, and its effects on seed quality. Principles and practices in pure seed production and crop and weed seed identification. Laboratory methods in seed testing, certification, laws for marketing seeds. By permission only.

ANS 5202 Monogastric Farm Animals (3) Prereq: ANS 3006. A comprehensive study of monogastric animals on the farm, mainly swine and equine as related to breed, reproduction, feeds and nutrition, production, health and sanitation, management, and marketing.

ANS 5205C Advanced Animal Production (3) Prereq: ANS 3006. Survey of the latest systems of production and the use of modern technology in breeding, feeding and managing meat animals, emphasis will be on the anatomical and physiological systems of the animal and their relationships to efficient livestock production.

ANS 5446 Advanced Animal Nutrition (3) Prereq: ANS 4445. The thrust of this course is to integrate the physiology and biochemistry of protein, carbohydrate, lipid, vitamin and mineral metabolism in the whole animal.

ANS 5447 Ruminant Nutrition (3) Prereq: ANS 4445. Physiological and microbiology of ruminant digestion, biochemical process in the utilization of absorbed nutrients and the manipulation of biochemical processes to improve/enhance animal productivity.

ANS 5454 Animal Science Experimentation (3) Prereq: ANS 3006; ANS 4445. Discussion and application of laboratory procedures frequently used in nutrition and physiology research. Introduce students to various analytical procedures including analysis, surgery, collection and handling of blood and tissues and hormones/enzymes measurements. By permission only.

BOT 5506 Advanced Plant Physiology (3) Prereq: Plant Physiology, Organic Chemistry (two semesters), This course focuses on a detailed investigation of plant hormones including biological and chemical essays. Biosynthesis, metabolism, and physiological effects of plant hormones, Nitrogen asphyxiation, nutrient translocation, juvenility, photoperiodism, vernalization, germination and dormancy will be covered.

BOT 5604 Advanced Plant Ecology (3) A study of the environmental conditions controlling plant growth, response of plants to their habitat, a study of the climatic, physiographic, edaphic, and historic factors of the environment in relation to plant growth.

BOT 5937 Selected Topics In Plant Biotechnology (3) Prereq: A basic knowledge of plant biology. Advanced plant and cell culture, using plant tissue and culture for crop improvement, genetic transformation, plant genome organization, structure and properties of DNA. Recombinant DNA procedures and associated methods; plant genome mapping, genome mapping and gene mapping and breeding.

ENY 5101C. Principles of Animal Taxonomy (4) Prereq: ENY 4004. Advanced study of elements of classification and phylogeny, taxonomic writing and International Code of Zoological Nomenclature.

ENY 5150 Systematic Entomology (3) Prereq: General Entomology. Recognition of all major families of insects in North America. Laboratory class featuring microscopic study of specimens.

ENY 5355 Insect Morphology (4) Prereq: ENY 3004. Comprehensive study of the external and internal anatomy of the major groups of insects, with some considerations of physiology.

ENY 5500 Aquatic Entomology (3) Prereq: General Entomology. Taxonomy and the adaptations of major orders of aquatic insects. Ecology and biological role of aquatic insects in freshwater ecosystem. Their role as a bioassessment tool for evaluation freshwater quality, By permission of Graduate Program Coordinator.

ENY 6215 Biological Control of Weeds (3). Prereq: ENY 3004

or consent of instructor. Students are encouraged to have taken insect ecology and insect classification. Principles of biological control of weeds will be presented, and examples of terrestrial and aquatic weeds with their biological control agents will be discussed. Invertebrate agents will be emphasized, but vertebrates and pathogens also will be discussed. A term paper will be assigned for completion during the semester, and a one hour seminar will be required on the same topic. There will be one or more field trips to biological control facilities in Florida.

ENY 6663 Medical Entomology (3). Prereq.: General Entomology. Theory, methodology and elucidation of pests of public health importance; biology, identification and pest management or medically important arthropod pests.

EVR 5063 Elements of Environmental Biology (4) Prereq: BSC 1011 or equivalent. Aspects of environmental biology at the biochemical and cellular level. Selected topics in cell structure and function, biochemistry, kinetics, genetics at the molecular chromosomal levels, embryology, blood and its function as well as coverage of green plant biology. Finally aspects of integration between plants, animals, and the environment will be presented. Lectures and laboratory.

FOS 5226 Advanced rood Microbiology and Safety (3) Prereq: FOS 4222C. Food production, spoilage, preservation, sanitation and poisoning. Bioprocessing, public health significance, safety aspects related to food production and safety. Current literature reviews on topical issues in these areas. By permission only.

FOS 5245 Meat Science and Meat Processing (4) Physical and chemical characteristics of meat and meat products, meat processing methods, and testing and identification. By permission only.

FOS 5314 Advanced Food Processing and Storage (3) Prereq: FOS 4311. Study of and justification of food processing methods used in preservation of major food commodities. Principles of all the different methods with laboratory demonstration. Relationship of these methods to "future foods". By permission only.

FOS 5315 Advanced Food chemistry (3) Prereq: FOS 4311. In this class the focus of discussion will be the chemical composition of foods as related to food properties and function. Reaction mechanisms, interrelationships, and chemical processes affecting food quality from raw to processed states. By permission only.

FOS 5325 Advanced Food Analysis (3) Prereq: FOS 4321 C. Advanced application of physical and chemical analytical methods for the quantitative determination of various food constituents and additives. Fundamental concepts underlying food analysis and comparison and justification of research methodologies. By permission only.

FOS 5906 Directed Individual Study (1-6) Individual study or research in food science under the supervision of faculty member. By permission only.

FOS 5930 Seminars in rood Science (1) Discussion of high priority food research areas which includes extensive library research, critical evaluation and class presentation. By permission only.

FOS 5940 Practical Food Experience (3) Supervised attachments at various food institutions in the research areas primarily. Student gets an exposure to equipment, methodologies and production principles. By permission only.

FRC 5805C Viticulture (4) Introduces the students to the art and science of grape growing. The history of grape production and utilization, is discussed with emphasis on North American and Florida grapes. A comprehensive survey of modern grape production practices is augmented with discussions of grapevine development, morphology and physiology of flowering and fruit maturation. Field experience in vineyard management will be provided. By permission only.

FRC 5808C Enology (4) Introduces the student to the origin and practices of enology, yeast fermentations and fruit processing. The course includes discussions on the chemistry of fermentation reactions, compositional evaluations, utilization and preservation of fermented beverages. Principles and products as related to grape cultivars used, and vilification technology employed. Use of Southeastern grapes is highlighted. By permission only.

HUN 5249 Advanced Human Nutrition (3) Prereq: HUN 2401 or FOS 3042. Topical issues in human nutrition research and relationships to food science.

PMA 5407c Integrated Pest Management (3) Prereq: General Entomology. An introduction to integrated pest management (IPM) dealing with theoretical and applied aspects of modern pest control strategies. The course consists of lectures and is divided into four sections. History of pest control and philosophy of 1PM, modern pest control strategies, case histories of 1PM programs. By permission only.

SOS 5217 Soil and the Environment (3) Prereq: Undergraduate physical sciences, mathematics, and basic soil sciences. Interpretation of soil chemical, physical, morphological and biological properties; information extraction from published soiled survey data; laboratory analyses and testing of spoils; soil classification and engineering applications; agricultural land classifications; soils and water conservation; and sustainable agroecosystems.

SOS 5305 Soil Microbiology (3) Prereq: General Chemistry, General Soils. The course contains the following topics: Soil Microbial Population, Decomposition of Organic Matter, Degradation of Pesticides and Other Chemicals in Soil, Nitrogen Fixation, Nitrogen Cycle, Microbial Population and Soil Fertility, and Biochemical Processes in Soil. By permission only.

SOS 5405C Soil Chemistry (3) Prereq: General Chemistry, General Soils, The inorganic and organic constituents of soils and the chemical and electrochemical phenomena in soil. By permission only.

DOCTOR OF PHILOSOPHY IN ENTOMOLOGY (IN COOPERATION WITH THE UNIVERSITY OF FLORIDA)

Florida is unique as it is the only state having 1862 and 1890 Land- Grant Universities with established entomology programs, and Florida A&M University is the only Historically Black Land-Grant University that oilers a B.S. and MS. degree in entomology. Cooperation between the two Universities in developing this innovative minority program represents a historic achievement in the profession of entomology and a landmark in higher education for both Universities. The cooperative Ph.D. in entomology has received strong support from a number of state and national societies, government agencies and industrial leaders.

Professors at Florida A&M University offer a broad spectrum of aquatic, agricultural, medical and veterinary entomology courses in Tallahassee and the research laboratories on the main campus at the Center for Biological Control, and at the Center for Air

and Water Quality are available for thesis research. Graduate students can take course work at both universities depending on their interests and their major professor can be any regular faculty member at either university. Scholarships and assistantships are available for qualified students.

ADMISSION POLICIES

1. General

For admission into the graduate program in the College of Agriculture and Food Sciences (CAFS) at Florida A&M University, and the Department of Entomology and Nematology at the University of Florida, an applicant must:

i. Have a baccalaureate or a master's degree in a related field from an accredited college or university;

ii. Present official scores of the Graduate Record Examination (GRE) taken within the last two years. For admission to the Ph.D. degree program, a minimum score of 1,000 points on the combined verbal and quantitative portions of the aptitude test or 300 points on the computer based GRE, and a minimum GPA of 3.0 (on a 4.0 scale) on the last two years of study for the baccalaureate degree or their highest awarded post-baccalaureate degree is required;

iii. Present official copies of transcripts from all universities attended;

iv. Have at least a GPA of 3.0 on all graduate work;

v. Present three letters of recommendation from someone familiar with the student's academic performance in their field of study;

vi. Submit a one-page personal statement, discussing the student's interest in a graduate degree;

vii. The student must have a major professor prior to being admitted for graduate studies.

2. International Students: In addition to the requirements listed above, official scores of 500 (minimum) for MS students or 550 (minimum) for Ph.D students on the Test of English as a Foreign Language (TOEFL) or a 213 on the computer based TOEFL is required for international students whose native language is not English. Students are required to purchase U.S. health insurance while at the university.

A minimum of 90 semester credits beyond the B.S. degree is required to obtain the cooperative Ph.D. degree. A maximum of 30 graduate credits may be transferred into a cooperative Ph.D. program from other universities. If a minor is taken, at least 12 credits in the minor subject are required, all of which must he courses 5000 and above. If two minors are taken, at least eight credits in each are required. It is policy that all cooperative

Ph.D. students will take statistics through at least a beginning graduate course (STA 6166 or equivalent) and at least a beginning biochemistry course at the undergraduate level. Doctoral students will be held responsible for a broad range of basic knowledge in their discipline. The qualifying examination includes questions on morphology, physiology, taxonomy, ecology and applied entomology.

Further information can be obtained from the Coordinator for the Cooperative Ph.D. in Entomology, Florida A&M University, Tallahassee, Florida 32307, Telephone (850) 599-8725, Fax (850) 599-8854.

GRADUATE COURSE DESCRIPTIONS

ENY 6135 Taxonomy of the Major Orders of Holometabola (4) Prereq: General Entomology. Identification of families of orders Coleoptera, diptera, Hymenoptera, and Lepidoptera; field trapping techniques, and common holometabolous families in North Florid ecosystems.

ENY 6166 Principles of Animal Taxonomy (3) Prereq: General Entomology or Biology. Principles involved in taxonomy and classification of animals; modern systematic techniques.

ENY 6215 Biological Control of Weeds (3) Prereq: General Entomology. Principles of biological control of weeds. Examples of terrestrial and aquatic weeds currently being treated or under study for treatment with biological control agents. Invertebrate agents will be emphasized and vertebrates and pathogens will be discussed. A term paper and a one-hour seminar on the topic are required. One or more field trips to biological control facilities in Florida.

ENY 6505 Aquatic Entomology (3) Prereq: General Entomology or Invertebrate Zoology. Abundance, diversity and function of aquatic insects in freshwater ecosystems; general ecology, biology, and taxonomy of major aquatic insect orders.

ENY 6507 Ecology of Freshwaters (3) Prereq: General Ecology Physical and chemical nature of freshwaters and their relationships to aquatic insects and other macroinvertebrates.

ENY 6508 Biological Monitoring of Freshwater Ecosystems (3) Prereq: Invertebrate Zoology, General Ecology, or General Entomology. Biomonitoring strategies for evaluating the health of freshwater ecosystems; importance of benthic macroinvertebrates as indicators of water quality.

ENY 6595 Mosquito Biology and Control (4) Prereq: General Entomology and/or Medical Entomology. Economic imrtance and taxonomy of mosquitoes with emphasis on state and municipal regulations and methods for mosquito control and arthropod-borne disease abatement.

ENY 6663 Medical Entomology (3) Prerep: General Entomology. Identification, biology, disease epidemiology and control of arthropods affecting human health.

ENY 6664 Veterinary Entomology (3) Prereq: General Entomology. Various disease relationships, biology and control of arthropods affecting the health of domestic animals.

ENY 6665 Integrated Pest Management for Public Health (3) Prereq: General Entomology, General Ecology. Introduction to methods of public health pest control using chemical and nonchemical techniques. Review of various types of public health abatement practices and how they may be integrated to manage pests in an efficacious and environmentally sound manner.

ENY 6814 Entomology Seminar (1). How to prepare and present scientific information to others.

ENY 6815 Biometry and Experimental Design in Entomology (3) Prereq: General Entomology and a basic course in Statistics.

In-depth survey and philosophy of experimental design through the use of entomological examples as models,

ENY 7979 Advanced Research (1-9). Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not open to students who have been admitted to candidacy.

ENY 7980 Research for Doctoral Dissertation (1-15). Research for doctoral students who have received admission to candidacy.

FACULTY

Anderson, Lee E., Professor (Ph.D., University of Florida); Monogastric Nutrition (Vitamin E), Reproductive Physiology, Animal Production.

Bloem, Kenneth, Adjunct Associate Professor (Ph.D., University of California-Davis); Sterile Insect Technique, Insect Rearing and Biological Control of Invasive Pests.

Bloem, Stephanie, Adjunct Associate Professor (Ph.D., University of California-Davis); Sterile Insect Technique, Taxonomy, Systematics, Insect Rearing, Area-Wide Pest Management, Biological Control.

Colova-Tsolova, Violeta, Professor (Ph.D. Institute of Genetic Engineering, Bulgaria); Cell Biology, Embryology, Plant Biotechnology, Plant Genetics and Breeding, Viticulture.

Duke Edwin, Associate Professor (Ph.D. University of Florida); Ornamental Horticulture.

F**lowers, Ralph W**., Professor Emeritus (Ph.D., University of Wisconsin); Water Quality, Aquatic Insects and Taxonomy of Chrysomelidae (Leaf Beetles).

Gardner, Cassel S., Professor (Ph.D., University of Florida); Alternative and Sustainable Agriculture Practices and their Interaction with the Environment, Nutrient Management and Water Quality.

Gitau, Margaret, Assistant Professor (Ph.D., Purdue University); Biological and Agricultural Engineering.

Hight, Stephen, Adjunct Professor (Ph.D., University of Maryland); Biological Control of Invasive Weeds.

Hsieh, Yuch P., Professor (Ph.D., Rutgers University); Organic Matter Dynamics and Nutrient Cycling, Sulfur Geochemistry, Bioremediation of Heavy Metals and Organic Pollutants

James, Neil A., Professor (Ph.D., University of Leeds, England); Nutritional Evaluation of Food Processing, Convenience Food Development, Quality Changes in Meat Products.

Kanga, H.B. Lambert, Professor (Ph.D. Texas A&M University); Insect Toxicology, Insect Pathology, Biological Control, Insecticide Resistance Management.

Keawin, Sarjeant. Assistant Professor (Ph.D., University of Florida). Nutrition and Animal Production.

Legaspi, Jesusa, Adjunct Professor (Ph.D. Purdue University); Biological Control and Integrated Pest Management (IPM) of Insect Pests of Vegetables.

Leong, Stephen, Professor (Ph.D., Louisiana State University); Agricultural Economics, Farm Management, Market Analysis, Experimental Design and Data Analysis.

Lorenzo, Alfredo B., Professor (Ph.D., Louisiana State University); Forestry and Natural Resource Management and Economics, Urban Forestry, Wildland Resources Science

Mbuya, Odemari, Professor (Ph.D., University of Florida); Nutrient Management, Water Quality, Phytoremediation, Computer Simulation Modeling and Remote Sensing.

Milla, Katherine, Professor, (Ph.D., Florida State University); Geology, GIS and Remote Sensing.

Muchovej James, Professor (Ph.D., Virginia Tech); Plant Pathology, Plant Physiology, Taxonomy of Fungi.

Musingo, Mitwe, Professor (Ph.D. University of Florida): Food Science. Fruit and Vegetable Processing with Emphasis on Juice and Wine Processing.

Olorunnipa, Zacch, Professor (Ph.D., University of Illinois); Agricultural Economics, Agricultural Marketing, International Agricultural Development, Agribusiness Management.

Onokpise, Oghenekome, Professor (Ph.D., Iowa State University); Tree Breeding and Forest Genetics; Crop Breeding, Biotechnology, Agroforestry, Plant Sciences, International Development in Agriculture, Forestry and Natural Resources.

P**escador, Manuel L**., Professor Emeritus (Ph.D., Florida State University); Systematics, Ecology and Biodiversity of Aquatic Insects; Bioassessment of Water Quality.

Phills, Bobby R., Professor (Ph.D., Louisiana State University); Horticulture/Plant Breeding; Plant Breeding and Genetics/Veg. Crop.

Sheikh, Mehboob B., Professor (Ph.D., University of Oklahoma); Molecular Biology and Biochemistry of Legume Seeds, particularly Peanuts, Aflatoxin Resistance and Improving Nutritional Quality.

Taylor, Robert W., Professor (Ph.D., Michigan State University East Lansing); Soil and Environmental Chemistry, Heavy Metal and Nutrient Interactions with Soil Surfaces.

Thomas, Michael, Professor (Ph.D., Ohio State University); Agricultural Economics, Environment Resource Economics.

Thomas, Verian D., Professor (Ph.D., University of Leeds, England); Food Chemistry, Food Processing: Nutrient Composition of Ethnic Foods.

Solis, Daniel., Assistant Professor (Ph.D.; University of Connecticut); Agricultural Production, Climate Economics, and Environmental Economics.

Division of Naval Sciences

The Naval Science Program at Florida A&M University (www.famu.edu/nrotc) is administered by the Naval Reserve Officers Training Corps (NROTC) Unit. This program affords selected men and women the opportunity to receive instruction in Navy specified courses which, in conjunction with the baccalaureate degree, will qualify them for a commission in the United States Navy or Marine Corps. Students enrolled in the university who are physically and academically qualified are eligible to apply for the NROTC program.

As Naval Officers, Florida A&M University NROTC graduates become eligible for varied careers, serving in aviation squadrons, on surface ships, on submarines in the nuclear power program, at naval installations all over the world, or in the numerous sub-specialties as an officer of the Marines Corps. With the consent of the Professor of Naval Science, any student, although not enrolled in the NROTC program, is eligible for enrollment in naval science courses. The Florida A&M University NROTC Unit offers participation through three programs: (1) the Navy-Marine Corps Scholarship Programs, (2) the Navy-Marine Corps College Program, and (3) the Two- Year NROTC Scholarship Program.

Faculty

NROTC
Professor: Clarke Henderson, Col/USMC
Associate Professor: Robin Smith, CDR/USN
Assistant Professors: Anthony Sousa, Maj/USMC, Bryan Sommer, LT/USN, Brian Rigez, LT/USN
Staff: Chaney, Corey., HRA; Robinson, Calvin, Supply Officer; Laurevius Washington, GySgt/USMC. AMOI; Brown, Derrick, ADMIN: Sharpe, Ila D., Office Manager

The Navy-Marine Corps Four-Year Scholarship Program - The NROTC Scholarship Program is open to all young men and women who are United States citizens. Students are selected on their own merit to become officers in the United States Navy and Marine Corps. Scholarship students are appointed Midshipmen, U.S. Navy. The Navy pays for tuition, fees, $375 per semester textbook grant, uniforms, and a monthly subsistence allowance of $250 (freshman), $300 (sophomores), $350 (juniors), and $400 (seniors).

Scholarship students are normally selected through national competition during their senior year in high school. Each year Minority Serving Institution Scholarship Reservation (MSISR) Scholarships are also available through a competitive selection process to high school seniors and college freshmen with less than 30 credit hours with academic potential or students who have completed at least one, but have not completed a second semester of course work at a university with a cumulative GPA of 2.5 or better and no grade below "C".

Although it is not a requirement, a student in the NROTC Scholarship Program is encouraged to pursue a major in engineering, mathematics, chemistry, or physics to meet the technological requirements of the Navy. Other fields of study for a major leading to a baccalaureate degree are permitted with the approval of the Professor of Naval Science. Regardless of the major, every Navy scholarship student must complete one year of calculus and one year of calculus based physics.

Students must take certain Navy or Marine Corps specified courses in their program and complete a program of courses as prescribed by the Professor of Naval Science. Upon graduation and successful completion of the naval science curriculum, the midshipman will receive a regular commission as an Ensign in the U.S. Navy or Second Lieutenant in the U.S. Marine Corps and serve on active duty for a minimum of five years.

The Navy-Marine Corps College Program-The NROTC College Program is designed to train and educate well-qualified young men and women for commissioning. Selected students are appointed as midshipmen in the Naval Reserve prior to commencement of the advanced course in the junior year. The Navy pays for uniforms and naval science textbooks during the four-year period. Midshipmen receive $350 (junior) and $400 (senior) subsistence pay. Each student is selected for enrollment in the program on the basis of past academic performance, potential, personal interviews, and a physical examination. A college program midshipman only acquires a military service obligation after entering the advanced courses at the beginning of the junior year.

Although there are no restrictions on the major college program students may pursue, it is highly recommended that they pursue a course of study similar to that of scholarship students. Students must also include in their program Navy specified courses and a program of courses in naval science. Upon graduation and successful completion of the naval science curriculum, students receive a commission as an Ensign in the U.S. Navy or a Second Lieutenant in the U.S. Marine Corps and serve on active duty for a minimum of four years.

Two-Year NROTC Scholarship Program - The two-year scholarship program is administered in the same manner as the two-year non-scholarship program, except that a student who has excelled in math, physical science, or engineering and who has demonstrated above average performance in integral calculus may be selected for a two year full-tuition scholarship; the student will receive $350.00 subsistence (juniors) and $400.00 subsistence (seniors) per month, books, and lab fees.

Summer Training - The NROTC Scholarship Program student is required to complete training of approximately four weeks during each of the three summer recesses. During the first summer period, each scholarship student will receive instruction in aviation training, marine combat training, surface warfare indoctrination, and submarine indoctrination either in Norfolk, Virginia, or San Diego, California. The second summer training will be performed aboard operational ships of the U.S. Fleet. During the third summer, candidates for U.S. Navy commissions will perform training aboard operational ships as junior officers. The student who qualifies for nuclear propulsion training may elect to cruise on nuclear powered ships or submarines. Naval Special Operations and Naval Special Warfare training is also available for third summer Midshipmen interested in those areas. Some midshipmen cruise with allied navies through the Midshipman Foreign Exchange Program. Transportation costs to and from the training sites, subsistence, quarters, and pay of approximately $1,000 per month will be paid to every participating student.

Specified University Courses: In addition to satisfying requirements for a baccalaureate degree, the student must satisfactorily complete the following four-year curriculum guide, including required naval science courses and specified university courses.

Freshman Year	**Sem. Hrs.**
NSC 1110 Introduction to Naval Science (Note 1)	3
NSC 1140 Seapower and Maritime Affairs (Note 1)	3
NSC 1101 Naval Science Lab	0
Amer. Military History/International Relations	3
Cultural Awareness (Note 5)	3
Sophomore Year	
NSC 2231 Leadership and Management (Note 1)	3
NSC 3214 Navigation (Note 1,4)	3
MAC 2311, 2312 Calculus I, II (Note 3)	8
NSC 2102 Naval Science Lab	0
Junior Year	
NSC 2121 Naval Ship Systems I (Engineering) (Note 4)	3
NSC 2122 Naval Ship Systems II (Weapons) (Note 4)	3
NSC 3221 Evolution of Warfare (Note 2)	3
PHY 3048, 3049 Physics I, II (Note 3)	10

NSC 3103 Naval Science Lab	0

Senior Year

NSC 3213 Naval Operations	3
NSC 4232 Leadership and Ethics	3
NSC 4224 Amphibious Warfare (Note 2)	3
NSC 4104 Naval Science Lab	0

NOTES:
(1) Undergraduate naval sciences courses required to be completed for a scholarship student before Fall Semester junior year.
(2) Required of Marine Option midshipmen only
(3) One year each of calculus with analytic geometry and calculus based physics is required for every Navy option scholarship student. Recommended, but optional, for College Program and Marine Options.
(4) Required of Navy Option Midshipmen only.
(5) NROTC midshipmen will take a semester course in regional studies, world culture and/or world religions with emphasis on Third World, Far East, and SW Asia.
Furnished Items - All uniforms, textbooks, and equipment needed by the student for naval science courses are furnished by the Navy. Use of Navy Science courses as University Electives-Academic departments within the university may, according to their own policies, accept naval science courses as electives to fulfill requirements in their academic program.

Naval Science Minor - Upon successful completion of the four-year Naval Science Program, a student may be awarded a minor in naval science. Specific requirements should be arranged with the student's academic department..

FAMU-FSU-TCC Cooperative Program - Utilizing cooperative enrollment procedures, a student at Florida State University or Tallahassee Community College is fully eligible for all NROTC programs offered at Florida A&M University.

Naval Science Laboratory - The Naval Science lab meets once per week for two hours covering professional and military subject matter. Attendance is mandatory for all midshipmen.

Course Descriptions
NSC 1110 Introduction to Naval Science (3) Structure and principles of Navy organizational concepts are examined, including lines of command and control to the carious major, intermediate, and basic shore establishments and sea-based units of the Navy and Marine Corps.
NSC 1140 Seapower and Maritime Affairs - Naval History from American Revolution (3) Includes geopolitical theory of Mahan, economic issues of maritime commerce; law of the sea, and comparison of U.S. and Soviet strategies.
NSC 2121 Naval Ship Systems I (3) General introduction to naval ship engineering systems. Particular emphasis upon ship compartmentalization, propulsion systems, auxiliary power systems, interior communications, and ship control. Elements of ship design and ship stability characteristics areincluded. The course covers engineering organization and structure and purpose of naval ships.
NSC 3123 Naval Ship Systems II (3) Provides an in-depth understanding of naval weapons, their associated systems and the integration of the weapons systems into the overall battle plan of the U.S. Navy.
NSC 3213 Naval Operations (3) Communications, sonar-radar search, and screening theory; practical formations and dispositions; relative motion; the maneuvering board and tactical plots analyzed for force effectiveness and unity.
NSC 3221 Evolution of Warfare (3) Arts, concepts, and evolution of warfare. Exploration of forms of warfare practiced by great warriors of history, leading to understanding of historical continuity and change during important periods.
NSC 3214 Navigation (3) Two hour lab also required. Theory, principles and procedures of ship navigation, dead-reckoning, piloting, nautical rules of the road, nautical astronomy, celestial navigation, including spherical triangulations and uses of electronic and inertial navigational systems.
NSC 4224 Amphibious Warfare I (3) Designed to provide students with a basic knowledge of the evolution of amphibious warfare. It covers theory, technique, and conduct of amphibious operations and its role in the projection of sea power. Emphasis on the evolution of amphibious warfare in
the 20th century; WWII, current capabilities, and projected use in the future are explored.
NSC 2231 Leadership and Management (3) Comprehensive advance level course in organizational behavior and management. Topics include management functions of planning, organizing, and controlling, an introduction to individual and group behavior in organizations, extensive study on motivation and leadership. Other topics include decision making, communication, responsibility, authority, and accountability. Students gain extensive experience in writing and giving oral presentations.
NSC 4232 Leadership and Ethics (3) Study of naval junior officers' responsibilities in naval administration. Courses exposes the student to a study of counseling methods, military justice, human resources management and military ethics. This capstone course builds on and integrates professional competencies developed in prior course work and professional training. Philosophy and ethics lay the foundation for development of the above ideas.

Operations	3
NSC 4232 Leadership and Ethics	3
NSC 4224 Amphibious Warfare (Note 2)	3
NSC 4104 Naval Science Lab	0

NOTES:
1. Undergraduate naval sciences courses required to be completed for a scholarship student before Fall Semester junior year.
2. Required of Marine Option midshipmen only
3. One year each of calculus with analytic geometry and calculus based physics is required for every Navy option scholarship student. Recommended, but optional, for College Program and Marine Options.
4. Required of Navy Option Midshipmen only.
5. NROTC midshipmen will take a semester course in regional studies, world culture and/or world religions with emphasis on Third World, Far East, and SW Asia.

Furnished Items - All uniforms, textbooks, and equipment needed by the student for naval science courses are furnished by the Navy. Use of Navy Science courses as University Electives-Academic departments within the university may, according to their own policies, accept naval science courses as electives to fulfill requirements in their academic program.

Naval Science Minor - Upon successful completion of the four-year Naval Science Program, a student may be awarded a minor in naval science. Specific requirements should be arranged with the student's academic department..

FAMU-FSU-TCC Cooperative Program - Utilizing cooperative enrollment procedures, a student at Florida State University or Tallahassee Community College is fully eligible for all NROTC programs offered at Florida A&M University.

Naval Science Laboratory - The Naval Science lab meets once per week for two hours covering professional and military subject matter. Attendance is mandatory for all midshipmen.

Course Descriptions

NSC 1110 Introduction to Naval Science (3) Structure and principles of Navy organizational concepts are examined, including lines of command and control to the carious major, intermediate, and basic shore establishments and sea-based units of the Navy and Marine Corps.

NSC 1140 Seapower and Maritime Affairs - Naval History from American Revolution (3) Includes geopolitical theory of Mahan, economic issues of maritime commerce; law of the sea, and comparison of U.S. and Soviet strategies.

NSC 2121 Naval Ship Systems I (3) General introduction to naval ship engineering systems. Particular emphasis upon ship compartmentalization, propulsion systems, auxiliary power systems, interior communications, and ship control. Elements of ship design and ship stability characteristics are
included. The course covers engineering organization and structure and purpose of naval ships.

NSC 3123 Naval Ship Systems II (3) Provides an in-depth understanding of naval weapons, their associated systems and the integration of the weapons systems into the overall battle plan of the U.S. Navy.

NSC 3213 Naval Operations (3) Communications, sonar-radar search, and screening theory; practical formations and dispositions; relative motion; the maneuvering board and tactical plots analyzed for force effectiveness and unity.

NSC 3221 Evolution of Warfare (3) Arts, concepts, and evolution of warfare. Exploration of forms of warfare practiced by great warriors of history, leading to understanding of historical continuity and change during important periods.

NSC 3214 Navigation (3) Two hour lab also required. Theory, principles and procedures of ship navigation, dead-reckoning, piloting, nautical rules of the road, nautical astronomy, celestial navigation, including spherical triangulations and uses of electronic and inertial navigational systems.

NSC 4224 Amphibious Warfare I (3) Designed to provide students with a basic knowledge of the evolution of amphibious warfare. It covers theory, technique, and conduct of amphibious operations and its role in the projection of sea power. Emphasis on the evolution of amphibious warfare in
the 20th century; WWII, current capabilities, and projected use in the future are explored.

NSC 2231 Leadership and Management (3) Comprehensive advance level course in organizational behavior and management. Topics include management functions of planning, organizing, and controlling, an introduction to individual and group behavior in organizations, extensive study on motivation and leadership. Other topics include decision making, communication, responsibility, authority, and accountability. Students gain extensive experience in writing and giving oral presentations.

NSC 4232 Leadership and Ethics (3) Study of naval junior officers' responsibilities in naval administration. Courses exposes the student to a study of counseling methods, military justice, human resources management and military ethics. This capstone course builds on and integrates professional competencies developed in prior course work and professional training. Philosophy and ethics lay the foundation for development of the above ideas.

College of Education

Florida A&M University's (FAMU) College of Education (COE) has proven its commitment to producing quality teachers for the nation's children by achieving accreditation under the performance-oriented standards of the National Council for Accreditation of Teacher Education (NCATE), now known as the Council for Accreditation for Educator Preparation (CAEP). FAMU is one of only four universities in the state of Florida whose College/ School of Education has received continuous accreditation since 1954.

The primary mission of the college is the production of transformative professionals to serve in educational institutions who are informed, proactive, competent, and reflective practitioners. The College of Education administers the pre-service and in-service professional education and graduate programs encompassed within four (4) undergraduate and graduate degree granting departments: Elementary Education; Secondary Education, Technology Education and Foundations; Health, Physical Education and Recreation; and Educational Leadership and Counseling. The College of Education provides relevant curriculum for elementary, secondary, and graduate education programs supporting undergraduate and graduate degrees.

The COE purposes to: (1) assume leadership for the selection, guidance and professional preparation of teacher educators and practitioners who will serve in elementary, secondary and post-secondary schools, and other related agencies of Florida and the nation; and (2) provide a substantial foundation for advanced study as students choose to extend their educational preparation and pursuits. These purposes will be met through a foundation of general education, a planned sequence in professional education and rigorous graduate programs providing excellent preparation for professional pursuits, graduate study and post-graduate work. The operation of the College of Education is founded on four thematic processes:

Commitment to social justice
Collaboration and strategic partnerships
Clinical practice
Integration of digital media

The COE employs these processes to prepare its teacher and leadership candidates to become transformative teachers and leaders. The COE seeks to develop candidates' knowledge, skills, and dispositions in alignment with the pillars of effective practice for the 21st century educator. These pillars are: professional expertise (pedagogy and content knowledge); critical inquiry; cultural competence; and reflective practice. Program faculty draw upon a legacy of excellence and a commitment to teaching, research and service in order to provide the highest quality of instruction and learning experiences for teacher and leadership candidates.

The College of Education provides the relevant curriculum for elementary, secondary, and graduate education programs supporting undergraduate degrees (B.A./B.S.) and graduate degrees (M. Ed. Curriculum and Instruction; M.Ed./M.S. Elementary Education; and M.S./ M.Ed./ Ph.D Educational Leadership, M.S./M.Ed. Counselor Education and M.Ed. Sport Management).

Administration
Interim Dean: Patricia Green-Powell, Ph.D.
Interim Associate Dean: Dawn Holley Dennis, Ph.D.
Director, Assessment and Accountability: Peggy P. Auman, Ph.D.

UNDERGRADUATE

Foundation of General Education
This sequence is designed to: (1) prepare the student to meet the demands of a changing civilization and society; (2) use sound judgment in decision-making; (3) participate in national and international affairs; (4) meet state requirements for teacher certification; and, (5) prepare students for the Florida Teacher Certification Examination (FTCE) Test of General Knowledge.

I. Communication [6}*
ENC 1101, ENC 1102 Freshmen Communication Skills I & II or ENC 1121, ENC 1122 Honors Freshman Composition I & II

II. Mathematics [6]*
Two (2) mathematics courses at or above College Algebra from the approved course list.

III. Natural Sciences [6]*
Two (2) courses from the approved natural sciences course list.

IV. Social Sciences [6]*
AMH 2091 Introduction to African American History and one non-history course approved from the social sciences course list.

V. Humanities [6]*
Two (2) courses from the approved humanities course list.

VI. Electives [6]*
SPC 2608 Public Speaking or HSC 1100 Health for Modern Living or any course from the approved mathematics, natural sciences, social sciences, or humanities lists.

Total: 36* A minimum grade of "C" is required in each of these general education courses and a composite grade point average (GPA) of 2.5 or above.

Pre-Teacher Education Courses
The following four courses (w/name change effective Fall 2015) are required as part of the student's general education program and are incorporated into all teacher education programs throughout the State University System of Florida. They also are incorporated into Florida community college programs for aspiring education majors. All students must purchase TaskStream e-portfolio software to begin to document artifacts that exhibit their growing professional expertise.

EDF 1005 Introduction to the Teaching Profession w/Field Experience 3

EDF 2085 Introduction to Diversity for Educators w/Field Experience	3
EME 2040 Introduction to Technology for Educators	3
EDG 1072 College Success and Beyond	3

A Planned Sequence in Professional Education
This sequence is designed to: (1) develop students' skills in recognizing growth and development; (2) provide opportunities for students to diagnose educational problems confronting the community, state, and nation; (3) provide opportunities for students to evaluate curriculum; (4) provide students opportunities to become technologically astute; and (5) assist students in gaining practical experience in the classroom. The professional core consists of coursework that meets the general professional education requirements for initial teacher certification in the state of Florida. Check specific programs for their requirements.

A Planned Sequence in the Area of Specialization
This sequence is designed to furnish the student with a command of the subject matter in an area of specialization. In the implementation of this sequence, the available resources of the university and community are used. The College of Education has cooperative arrangements with Florida school districts for its field experiences. The field experiences are designed to provide pre-service teachers with an opportunity to examine daily classroom experiences with teachers and their students. Students must purchase liability insurance and provide documentation of one's own medical insurance.

Criteria for Admission to Teacher Education
The College of Education monitors the admission policies for all undergraduate and graduate teacher education programs. Admission to teacher education is a formal process in which certain criteria must be met, and the Application for Admission to Teacher Education must be completed and filed. Applications are processed by the Center for Academic Success. This process must not be confused with admission to the University. All undergraduate teacher education majors will be classified as pre-teacher education students until they are formally admitted into a professional teacher education program. Pre-teacher students will be restricted to a limited number of identified courses in teacher education prior to being officially admitted to a specific teacher education program.

Students seeking admission to any teacher education program must meet all of the following criteria:

• Have a grade point average (GPA) of 2.50 or higher for the general education component of undergraduate studies; or
• Have completed the requirements for a baccalaureate degree with a minimum grade point average of 2.50 or higher;
• Have met all "Gordon Rule" requirements;
• Have a "C" or better in the required courses in their curriculum;
• Have successfully passed a criminal background investigation;
• Have successfully passed all parts of the FTCE - General Knowl edge Exam;

• Have successfully completed a pre-admission interview by the College of Education Admission Committee.

Students are admitted to designated teacher education programs and/or classified as Professional Teacher Education Majors in their respective degree program when these criteria are met.

Since it is possible for students to apply for admission to teacher education at several points in their academic career, the following policies have been adopted for these variations:

• Pre-education majors at Florida A&M University are encouraged to complete the Application for Admission to the Professional Teacher Education Program and file the same with the Center for Academic Success as soon as they meet the requirements for admission. They should meet all criteria by the time they have earned 60 credit hours. If they have not met the criteria by the time they have earned 75 credit hours, they will be advised to change to a non-teaching major.

• Students transferring from a community or junior college or another four-year institution with an AA degree or 60 or more hours should apply by the end of the first semester they are enrolled at Florida A&M University. If they have not met the criteria by the time they have earned 75 credit hours, they will be advised to change to a non-teaching major.

• Students who seek to change their majors to pre-teacher education after enrolling in other programs at Florida A&M University must have a 2.5 or higher grade point average. If they have earned fewer than 60 credit hours, they should apply as soon as they meet the requirements for admission, but by the time they have earned 75 credit hours. If they have already earned more than 60 credit hours, they should apply within one semester of changing their majors. Students will be informed each semester as to their status towards admission into professional teacher education through their advisors in Center for Academic Success.

The Student Teaching Program
Student teaching is a supervised classroom teaching experience in an accredited elementary or secondary school for a minimum of fourteen weeks. Prerequisites for participating in this culminating experience are:

Preparation
To comply with the Jessica Lunsford Act and ensure the security and safety of students, faculty and staff, all student teachers must complete the following:

1. Complete a Level II background screening (fingerprinting). Application forms are available in 301-B Gore Education Complex. Cost of this screening is $95.00;
2. Secure your own medical insurance (Leon County School District only);
3. Purchase professional liability insurance; and
4. Purchase FAMU ID badge.

Requirements of Student Teaching
Student teaching is required of all teacher education majors who seek completion of a state approved program. Students desiring to participate in the student teaching program must meet the following criteria:

• Have been admitted to a teacher education program;

• Have satisfactorily completed all program requirements;
• Have a cumulative and field of study G.P.A. of 2.50 or better prior to the deadline for submission of the pre-student application;
• Have passed a Level II security background check; and
• Have passed all portions of the Florida Teacher Certification Examination.

Admission to teacher education is administered through the College of Education's Center for Academic Success. Admission to student teaching is administered through the College of Education's Office of Student Teaching. Application for student teaching must be approved the semester preceding the semester in which the student desires to complete the student teaching experience. Students will be required to adhere to published deadline dates.

NOTICE:

• Florida statutes require individuals applying for a Florida teaching certificate to be finger printed and to reveal all criminal history (Section 943.0585, F.S.) records, including sealed or expunged records.

Application Procedures For Student Teaching
The procedures for making application to participate in the student teaching program are as follows:

• Students should complete a Pre-Student Teaching Application at least one semester prior to the semester in which he/she plans to participate in the student teaching program, to the Office of Student Teaching for initial screening to determine his/her status.

• The application will be evaluated by the Office of Student Teaching staff to determine if the applicant meets the unit's requirements to participate in the student teaching program.

• It is the responsibility of the student to pick up the approved Pre-Student Teaching Application and deliver it to the Office of Student Teaching, which is responsible for the advising of students in receiving their Student Teaching Application.

• Students receiving Student Teaching Instruction Sheet are expected to complete and submit the application at predetermined deadlines. These deadlines are posted on appropriately situated bulletin boards and online.

• Completed Student Teaching Applications are returned to the Office of Student Teaching who then forwards them to the appropriate departments for review and approval or disapproval.

• All applications are returned to the Office of Student Teaching by the departments for appropriate action.

• Students who do not qualify to participate in the student teaching program are notified of the deficiencies and are advised of how they can overcome the deficiencies.

Application Deadline

Semester Desired for Student Teaching	Deadline
SPRING SEMESTER	October 22
FALL SEMESTER	April 15

Graduation Requirements

Students seeking program completion from FAMU's state approved teacher education programs must successfully complete the following requirements:
• Admission to the teacher education program;
• Passing all subtests of the Florida Teacher Certification Examination (semester before student teaching);
• Satisfactory completion of all course work with the required cumulative GPA of 2.50;
• An electronic portfolio that documents mastery of the Florida Educators Accomplished Practices;
• External evaluation of satisfactory teaching ability; and
• Internal evaluation of satisfactory teaching ability.

Center For Academic Success
Mission
In support of the College of Education, the mission of the Center for Academic Success is to instill in students the values of academic excellence, accountability, integrity, and professionalism as they prepare for careers as transformative educators. As the core of the College of Education, the Center provides services to pre-education majors, assisting them in gaining admission into the Professional Teacher Education Program. Additionally, the Center for Academic Success, in collaboration with the Candidate Empowerment Center, a College of Education resource lab, encourages and assists students in their preparation for the Florida Teacher Certification Examinations.

The Center for Academic Success is the College of Education's essential resource facility. The Center's major responsibility is to assist undergraduate teacher education majors to gain entry into the teaching profession. This responsibility is accomplished via academic advisement and professional development.

Academic Advisement
The Center recognizes that advisement is an indispensable process for guiding students through their chosen degree programs. To facilitate this process, each student is assigned an advisor. The purpose of the academic advisement program is fivefold:
• To assist pre-teacher education students in the selection of and registration for current courses for their degree program;
• To advise students of and assist students in meeting the academic criteria for admission into the professional teacher education programs;
• To monitor students' matriculation in an effort to avoid academic failures;
• To refer students to programs that provide additional support services if needed; and

• To encourage academic success and professional career development.

Requirements For Admission To Teacher Education
Students seeking admission to any FAMU College of Education undergraduate teacher education program must meet the following criteria:

• A cumulative grade point average (GPA) of 2.5 or higher for the general education component of undergraduate studies;
• A grade of "C" or higher in all required general education courses;
• Documentation of passing the four subtests of the General Knowledge Test of the Florida Teacher Certification Exam (FTCE);
• All Gordon Rule requirements;
• Successful completion of a preadmission interview; and
• Passage of a criminal background investigation.

The College of Education expects students, with the assistance of faculty advisors, to assume responsibility for their academic success as they matriculate through the college and university. To accomplish this goal, students are responsible for knowing the rules, regulations, policies, and procedures of the university and college as they pertain to their degree programs.

Other Services
The Center provides a variety of professional services designed to produce teaches who are professionally astute, exemplary, confident, analytical, reflective, proactive, and ethical. Some services the Center provides include:
• Dissemination of information, concerning scholarships;
• Coordination of the professional development forums; and
• Participation in the recruitment activities for the college and university.

Candidate Empowerment Center
Mission
In support of the College of Education's mission, the Candidate Empowerment Center is to provide innovative and engaging approaches to assist pre-service teachers in their acquisition of knowledge as well as meeting the needs of state and national certification. (Title III Funded Program).

The Candidate Empowerment Center (CEC) offers teacher education candidates academic support and provides assistance in the preparation for the General Knowledge (GK) Examination, Professional Education Examination (PED), and Subject Area Examination (SAE) of the Florida Teacher Certification Examination (FTCE) via practice exams, one-on-one tutoring, workshops, and print resources which help improve course and FTCE pass rates. The Center staff takes the time to get to know our candidates' educational needs to better serve them. The Center offers online modules whose test design help target students' study needs. Tutors use the results of these tests to assist in their preparation. Practice runs of the exam are also available so that students have a real-life example of how their test-day will be.

The Center is equipped with a computer lab, iPad center, and a resource library. College of Education students are able and encouraged to check-out any of the print resources, utilize our technology or receive online access to any of our tutoring software services to assist them in their test preparation. Staff also offers tutoring services for reading, math, writing and English courses.

Resources Available:
• Computer lab is equipped with wireless internet;
• iPads for check-out (five-hour period);
• Microsoft Office and tutorial software such as ThinkTime, FTCE GK, professional and subject area software and MyFoundationsLab;
• General knowledge sample tests, flashcards and study guides;
• Professional education sample tests, flashcards and study guides;
• Subject area examination sample tests, flashcards and study guides;
• Monthly workshops-study tips, subject area examination preparation, and small group workshops;
• Tutoring Services in math, reading, English and writing; and
• All print resources are available for check-out.

Hours of Operation: Monday through Friday 8am-5pm
Location: Gore A211, (850)-412-5613 (850)-412-5613, candidatecenter@famu.edu
Follow us on Twitter: FAMU_COE or Friend us on Facebook: FAMU_COE

Department of Elementary Education

The major purpose of the elementary education program is to provide carefully planned experiences that will result in the development of competent teachers for the schools of Florida and the nation. The program leads to Florida certification in elementary education, grades K-6 and includes English for Speakers of Other Languages (ESOL) and Reading Endorsement. The curriculum is organized to provide approximately two years of general education. The last two years consist of professional and specialized preparation.

Faculty
Associate Professors: Bauman, Gail; Fontaine, Nancy; Newell, Mary; Ansley, Thyria; Thomas, Patty Ball
Assistant Professors: Blankenship, Rebecca; Davis, Cheron

Elementary Education Program of Study*

Freshman Year	**Sem. Hrs.**
Fall Semester	
ENC 1101 Freshman Communication Skills I	3
MGF 1107 Liberal Arts Math II	3
HSC 1100 Health for Modern Living	3
EDG 1072 College Success and Beyond	3
HUM 2211 Historical Survey	3
Total	**15**

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communicative Skills II	3
MAC 1105 College Algebra	3
BSC 1005 Biological Science	3
AMH 2010 American History I/II OR	3
LIT 2110 /2120 Introduction to Literature I, II	
SYG 2000 Sociology	3
Total	**15**

Sophomore Year	**Sem. Hrs.**
Fall Semester	
AMH 2091 Overview and Introduction to African American History	3
GLY 2001 Earth Space Science	3

EDF 1005 Introduction to the Teaching Profession w/Field Exp	3
EDE 2940 Field Clinical I: Orientation to Teaching Young Children	3
Total	**12**

Spring Semester

EEC 3700 Child Development	3
EME 2040 Introduction to Technology for Educators	3
EDF 2085 Introduction to Diversity for Educators w/Field Exp	3
ISS 2102 Interdisciplinary Social Sciences OR PSY 2012 Introduction to Psychology	3
Total	**12**

Junior Year

Fall Semester

EEX 3011 Introduction to Education of Exceptional Children	3
EDF 3430 Measurement and Evaluation of Educational Growth	3
TSL 3080 Intro. to ESOL Theories and Practices	3
LAE 3314 Language Arts for Elementary Schools	3
RED 3013 Teaching Reading and Diagnosing Its Growth	3
EDE 3940 Field Clinical II - Theory & Practice of Teaching Instruction	3
Total	**18**

Spring Semester

EEX 4601 Behavior Management	3
TSL 4345 Methods of Teaching ESOL	3
RED 4519 Recognizing & Diagnosing Growth in Reading	3
MAE 3310 Mathematics in Elementary Schools	3
LAE 3413 Children's Literature	3
SCE 3811 Teaching Science in Elementary Schools	3
Total	**18**

Senior Year

Fall Semester

RED 3333 Reading in the Content Areas	3
MUE 3210 Public School Music/Nonmajors	3
ARE 3313 Public School Art in Elementary Schools	3
EME 4400 Computer Applications in Education	3
EDE 4940 Field Clinical III: Professional Theory & Legal Aspects: Role of the Teacher	3
SSE 3113 Teaching Social Studies in Elementary School	3
EDE 3921 PRofessional Education Forum and Colloquium	0
Total	**18**

Spring Semester	**Sem. Hrs.**
EDE 4943 Student Teaching in Elementary Schools	12
	Sem. Hrs.
Total	**120**

*(Effective Fall 2015—Students entering the program and thereafter are required to complete 120 semester hours).

Course Descriptions

EDE 2940 Field Clinical I Orientation to Teaching Young Children (3) The purpose of this course is to facilitate successful entry into the teacher education program. It examines pedagogy and professional knowledge, which promote continuous professional growth; present effective researched-based classroom practices and strategies that are widely accepted in our nation's school. Students are provided field clinical experiences through visiting classrooms to observe and participate in learning activities prior to student teaching. Students are required to create and maintain an electronic portfolio that will be used to correlate information between pre-service teachers' work and the Florida Accomplished Practices.

EDE 3940 Field Clinical II: Theory and Practice of Teaching/ Instruction (3) The purpose of this course is to help pre-service teachers identify sound educational practices; make systematic logical and humane instructional decisions; to develop skills in the use of instructional strategies; and finally to give students an opportunity to put theory into practice, demonstrating the teaching competencies correlated to the Florida Department of Education's Educational Standards Commission Accomplished Practices and selected ESOL standards. This course also prepares pre-service teachers to teach those students who are gifted, academically challenged, experiencing language acquisitions and/or economically deprived socially and culturally.

EDE 3921 Professional Education Forum & Colloquium (0) This course exposes candidates to the support system outlined for their success. This course is also available for initial certification candidates at the master's level.

EDE 4940 Field Clinical III: Professional Theory & Legal Aspects/Role of the Teacher (3) The purpose of this course is to acquaint pre-service teachers with the Florida Law and the six (6) domains identified by the state of Florida as to what the skills are that comprise a successful classroom teacher. Students will acquire sufficient knowledge that will enable them to identify effective teaching behaviors. Included here will be critical theoretical frameworks, effective curricular/school safety programs, key classroom management techniques, professional ethics and best practices as related to the domains listed in the Florida Accomplished Practices. Students will become familiar with the legal cases that shape Florida laws and the most effective methods for instructing and guiding all students, including those that are physically, mentally, economically, socially, emotionally, culturally and linguistically challenged.

EDE 4943 Student Teaching for Elementary School (12) Student teaching is a directed internship program designed to expose teacher education majors to a carefully planned program and professional growth.

EEC 3301 Nursery-Kindergarten Education (3) Theory and techniques of teaching in a nursery and kindergarten program. Includes curriculum planning, scheduling, construction and utilization of teaching materials; teaching techniques and methods of evaluation in a nursery and a kindergarten environment.

EEX 3011 Introduction to Education of Exceptional Children (3) General survey course providing an orientation to exceptional child education as an integral part of the general educational program. Including an introduction to appropriate needs, placement,

and resources for exceptional children. Required attendance at selected activities.

EEX 4601 Behavior Management (3) Prereq: EEX 3011. Examination of the principles of behavior modification as they are applied in a classroom setting. Emphasis on basic skills for systematic observation, recording, analyzing behavior, and manipulating of learning conditions in the classroom and individualized settings. Field experience required.

LAE 3314 Teaching Language Arts in the Elementary School (3) Critical examination of practices and materials in reading, speaking, writing, and listening experiences for elementary school students.

LAE 3414 Children's Literature (3) Survey of literature for children. Designed to help the preservice teacher explore children's books and find meaningful ways to promote growth and development of the young through a wide range of activities that stem from story reading, storytelling, and other creative means.

MAE 3310 Mathematics in Elementary School (3) Prereq: Three semesters of mathematics. Mathematics content and methodology related to currently recommended curricula, grades K-6.

RED 3013 Teaching Reading and Diagnosing its Growth (3) Identification of components of the reading process. Principles, methods, approaches, issues, and trends in the teaching of reading in the elementary grades.

RED 3333 Reading in the Content Area (3) Place of reading in the middle and high school. Trends and practice in reading instruction, the prevention of reading difficulties and the integration of reading strategies in the content areas.

RED 4519 Recognizing and Diagnosing Growth in Reading (3) Prereq: RED 3013. Identification of the components of the reading process and the evaluation of those components. Diagnostic and corrective reading principles and procedures that enable prospective teachers of reading to provide instructional materials and experiences for students. Field experience included.

RED 4800 Educational Clinic in Reading (3) Prereq: RED 4519. Prospective teachers implement considerations in reading with practice in clinical situations.

SCE 3811 Science for the Elementary School (3) Prereq: Basic concepts of biological and physical science, with emphasis on application to teaching science.

SSE 3113 Teaching Reading in Elementary School Social Studies (3) The course will provide pre-service teachers with information needed to develop young children who have knowledge, skills, and dispositions that lead to an understanding of the world in which they live and their relationship to that world. The integrative approach utilized promotes the development of knowledge and skills needed to promote an understanding of time, continuity, culture, change; government and citizenship; economics. Students will also apply information learned through practical field experiences in settings which serve children ages 3-8, including English language learners

TSL 3080 Introduction to ESOL Theories and Practices (3) This course introduces students to the underlying theories and principles that shape the field of ESOL. It includes the legal issues and historical foundations for serving the ELL theories of first and second language acquisition/development, principles of language assessment, and issues of language interferences. Additionally, it lends attention to the subsystems of language, role of language transfer, Basic Interpersonal Communication Skills (BICS), Cognitive Academic Language Proficiency (CALP), language pragmatics and cultural issues in communication.

TSL 4345 Methods of Teaching ESOL (3) This course focuses on major methodologies and strategies for teaching ELL. It provides specific instructional techniques and practices for the teaching of reading, language arts and content-specific subject matter. It provides guidelines for unit and lesson planning, classroom management,, multi-level learning activities and related instructional competencies. It also provides a field clinical experience in classroom settings with the ELL. Prerequisite TSL 3080.

Pre-Kindergarten Primary Education ESOL/Reading Endorsed (age 3 – grade 3)

Program of Study *

The Prekindergarten Primary Education Program is built on the philosophy that, in partnership with the family, all children can learn. Through FAMU's Prekindergarten Primary Education Program, you will be prepared to work with infants, toddlers, preschoolers and school-age children through age eight in a childcare, educational, or human service agency setting. Qualified faculty instructors and advisors who have a background in public and private school education, special education, nursing, early intervention, and child welfare are ready to support your pre-professional preparation. Students can earn an undergraduate degree, obtain the preparation necessary for passing the Florida Teacher Certification Exam, and be eligible to teach prekindergarten through third grade in Florida, as well as other states.

During their Program, students develop an electronic portfolio that results in a personalized representation of their collective knowledge, skill, and experience. Portfolios can be used to provide potential employers with valuable information about your qualifications and experience.

Classes are small and structured to meet the needs of students who desire an active experience throughout their course of study. Didactic discussions, role-plays, case studies, interviews, and clinical experiences in early development and learning settings such as child care centers, public and private schools, and early intervention programs are facilitated within courses.

Freshman Year	**Sem. Hrs.**
Fall Semester	
EDG 1072 College Success and Beyond	3
BSC 1005 Biological Science	3
MGF 1107 Lib Math II	3
ENC 1101Freshman Communication I	3
Total	**12**

Freshman Year	**Sem. Hrs.**
Spring Semester	
ENC 1102-Freshman Communications II	3
HUM 2211 Historical Survey	3
SYC 2000 Sociology	3
MAC 1005 College Algebra	3
AMH 2010 U.S. His I OR 2020 U.S. His II	3
Total	**15**

Sophomore Year	**Sem. Hrs.**
Fall Semester	

LIT 2110 – Introduction to Literature I	3
EDF 1005 Intro to Teaching Profession	3
AMH 2091-Overview of Afr. Am History	3
GLY 2001-Earth and Space Science	3
EME 2040 Intro to Technology for Educators	3
Total	**15**

Sophomore Year	**Sem. Hrs.**
Spring Semester	
EEC 3005 -Foundations of Pre-K Primary Education	3
EEC 3215HB DAP: Social Studies for Young Children	3
EEC 3700 -Child Development	3
EDF 2085-Intro to Diversity for Educators	3
EEC 3524 Adm. & Man of ECE Programs	3
Total	**15**

Junior Year	**Sem. Hrs.**
Fall Semester	
EEC 4708 DAP: Language Arts	3
EEC 3213 Emergent Literacy	3
TSL 3080 Intro to ESOL: Theories & Practices	3
EEC 3731 Health, Nutrition & Safety	3
EEC 3402 Family Structure and Practices	3
Total	**15**

Junior Year	**Sem. Hrs.**
Spring Semester	
RED 3013-Teaching of Reading and Diagnosing Its Growth	3
EEX 3013 Special Needs in ECE	3
MAE 3310 Math in Elementary School	3
EEC 3404 Family & Community Partnerships in Education	3
SCE 3811 Science in Elem School	3
EEC 4303 DAP: Art, Drama, Music, Movement	3
Total	**18**

Senior Year	**Sem. Hrs.**
Fall Semester	
EEC 3613 Diagnosis, Assessment, & Evaluation	3
TSL 4345 Methods of Teaching ESOL	3
RED 4519 Rec/Diag. Growth in Reading	3
EEX 4018 Adaptations for Children w/Sp. Needs	3
EDE 3921 Professional Education Forum & Colloquium	0
EDE 4940 Field Clinical III: Professional Theory & Legal Aspects/Role of the Teacher	3
EEC 3604 Guiding and Managing Behavior	3
Total	**18**

Senior Year	**Sem. Hrs.**
Spring Semester	
EDE 4943 Student Teaching	12
Total	**120**

*(Effective fall 2015, students entering the program and thereafter, are required to complete 120 semester hours)

Course Descriptions

Courses: All courses will include integrated practicum/field experiences in diverse settings working with children birth through age eight.

EEC 3005 Foundations of Pre-K/Primary Education (3) This course places emphasizes on the historical and contemporary events, issues and trends that influenced the direction and nature of the care and education of young children. It develops a comparative perspective of philosophical, sociological, and psychological theories that form the foundation of early childhood education programs and practices. A variety of curriculums and programs will be presented. Ethics for professional organizations and standards required in the State of Florida will be included in presentations. Students will observe early childhood settings.

EEC 3213 Emergent Literacy (3) This course will provide Candidates with a knowledge base in regard to early childhood education. Included will be developmentally appropriate information on language, language arts, and emergent literacy development with children ages three through eight in various settings. These settings include developmental clinics, human service programs, pre-kindergarten classrooms, elementary grades, and childcare centers.

EEC 3700 Child Development (3) This course will provide students with the basic information on child development prenatally to adolescence. The course will provide knowledge in regard to typical and atypical development; present theoretical frameworks for the development of the child; and promote a respect and an appreciation for the role of the family, culture and community in the development of the child. Field observation required (10 hours).

EEC 3402 Family Structure and Practices (3) This course is designed to provide students with a knowledge base to understand and work effectively within a context of different family structures and needs. It emphasizes the importance of culture, value, and child rearing practices in early development.

EEC 3404 Family and Community Partnerships in Education (3) This course prepares pre-service teachers to work effectively with parents and communities in partnership for the education of young children. It analyzes Federal/State mandates and their implication for program development, rights and responsibilities, and services to families of young children. There are opportunities for field observation and participation in area programs and agencies serving children.

EEC 3604 Guiding and Managing Behavior in Early Childhood (3) Students will become familiar with causes of misbehavior, prevention techniques for dealing with challenging and inappropriate behaviors and maintaining positive learning environments ensuring appropriate behavior, and causes of these behaviors. Also, crisis intervention, management behavior, conflict resolution, and working with parents will be covered.

EEC 3731 Health, Nutrition, and Safety (3) This course will provide students with knowledge of appropriate health, safety and nutritional practices implemented in developmentally appropriate educational programs for children ages birth through eight years. Content includes hygiene, sanitation and nutrition. Health and safety regulations, legal issues, community resources, emergency procedures, including first aid and CPR, will be covered. Health, nutrition and safety needs of neglected, abused, chronically ill, culturally diverse, English Language Learners and exceptional children will be covered. Ten (10) hours of field experience is required.

EEC 3524 Administration/Management of Early Childhood

Education Programs (3) Study of principles and techniques for facilitating supervision with attention given to the organization, administration and operation of early childhood programs. Focus on professionalism and ethical and legal practices, group structure, inclusion, problems of communication, including English language Learners' goals, personnel, budgetary considerations and program evaluation. Prerequisites: Child Development I & II, Foundations and Issues of Earl Childhood Education. Field experience required.

EEX 4018 Adaptations for Children with Special Needs (3) Methods for adapting early childhood activities and environments that meet needs of children at risk for having disabilities; screening, selection and utilization of appropriate diagnostic and referral procedures for infants and toddlers. Prescriptive program planning for young children, special emphasis on working with families, inclusion, and multicultural processes. Required participation in selected activities and field experiences.

EEC 3613 Diagnosis, Assessment, and Evaluation of Children (3) This course is designed to provide a comprehensive knowledge base concerning developmentally appropriate assessment of young children. Areas of emphasis include formal and informal assessment methodology, alternative assessment, understanding of measurement terms and principles, interpretation evaluation results, development of classroom assessment tools; legal requirements for recordkeeping and use of technology and diversity considerations.

MAE 3310 Mathematics in Elementary School (3) Prereq: Three semesters of mathematics. Mathematics content and methodology related to currently recommended curricula, grades K-6.

SCE 3811 Science for the Elementary School (3) Prereq: Basic concepts of biological and physical science, with emphasis on application to teaching science.

EDE 3921 Professional Education Forum & Colloquium (0) This course exposes candidates to the support system outlined for their success. This course is also available for initial certification candidates at the master's level.

EEX 3013 Special Needs in Early Childhood Education (3) This course teaches a survey of special needs children during the early years, their families, and the agencies and systems available for provision of assistance. Emphasis to include biomedical, legal and diversity considerations. Required participation in selected field experiences.

EEC 4708 DAP: Language Arts (3) This course introduces students to the learning of language with emphasis on applying this information to the teaching of young children, particularly in emergent literacy, reading, literature, and language arts. Students will gain an understanding of the stages of language development, speaking, listening skills, and social-emotional skills necessary for communication of children ages three through eight. Students will learn to translate what is learned to planning and implementing effective language arts activities with young children and encourage family involvement at home and within the classroom. Students are expected to complete field experience in a public school classroom.

EEC 4303 Developmentally Appropriate Practices: Art, Drama, Music, Movement (3) This course introduces students to the teaching of art, drama, music, and movement to young children through curriculum integration. Students will gain an understanding of how the aesthetic development of children age three through eight can be enhanced through effective program planning, implementation and assessment in natural or formal settings. Students will also apply information learned through practical field experiences in settings with children ages three through eight.

EDE 4943 Student Teaching (12) Student teaching is a directed internship program designed to expose teacher education majors to a carefully planned program of professional growth.

EDE 4940 Field Clinical III: Professional Theory & Legal Aspects/Role of the Teacher (3) This course will acquaint pre-service teachers with the Florida Law and the six domains identified by the state of Florida as to the skills that comprise a successful classroom teacher. Students will acquire the knowledge to identify effective teacher behavior. Included will be critical theoretical frameworks, effective curricular/school safety programs, key classroom management techniques, professional ethics, and best practices as related to the domains listed in the Florida Performance Measurement System. Students will become familiar with the laws that affect them–laws established by state and federal statutes, constitutions, and court decisions.

RED 3013 Teaching of Reading and Diagnosing its Growth (3) Identification of components of the reading process. Principles, methods, approaches, issues, and trends in the teaching of reading in the elementary grades.

RED 4519 Recognizing and Diagnosing Growth in Reading (3) Prereq: RED 3013. Identification of the components of the reading process and evaluation of those components. Diagnostic and corrective reading principles and procedures that enable prospective teachers of reading to provide instructional materials and experiences for students. Field experience included.

EEC 3215 DAP: Social Studies for Young Children (3) The course will provide pre-service teachers with information needed to develop young children who have knowledge, skills and dispositions that lead to an understanding of the world in which they live and their relationship to that world. The integrative approach utilized promotes the development of knowledge and skills needed to promote an understanding of time, continuity, culture, change; government and citizenship; economics. Students will also apply information learned through practical field experiences in settings which serve children ages 3-8, including English Language Learners.

TSL 3080 Introduction to ESOL Theories and Practices (3) This course introduces students to the underlying theories and principles that shape the field of ESOL. It includes the legal issues and historical foundations for serving the ELL theories of first and second language acquisition/development, principles of language assessment, and issues of language interferences. Additionally, it lends attention to the subsystems of language, role of language transfer, Basic Interpersonal Communication Skills (BICS), Cognitive Academic Language Proficiency (CALP), language pragmatics, and cultural issues in communication.

TSL 4345: Methods of Teaching ESOL (3) This course focuses on major methodologies and strategies for teaching ELL. It provides specific instructional techniques and practices for the teaching of reading, language arts, and content-specific subject matter. It provides guidelines for unit and lesson planning, classroom management, multilevel learning activities, and related instructional competencies. It also provides a field clinical experience in classroom settings with the ELL. Prerequisite: TSL 3080.

Department of Elementary Education Graduate Program

Faculty

Associate Professors: Ansley, Thyria; Bauman, Gail; Fontaine, Nancy; Thomas, Patty Ball

Admission Requirements

An applicant:

1. Must hold a teacher certificate; This program does not lead to initial certification.
2. Must have earned a bachelor's degree from an accredited institution.
3. Must meet all of the requirements of both the University and the College of Education.
4. Must have earned a 3.0 GPA during the last 60 semester credit hours in the undergraduate program and have a Graduate Record Examination (GRE) score on record. (Submit GRE scores taken within the last five (5) years).
5. Must take the Graduate Record Examination (GRE) regardless of GPA (Prior to admission).

Fall Semester (9 semester hours)	**Sem. Hrs.**
EEC 5705 Advanced Child Development	3
EDF 5481 Introduction Educational Research	3
EDF 5443E Assessment for Student Learning	3

Spring Semester (9 semester hours)	
EME 5603E Instructional Design	3
EDG 6250 Curriculum Development: Theory & Practice	3
EDF XXXX Learning Principles Applied to Instruction and Assessment (pre-requisite: EDF 5443E, Assessment for Student Learning)	3

Summer Semester (9 semester hours)	
EDE 5815 Emergent Trends in Teaching the Basics	3
EDE 5395 Problems in Instruction in the Elementary School	3
EDE 5930 Seminar in Elementary Education	3

Fall Semester (9 semester hours)	
RED 5116 Foundations of Reading Instruction	3
RED 5549 Foundations of Assessment	3
RED 5546 Reading Instruction for Students with Disabilities	3

Graduate Course Descriptions

EEC 5705 Advanced Child Development (3) The course will provide students with a knowledge base of the major theories of child development. It emphasizes the importance of culture, values and child rearing practices throughout early middle childhood and young adolescence. The course addresses physical, cognitive, social, emotional and language development. Salient topics include: the nature of development; prenatal development; heredity; research methods in child development; parenthood; nutrition; sensory and perceptual development; skill development; intelligence; attachment; illness and health; disabilities, peer relations; family relations; puberty; and childhood and adolescent problems

EDF 5481 Introduction to Educational Research (3) Methodology of research in behavioral sciences, documentation, measurement, data analysis, and reporting. Students evaluate existing research and design new studies.

EDF 5443E Assessment for Student Learning (3) Offers participants operational definitions and experiences in documentation and assessment in Pre-K – 20 classrooms. Students will combine readings, analysis of experiences in learning environments and field work to set professional goals.

EDF XXXX Learning Principles Applied to Instruction and Assessment
(pre-requisite: EDF 5443E, Assessment for Student Learning)
Students will examine prominent developmental and learning theories in depth and their implications for instruction and assessment.

EDG 6250 Curriculum Development: Theory & Practice (3) This course is designed to provide an overview of curriculum and development issues. Emphasis will be placed on the relationship between curriculum theories and instructional practice, interrelationships of many components of curriculum design and as a basis for decision making in providing leadership for constructive instructional programs. Students will demonstrate different applications of curriculum principles to the design and development of educational programs including technology, assessment, and organization of curriculum.

EDE 5395 Problems in Instruction in the Elementary School (3) Focuses on selected persistence problems relating to instruction in the elementary school. Emphasis includes discipline, promotion, grouping, schooling and subject matter, current movements, instructional methodology, evaluating the effectiveness of the school and culturally diverse students.

EDE 5815 Emergent Trends in Teaching the Basics (3) Identifies teaching modes or strategies that will help inservice teachers to improve their teaching skills in the basics. Emphasis will be placed on the teacher's competencies as an indicator of pupils' mastery of the "three Rs"-reading, writing, and arithmetic.

EDE 5930 Seminar in Elementary Education (3) Forum for discussion and exploration of the interrelationships among various theories, research projects, educational viewpoints, and even fads as reported in the literature. Practical applications are emphasized, and teaching experience is required.

EME 5603E Instructional Design (pre-requisite: EDG 6250, Curriculum Development: Theory & Practice) Instructional design models/theories and their systematic application to instructional goals.

RED 5116 Foundations of Reading Instruction (3) This course synchronizes and scaffolds each of the major components of the reading process. It focuses on the psychological, physiological and sociological factors affecting the developmental reading process and identification of the components of reading and familiarization with the trends and issues in reading education. Upon completion of this course, students will understand the principles of scientifically based reading research as the foundation of comprehensive instruction.

ED 5546 Reading Instruction for Students with Disabilities (3) This course addresses the fourth reading competency: Prescribing, differentiating instruction, and utilizing appropriate strategies and materials based upon scientifically based reading research in order

to address the prevention, identification, and remediation of reading difficulties; and the application of effective, research-based instructional methodology to prevent reading difficulties and to promote acceleration of reading progress for struggling students.
5549 Foundations of Assessment (3) This course (competency 3) addresses foundations of assessment and understanding the role of assessments in guiding reading instruction and instructional decision making. the student will learn measurement concepts, testing formats, how to select and administer screening and diagnostic tests of reading, written and oral language; develop an understanding of interpretive issues and accommodations for assessing students who are LEP and those with disabilities; and conduct and evaluate students; response to interventions.

Department of Educational Leadership and Counseling

The Department of Educational Leadership and Counseling provides experiences for a variety of professional careers in educational and non-educational institutions and agencies. Candidates acquire skills and competencies in the areas of counselor education, and educational leadership (administration and supervision).

The program in counseling offers two tracks: school counselor and mental health. The program in educational leadership offers three graduate degrees. The counselor education program offers the master of education degree (M.Ed.), and the master of science degree (M.S.), which requires a thesis. The program in educational leadership offers three graduate degrees, the master of education degree (M. Ed.), the master of science degree (M.S.), which requires a thesis, and the doctor of philosophy (Ph.D.), which requires a dissertation.

Through these degree programs, students prepare for leadership positions in schools (Pre-K-12) and institutions of higher education, for educational positions in government and other educational entities, for engagement in counseling/mental health and student personnel work. The programs of study to be pursued at the graduate level are developed on the basis of a graduate student's interest, background, credentials, and career goals. Specific programs may vary within and between majors and allow the student to concentrate on various areas of professional competence.

Every student in all programs in this department is required to see his/her faculty advisor at the beginning of each semester and at the end of each semester prior to registering for the next semester courses, and they are to dress as professional educators and to attend all required meetings.

Faculty
Professors: Dozier-Henry, Oare'; Hope, Warren; Davenport, Elizabeth; Lutfi, Ghazwan; Green-Powell, Patricia
Assistant Professors: Henderson, Lavetta; Kambui, Hassiem; Moore, Sheila; Rowley, Alishea

The Department of Educational Leadership and Counseling
Master of Education/Master of Science/Doctor of Philosophy

The program in educational leadership offers a planned sequence of educational experiences for (a) an individual seeking a master's degree in educational leadership and (b) an individual who possesses a master's degree and wishes to earn level I certification in educational leadership. Both program options prepare graduates for entry level (level 1 certification) administrative positions in Florida school systems and other related fields.

The educational leadership program offers graduate study grounded in the historical stream of research that informs educational practice. From this knowledge base, the course of study includes experiences to prepare individuals to assume leadership roles in educational institutions and other organizations. The program is comprehensive and a goal is to develop the transformative teachers and leaders who can assume leadership roles in educational institutions and other organizations. Major emphasis in the program is on urban and rural education through the provision of research knowledge as well as field and internship experiences. Emphasis is placed upon increased understanding of the school leadership and management functions. Course work and engagements provide a unique setting for preparation for multicultural leadership.

The master of education degree sequence in educational leadership requires a minimum of thirty-nine (39) semester hours of graduate coursework in areas required by the state of Florida for certification in school administration. The master of science degree requires a written thesis in in addition to other required courses. Candidates enroll in EDA 5937 Master's Thesis (3-6 additional credit hours).

The counselor education program within the Department of Educational Leadership and Counseling offers a graduate degree which emphasizes both didactic and affective experiences as necessary dimensions in the growth and development of professional learners. The course of studies includes differentiated patterns of preparation for school counselors, student services personnel for post-secondary education institutions, and counselors for various mental health agencies. Special effort is made to sensitize and provide the candidates with experiences and skills to be relevant in working with individuals, groups, families, and populations representing varied backgrounds and motivations. Multi-ethnic and multi-cultural effectiveness, critical thinking, and writing constitute a pervasive focus in all program studies.

Certification
Students with a master's degree who seek certification in counseling must apply for admission to the counselor education program. Courses are offered to meet certification requirements.

Students entering the counselor education program without an undergraduate degree in education must complete the following courses in addition to the required courses in the program:
· 6 semester hours in general methods
· 6 semester hours of education foundations
· 6 semester hours of internship

Admission Requirements
An application must:

1. Meet all university admissions requirements: 3.0 G.P.A. in the last 60 hours of undergraduate work and GRE score.
2. Submit a GRE score, within the last five years.
3. Pass all requirements of the State Mandated General Knowl-

edge Examination of the Florida Teacher Certification Examination.
4. Declare in writing his/her intention to major in counselor education.
5. Present three (3) letters of recommendation from qualified professional helpers. These letters should address the applicant's personal, professional qualities, and disposition.
6. Indicate in writing his/her understanding of the requirements for certification in the state of Florida since the applicant plans to work as a counselor in the school system.
7. Present a copy of a valid Florida teaching certificate and passing scores on the FTCE (Florida Teacher Certification Examination) General Knowledge Tests.
8. A current resume.
9. School guidance track requires a criminal background check.

General Information

1. Applications for admissions to graduate school shall be submitted directly to the School of Graduate Studies and Research (Room 469, Tucker Hall).
2. All other materials should be sent to the department.
3. All Classes are held during the evening hours (Monday– Friday)
4. Students will be assigned to a faculty advisor to assist them.
5. Applicants with a master's degree seeking certification should have their transcripts reviewed by an advisor prior to registering for any classes.
6.Upon application, candidates must present evidence of health and liability insurance and a criminal background check.

Please submit the Florida A&M University application and transcripts of all undergraduate and graduate work to the following address:

School of Graduate Studies and Research
Florida A&M University
469 Tucker Hall
Tallahassee, FL 32307

Please submit all of the above admission materials, except items 4 above, to the following address:

Department of Educational Leadership and Counseling
Florida A&M University
College of Education
Gore Education Complex, Bldg. C
501 Orr Drive, Room 124
Tallahassee, FL 32307

Counselor Education:

Core Courses (9 semester hours required)

EDF 5481 Introduction to Educational Research	3
MHS 5005 Introduction to Counseling Profession	3
MHS 5480 Human Development and Learning Theories in Counseling	3

Specialization Courses (27-30 semester hrs required)

MHS 5340 Career Development	3
MHS 5400 Theories of Counseling	3
MHS 5500 Group Theories in Counseling	3
MHS 5780 Legal/Ethical Issues in Counseling	3
MHS 6050 Personality Theory	3
MHS 6220 Individual Psycho-Educational Testing	3
MHS 6420 Counseling Minority Populations	3
MHS 6430 Family Counseling (optional)	3
MHS 6600 Consultation Skills	3
MHS 6800 Practicum	3

K-12 Counseling Track (6 semester hours required)

TSL 5700 ESOL Issues and Strategies for Other Professionals	3
RED 5336 Reading in the Content Area	3

Professional Clinical Experience (3-6 semester hours of school counseling)

SDS 6820 Internship in School Counseling	3
SDS 6830 Internship in School Counseling	3

Thesis Track (optional) or Electives (1-6 semester hours)

SDS 6070 Thesis or 2 electives

Professional Clinical Experiences

Practicum and Internship are independent learning activities that take place in authentic settings in which candidates must apply, reflect on, and refine knowledge and skills acquired in the program. The internship experience gives candidates full control of the operational setting where they are placed (e.g., student interns being observed and monitored by the site supervisor and the university supervisor).

Students entering the counselor education program without an undergraduate degree in Education must complete the following in addition to the required courses:
6 credit hours of general methods
6 credit hours of education foundations
6 credit hours of internship

COURSE DESCRIPTIONS - Counselor Education

MHS 5005 INTRODUCTION TO COUNSELING PROFESSION (3) Introduction to Guidance Systems is designed to introduce students to the counseling profession. Broad general discussions will take place rather than the in – depth treatment of particular areas. The principles and practices in this course will be guided by professional organizations such as the Florida Counseling Association (FCA), the American Counseling Association (ACA), the Council for the Accreditation of Counseling and Related Educational Programs (CACREP), the Florida Department of Education (FDOE), and the National Council for Accreditation of Teacher Education (NCATE).
MHS 5340 CAREER DEVELOPMENT (3) This course is designed to study the nature and significance of career choice and development, basic current and new theories, and models of the career decision making process. Students will be able to relate career theories and research to the practice of career counseling while working with children, adolescents, and adults.

MHS 5400 THEORIES AND TECHNIQUES OF COUNSELING (3) This course is designed to study the major theories and techniques of counseling. Psychoanalytic, behavioral/cognitive, existential/humanistic, multicultural, family, feminist, postmodern, and integrative theories will be discussed. In particular, special emphasis on analyzing concepts, practices, applications, and issues in the helping relationships will be covered.

MHS 5480 HUMAN DEVELOPMENT AND LEARNING THEORIES IN COUNSELING (3) This course is an examination of the evolution of three major classes of theories, namely 1) Theories of Learning, 2) Theories of Life Span Development, and 3) Theories of Personalities. Numerous explanations of learning have emerged since 1980; some have come and gone while others have stood the test of time. This course also focuses on three perspectives of learning: Behaviorism, Cognitive Psychology, and Social Learning Theory as well as principles that have relevance for counselors and other helping professionals. Looking at the big picture, six general principles of learning will also be discussed. Life Span Development will be discussed, beginning with the Prenatal Period and extending into Old Age. In all, ten periods: Prenatal, Infancy, Toddlerhood, Early Childhood, Middle Childhood, Adolescence, Young Adulthood, Middle Adulthood, Late Adulthood, and Old Age will receive extensive treatment coupled with their implications for counseling. Develops, learns, and functions through the life span. The third focus of the course, Theories of Personality Development, particularly the major theories, will be discussed in depth and related to professional counseling practices. Upon completion of the course, students will have a better understanding of how man.

MHS 5500 GROUP THEORIES AND PRACTICE IN COUNSELING (3) This course is designed to help graduate students study the basic issues and key theoretical concepts of the group process and shows how group leaders can apply these concepts in working with a variety of groups. In particular, students will become familiar with the various stages of group development related to children, adolescents, and adults.

MHS 5780 LEGAL AND ETHICAL ISSUES IN COUNSELING (3) Legal and Ethical Issues in the Counseling Profession acknowledge that school counselors function in a complex legal environment. In recent decades, a variety of laws and regulations apply to them in their work. Some of these laws emanate from our national constitution and federal laws, many from state laws and constitutions, and some from local ordinances and school board regulations; further legal constraints derive from administrative rules and regulations and a myriad of judicial decisions. Counselors who work with students cannot hope to be intimately familiar with all laws relating to students. In addition to this obligation, counselors guiding legal principles controlling their work and the processes whereby our legal institutions address and resolve conflicts, and know when to seek advice from lawyers.

MHS 6050 PERSONALITY THEORIES (3) Personality and counseling practices will provide students with a broad framework from which to examine and evaluate theories of personality in terms of their scientific and practical value in explaining and predicting human behavior. Students will be given the principles of developing psychological constructs, and a survey of classical and contemporary theories of personality. This course is designed to enhance the professional counselor's ability to recognize the existence of differences among people and develop skills needed to become effective helpers. Lastly, students will exit this course with a better understanding of their personalities.

MHS 6220 INDIVIDUAL PSYCHO-EDUCATIONAL TESTING (3) This course is designed to train graduate students in the professional use of various mental tests and related psychological assessments. There is training in test administration, scoring, and interpretation. This course meets certification requirements (assessment area) for school counseling, school psychology, all exceptionalities, and reading.

MHS 6420 COUNSELING MINORITY POPULATIONS (3) This course focuses on clients of various cultural backgrounds that bring to the counseling relationship problems related to their culture, lifespan stage or the frustrations and challenges often facing minority groups struggling to cope in U.S. society. Counselors will develop expertise and sensitivity in working with various cultural groups. Also, multicultural and pluralistic trends including characteristics and concerns of diverse groups based on such factors as age, race, religious preference, physical disability, sexual orientation, ethnicity, cultural family patterns, gender, socioeconomic status, and intellectual ability are discussed. Candidates will become exemplary professionals in the areas of multiculturalism, technology, values, problem solving, professionalism, and urban education. See the Conceptual Framework on the next page.

MHS 6430 FAMILY COUNSELING (3) This course is designed to help professionals acquire knowledge and basic skills in marriage and family therapy. In particular, the course focuses on the family as a system; it will be studied from psychodynamic, cognitive/behavioral, humanistic/existential and transpersonal perspectives. Upon completion of this course, students will have developed the professional skills inherent in an effective model to use in counseling families. In addition, students will become exemplary professionals in the areas of multiculturalism, technology, values, problem solving, professionalism, and urban education.

MHS 6600 CONSULTATION SKILLS (3) This course provides an overview of what students and practicing consultants in the human services professions need to know about consultation practice and theory. It presents a generic model for application, surveys the various approaches to consultation, discusses the organizational context of consultation, and reviews the many ethical and professional issues consultants face.

MHS 6800 PRACTICUM IN COUNSELING (3) This course is clearly focused on teaching students how to help others with "real life problems." Students are placed in realistic settings where they actually learn how to do something of concrete value with others. The practicum provides an opportunity for students to implement and practice skills learned during academic coursework, while obtaining close supervision on and off site. Experiential activities are required of each student, including role-playing of counseling theories and techniques. All students must complete videotapes of the helping model and must demonstrate knowledge of an application of specific counseling theories including rationale, basic assumptions, procedures used, and counselor's role. An electronic portfolio must be developed that documents the professional growth and development of the student and all documentation must be tied directly to the Accomplished Professional Competencies.

Practicum Requirements: A minimum of 100 hours is required and placements are made through the University Supervisor and Graduate Advisor. Students are expected to observe the schedule of the practicum site, including their vacation and break schedules.

SDS 6820 & 6830 SUPERVISED INTERNSHIP: SCHOOL

COUNSELING (3) This supervised internship in school guidance provides a realistic setting for the demonstration and observation of those knowledge, skills, and abilities that are inherent in the training and eventual performance of a professional school counselor in public or private settings. It is the integration of practical and research knowledge of practicing students that allows them to operationalize many of the theories they have studied. It is through this type of experience that the student can understand the implications of training as it relates to other individuals, especially within the school environment.

Internship Requirements: A minimum of 600 hours are required. Placements are made through the university internship supervisor. At times, a student's work setting may be an appropriate work placement for the guidance internship. The university internship supervisor will make contact with various schools to ensure a proper and diverse placement.

MHS 6820 & 6830 SUPERVISED INTERNSHIP: CLINICAL MENTAL HEALTH COUNSELING (3) This supervised internship in an agency setting guidance provides a realistic setting for the demonstration and observation of those knowledge, skills, and abilities that are inherent in the training and eventual performance of a professional clinical mental counselor in the diverse community agency settings. It is the integration of practical and research knowledge of practicing students that allows them to operationalize many of the theories they have studied. It is through this type of experience that the student can understand the implications of training as it relates to other individuals.

Internship Requirements: A minimum of 900 hours is required for those students from a non- CACREP program. Placements are made through the clinical mental health counselor director. At times, a student's work setting may be an appropriate work placement for the guidance internship.

TSL 5700 ESOL: ISSUES AND STRATEGIES FOR OTHER PROFESSIONALS (3) This course focuses on the major issues in administration of programs designed to serve English language learners in public schools. Specific legal, sociological, psychological, and philosophical issues related to program development, administration and maintenance to serve English learners is addressed. Emphasis on the roles of psychologist, guidance counselors, social workers, and administrators is addressed via content.

RED 5336 READING IN THE CONTENT AREA (3) This course is designated to acquaint students with the fundamental concepts and knowledge for teaching reading in the content areas. The concepts in this course will develop awareness, understanding and appreciation of literacy practices that foster reading across the curriculum. Students will gain knowledge of teaching reading by integrating curriculum across all subjects including social studies, science, and math.

MHS 5620 ORGANIZATIONS AND ADMINISTRATION OF HUMAN SERVICES (3) This course will provide basic knowledge, theory and skills in the administrative aspects of the human service delivery system. Issues of supervision, management and development of paid and volunteer staff will be addressed. Fiscal administration, including the creation of budgets, grant and contract negotiations and implementation of fiscal controls will be discussed. The concepts of coalition building, legislative advocacy and community organizing will also be introduced. The relationship between administrator and board of directors in a non-profit setting will also be reviewed.

MHS 5428 COUNSELING CLIENTS W/SPECIAL NEEDS (3) This course focuses on clients of various cultural backgrounds that bring to the counseling relationship problems related to their culture, lifespan stage or the frustrations and challenges often facing minority groups struggling to cope in U.S. society. Counselors will develop expertise and sensitivity in working with various cultural groups. Also, multicultural and pluralistic trends including characteristics and concerns of diverse groups based on such factors as age, race, religious preference, physical disability, sexual orientation, ethnicity, cultural family patterns, gender, socioeconomic states, and intellectual ability are discussed.

MHS 6470 HUMAN SEXUALITY (3) This course focuses on research and theories of human sexual development (including research and theories of normal and abnormal sexual functioning) and general principles and practices for the treatment of sexual dysfunctions and the promotion of optimal sexual health. In addition, students will become exemplary professionals in the areas of multiculturalism, technology, values, problem solving, professionalism, and urban education.

MHS 6070 PSYCHOPATHOLOGY IN MENTAL HEALTH (3) This course focuses on increased familiarity with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and will develop competency in diagnostic assessment and therapeutic approaches to make informed psychological diagnosis given specific interview, observational and test data. Students will apply this knowledge through role-play, assessment, treatment planning, watching videos, small and large group discussion, lectures and course readings.

MHS 6470 SUBSTANCE ABUSE COUNSELING (3) This course serves as an introduction to the field of substance abuse counseling. The primary goals for this course are to deepen students understanding of substance use disorders, to facilitate the development of addiction counseling competencies that are associated with positive treatment outcomes, and to increase the student's level of confidence relative to providing substance abuse evaluation, education, and treatment services. Emphasis will be placed on developing and practicing substance abuse counseling skills.

Mental Health Counseling (Non-Teaching)

Mental Health

An option for licensure in mental health counseling is provided for students who plan to work specifically in an agency and private setting. Students follow the core program, but they must take the additional course in the curriculum and must adhere to any changes instituted by the state of Florida's licensing board for mental health counselors.

Certification

Students with a master's degree who seek certification in mental health counseling must apply for admission. Courses are offered to meet certification requirements in Florida.

Students entering without an undergraduate degree in Education must complete the following courses in addition to the required courses in the Program:

- 6 semester hours in general methods
- 6 semester hours of Education Foundations
- 6 semester hours of Internship

Admission Requirements
An applicant must:

Meet all university admissions requirements: i.e. "B" (3.0) average in the last sixty (60) semester hours of undergraduate work and a score on the GRE .

1. Meet all criteria for undergraduate admission to teacher education.
2. Submit an application and copies of all transcripts from post –secondary institutions.
3. Declare in writing intention to major in mental health counseling.
4. Submit GRE scores taken within the last five (5) years.
5. Present three (3) letters of recommendation, one of which should be from a qualified professional. These letters should address the applicant's personal and professional qualities.
6. Meet the requirements of the State Mandated College Level Academic Skills Program the Pass the General Knowledge Examination (preferred).
7. Declare in writing his/her intention to major in counselor education.

Mental Health Counselor Track:

Core Courses (9 semester hours required)	
EDF 5481 Introduction to Educational Research	3
MHS 5005 Introduction to Counseling Profession	3
MHS 5480 Human Development and Learning Theories in Counseling	3

Specialization Courses (30-33 hours required)	
MHS 5340 Career Development	3
MHS 5400 Theories of Counseling	3
MHS 5500 Group Theories in Counseling	3
MHS 5780 Legal/Ethical Issues in Counseling	3
MHS 6050 Personality Theory	3
MHS 6220 Individual Psycho-Educational Testing	3
MHS 6420 Counseling Minority Populations	3
MHS 6430 Family Counseling (optional)	3
MHS 6600 Consultation Skills	3
MHS 6800 Practicum	3
MHS 6450 Substance Abuse Counseling	3

Licensure Courses-Mental Health Counseling Track (12 semester hours required)	
MHS 5620 Organization and Administration of Human Services	3
MHS 5428 Counseling Clients with Special Needs	3
MHS 6070 Psychopathology in Mental Health	3
MHS 6470 Human Sexuality	3

Professional Clinical Experience (3-6 semester hours of school counseling)	
SDS 6830 Internship in Mental Health	3
SDS 6831 Internship in Mental Health	3

Thesis Track (optional) or Electives (1-6 semester hours)
SDS 6070 Thesis or 2 electives

Masters of Education and Master of Science**
Educational Leadership

Admissions Requirements

An applicant must:

1. Meet all university admission requirements: i.e., "B" (3.0) average in the last sixty (60) semester hours or 90 quarter hours of undergraduate work. Submit GRE scores. Test results must be recent (within the last five years). A baccalaureate degree from an accredited institution of higher education.
2. Present three (3) letters of recommendation from qualified professions. The letters should address the applicant's personal and professional qualities.
3. Submit current resume.
4. Submit current teaching and other professional certificates.
5. Meet the application submission deadline.

Applicants must submit a FAMU application, official copies of undergraduate and graduate transcripts and an official copy or Graduate Record Examination results taken within the last five years to the following address:

School of Graduate Studies and Research
Florida A&M University
469 Tucker Hall
Tallahassee, FL 32307

Applicants must submit all of the other admissions requirements identified above to:

The Department of Educational Leadership and Counseling
Florida A&M University
College of Education
Gore, C Education Complex, Bldg. C, Room 124
501 Orr Drive
Tallahassee, FL 32307

	Sem. Hrs.
Foundations of Education	
EDF 5481 Introduction to Educational Research	3
Educational Leadership Core	
EDA 5051 Overview of Educational Administration	3
EDA 5193 Educational Leadership: Instruction	3
EDA 5195 Educational Leadership II	3
EDA 5201 School Business Management	3
EDA 5217 Communication Techniques	3
EDA 5222 Personnel Administration in Education	3
EDA 5232 Legal Aspects of Education	3
EDA 5275 Application of Technology in Educational Leadership	3
EDA 5510 Principles of Elementary School Administration **or**	3
EDA 5530 Principles of Secondary School Administration	3

TSL 5700 ESOL Issues and Strategies for other Professional Educators	3
EDA 5940 Internship in Educational Administration	3
EDG 6250 Curriculum Design and Development	
Total	**36**

For the M.S. degree, students must enroll in the master's thesis course* 3
EDA 5973 Thesis in Educational Leadership 3-6
Note: TSL 5700 - Issues and Strategies for Other Professionals is required of all master's students.

Areas of Emphasis 3

Note: All courses in the educational leadership core are required courses.
** Requires completion of a minimum of forty-two (42) semester hours of prescribed course work (for the masters of science).
*** Required near completion of program.
****Course Requirements are subject to change in accordance with state and federal mandates.

Candidates must pass the Florida Educational Leadership Examination (FELE), the Educational Leadership program comprehensive examination, have at least a 3.0 Cumulative Grade Point Average (GPA), and have no grades lower that a "B". Candidates must submit to the Department chair and Program Coordinator the URL for the TaskStream folio, which contains three graded 3 artifacts for each course prior to graduation from the program.

Add-on Educational Leadership Certification Program**

Admission Requirements
(For students with master's degrees seeking Level I certification in Educational Leadership.)

Applicants must:
1. Complete application for admission to graduate program.
2. Hold a master's degree or higher from an accredited institution of higher education.
3. Present three (3) letters of recommendation that address the applicant's personal and professional qualities.
4. Submit GRE scores (verbal and quantitative). Test results must be recent (within the last five years).
5. Submit current teaching and other professional certificates.
6.nMeet the application submission deadline.

Completion Requirements
A minimum program of twenty-one (24)**** semester hours of educational leadership courses selected from the following. Other courses may be required.

	Sem. Hrs.
EDA 5051 Overview of Educational Administration	3
EDA 5201 School Business Management	3
EDA 5222 School Personnel Administration in Education	3
EDA 5232 Legal Aspects of Education	3
EDA 5510 Principles of Elementary School Administration -OR-	
EDA 5530 Principles of Secondary School Administration	3
EDA 5217 Communication Techniques	3
EDA 5275 Application of Technology in Educational Leadership	3
TSL 5700 ESOL Issues and Strategies for Other Professional Educators	3

Note: Candidates who did not graduate from a teacher program must have six (6) additional semester hours of curriculum and six (6) additional semester hours of foundation courses. This means that the total number of hours for completion may vary between 24-36 hours.

** Course requirements are subject to change in accordance with new directions, state and federal mandates.

*** Candidates must have a minimum of 3.0 cumulative grade point average (CGPA) before they may graduate from the program, and must submit three artifacts for each course in an e-folio in TaskStream.

Graduation Requirements for Master's Degree
A minimum program of thirty-nine (39) semester hours in the following areas:
· 3 hours of foundations of education
· 36 hours of educational leadership core

Additionally, students must:
- Have a cumulative 3.0 grade point average

- Pass the master's comprehensive examination;
- Pass the Florida Educational Leadership Examination (FELE);
- Have no C or lower grades;
- Have repeated and passed a maximum of 2 classes (This does not apply to classes with grades of A minimum 3.0 cumulative grade point average in all course work . No grade of "C" or below will be accepted toward credit in the program and only two classes in which a grade "C" or below is made may be repeated; and or B); and
- An e-folio of all required work in TaskStream.

Course Descriptions

EDA 5051 Overview of Educational Administration (3) Essential understanding of administration in America's public education system. Concepts, processes, theories, and roles explored.
EDA 5193 Educational Leadership: Instruction (3) This course provides candidates with a leadership and instructional knowledge base to promote a positive learning culture, conceptualize and organize an effective instructional program, and collaborate with instructional personnel to identify strategies to improve student academic achievement. Content also provides candidates with expertise in utilizing instructional supervision theories and models related to teaching and learning.
EDA 5195 Educational Leadership II (3) This course is designed to build upon the candidate's Educational Leadership knowledge base by providing current information related to curriculum innovations in schools, collaborating with community stakeholders, providing leadership and managing the learning environment.

Candidates will interact with school leaders and community stakeholders in order to acquire real-life experiences. Course content will focus on (a) critical thinking, (b) decision making, and (c) the professional role of school leader.

EDA 5201 School Business Management (3) Essential knowledge and skills related to principles of finance and business management, budgetary practices, office management, and financial accounting and reporting.

EDA 5217 Communication Techniques (3) The course focuses on communication as a critical leadership skill. Effective written and oral communication skills are part of organization dynamics. Candidates engagement assists in the development of effective communication.

EDA 5222 Personnel Administration in Education (3) An in-depth examination of the major components of Human Resources Administration and their relationship to effective leadership and schools. Particular attention devoted to strategic planning, recruitment, selection, induction, supervision, staff development, collective bargaining, technology, and legal issues in personnel administration.

EDA 5232 Legal Aspects of Education (3) Issues and problems concerning law and public education; developing competence in legal research; working with questions of fact, value, and policy.

EDA 5275 Application of Technology in Educational Leadership (3) This course examines and provides experiences for candidates in acquiring expertise to use various technologies in the administrative and instructional realms of schooling. Course content is designed to assist candidates to select, evaluate, and apply appropriate technological applications in the school environment and in their administrative practice. Candidates are required to analyze educational environments to determine appropriate technology needs. Other learning tasks include developing skills in managing information, effective communications, instructional leadership, educational research, budgeting and student/personnel recordkeeping.

EDA 5510 Principles of Elementary School Administration (3) Competencies required for school-based management and leadership of programs for grades Pre K-6. OR

EDA 5530 Principles of Secondary School Administration (3) Skills needed for middle school and high school based management leadership for grades 5-12.

TSL 5700 Issues and Strategies for Other Professional Educators (3) This course focuses on major issues in the administration of programs designed to serve English Language Learners in public schools grades PK-12. Specific legal, sociological, psychological, and philosophical issues concerning program development , administration, and maintenance to serve English Language Learners are specifically addressed. Emphasis is placed on the roles and responsibilities of school administrators, school psychologists, guidance counselors, and social workers regarding issues of language development and learning, curriculum and instructional management, testing and assessment, cross-cultural communication and sensitivity, and school-community awareness. Candidates will be involved in field experiences as a means of applying concepts and research to real-life issues. ESOL Standards for Administrators, Language Arts through ESOL, Florida Management and Leadership Licensure competencies for Florida Educational Leadership Programs, and appropriate NCATE Guidelines serve as a basis for this course.

EDA 5905 Directed Individual Study; Educational Leadership (Variable 1-6) Permission of instructor only. Advanced students who demonstrate sufficient interest and skills may be approved to take individual study in the area of educational leadership of no more than 6 semester hours in their programs.

EDA 5940 Internship in Educational Administration (3) Prereq: Permission of the instructor and near end of program. Available through participating systems and supervised by university personnel as student administers some aspects of an educational program and issues in leadership for public and non-public schools. Periodic reporting, classes, action research, assessment, and on-campus conferences required and issues in leadership for public and non-public schools. Periodic reporting, classes, action research, assessment, and on-campus conferences required and issues in leadership for public and non-public schools discussed and managed.

EDG 6250 Curriculum Design and Development (3) This course is designed to provide an overview of curriculum and development issues. Emphasis will be placed on theories, research and instructional practices and their interrelatedness as a basis for decision-making in providing leadership for constructing and providing educational programs using technology, assessment and management.

EDA 5973 Thesis in Educational Leadership (3-6) Prereq: Permission of Master's degree Coordinator or Department Chair. This course is designed to provide candidates the opportunity to perform all skills required for a thesis and to pass the thesis to get the M.S. degree if all other requirements are met.

Educational Leadership
Doctor of Philosophy

The Ph.D. program in educational leadership is designed as a non-traditional program to insure the academic success of qualified individuals who are interested in serving in rural and urban educational environments. The department admits a cohort of candidates in the fall semester (August) of each year. Candidates complete the course work in this full-time program in two years (6 semesters). Candidacy is attained upon passing the comprehensive examination during semester 7. Upon passing the comprehensive examination, candidates may register for dissertation hours. Because of the developmental focus of this program, transfer credits are not accepted.

This Ph.D. program is based upon the cohort model with a transformational leader philosophical foundation. Inter-and intra-personal developments are program foci, and immersion in cultural and diversity phenomena is emphasized. Attention to the development of the exemplary professional and scholar are important as evidenced in the emphasis placed upon theoretical content and research methods.

The Ph.D. program in educational leadership is an intensive learning experience. The curriculum is organized around the premise that effective leadership requires an understanding of multiple human contexts and the ability to use technical competence and administrative skills, combined with personal understanding and commitment.

Graduates of this doctoral program pursue leadership career opportunities in educational settings and organizations; PK-20 insti-

tutions and organizations involved with local, state, national and international education agendas. The program provides professionals with theoretical bases and practical understandings that enable them to be transformational leaders, effective change agents and successful program managers, particularly in schools, higher education and agencies that serve the needs of minority and at-risk populations.

The percentage of graduates of this program substantially exceeds the national average for graduates of doctoral programs in the United States of America. The rigor and design of the program coupled with faculty commitment and candidates' behavior contribute to this graduation rate.

Admissions

Applications for admission into the Ph.D. program in Educational Leadership should be submitted by February 15 of each year to:

The Department of Educational Leadership and Counseling
Florida A&M University
College of Education
Gore, C Education Complex, Bldg. C, Room 124
501 Orr Drive
Tallahassee, FL 32307

Applicants must have completed a master's degree in an educationally related area from an accredited college or university in order to be considered for admission to the Ph.D. program in Educational Leadership. Admission decisions will be made spring semester of each academic year with written notification to accepted applicants in that term.

Submission of a completed application does not guarantee admission. Applications are evaluated based upon a calculated formula. For applicants who wish to apply for fellowships or assistantships, financial aid paperwork must be submitted as soon after admission into the program as possible.

Applicant must submit the following information to the School of Graduate Studies and Research:

1. A completed graduate admission application with $30 non-refundable application- processing fee. FAMU graduates and former students must complete Readmission form (Subject to change by FAMU).

2. Official copies of all undergraduate and graduate transcripts as well as transcripts for work completed in post-secondary institutions for which no degrees were awarded.

3. An official copy of results of the Graduate Record Examination (taken within the last five years).

Please submit items 1-3 by February 15th for admission consideration fall semester to:

The School of Graduate Studies and Research
Florida A&M University
469 Tucker Hall
Tallahassee, Florida 32307-4900

Applicants must submit the following information to the Department of Educational Leadership and Counseling chair:

1. A current resume.

2. Three letters of reference from professionals who can assess the applicant's ability to succeed in a doctoral program. Applicants must request these and include them as part of their application packet.

3. A statement of professional goals presented as a narrative of 1000 words or less that describes the applicant's educational expectations, career aspirations, level of skills, and any special qualifications or experiences.

4. Copies of teaching or other professional certificates. A teaching certificate IS NOT required for admission to this program.

5. Samples of any published work completed by the applicant.

Please mail all items 4 through 8 to the following address by February15 for admissions consideration for the following fall semester:

Department of Educational Leadership & Counseling
Attn: Educational Leadership Chairperson
Florida A&M University
College of Education
501 Orr Dr.
Gore Education Complex, Building C, Rm. 124
Tallahassee, FL 32307-4900

Course of Study

Individuals selected for this Ph.D. program are members of a cohort and enroll in the same courses each semester. The program faculty determines the specific courses for each cohort from an approved course list. In each course, candidates are urged to focus on problem-centered learning experiences, critical thinking, research particularly in their specific areas of interest, and their research and presentation competencies and endeavors. The applicants must clearly demonstrate ethical behavior, mature judgment, and responsibility for themselves, their work ethics, and their assignment completion at a high level of proficiency once admitted to this Ph.D. program.

The program is designed as an intensive learning experience. Students are enrolled full time in three courses (9 semester hours) each semester including summers and complete 54 credit hours of course work. In addition to the course work, students will complete a minimum of 15 hours of dissertation semester hours. The minimum total of 69 semester hours is required for program completion. The areas encompassed by the coursework include inter-and intra-personal development, communication, social foundations, statistics and research methods, organizational theory, management and leadership, and technological applications in research and leadership. Cohort participants enroll in courses as a group. Within each course, students are encouraged to focus

the problem-centered learning experiences on their specific area of interest.

Curriculum Guide

The curriculum for the doctoral program is organized around the premise that effective leadership requires an understanding of the social context, technical competence, managerial skills, and personal understanding and commitment. The courses that constitute the curriculum are organized into four core areas:

Candidate complete at least 54 semester hours of course work as designated by the Program faculty. Course work is determined for each admitted Cohort.

*** Course requirements are subject to change in accordance with state and federal mandates and other factors.

The total number of semester hours varies according to each candidate's progression in the program. Candidates are full-time and enroll for 9 hours each semester including summers.

Course Descriptions

Common Professional Core

EDA 6061 Effective School Organizations (3) Explores means of improving school effectiveness through the study of organizational theory, development of proactive changes according to research, and utilization of best practices.

EDA 6064 Organizational Behavior in Educational Settings (3) This course examines the social, cultural, political, and philosophical contexts of social systems and how systems develop as well as their impact on current issues that affect life-long learning. The relationship between social systems and leadership behavior in teaching/learning organizations is also explored.

EDF 6074 Comparative Leadership Issues Among Rural, Urban & Suburban Districts (3) Compares issues and trends related to similar and dissimilar factors relative to cultural diversity and equity in rural, urban, and suburban educational environments.

EDA 6199 This course is a study of Educational Leadership from international and cross-cultural
perspectives. It examines how educational leaders in different countries influence change, motivate teachers, develop learning communities, and practice. The course introduces candidates to the comparative framework used to compare and contrast leadership from cross-cultural perspectives. The practice of educational leadership will be examined in Australia, Africa, Asia, Europe, North America, South America, and Caribbean countries.

EDA 6213 Culturally Relevant Leadership. This course prepares culturally responsive leaders to attend to the diverse needs of all students. It is organized with the understanding that school leaders are moral stewards and public intellectuals who reflect notions of instructional accountability.

EDA 6215 School and Community Relations (3) Explores face-to-face strategies, conventional tools, technological avenues, and other mass media processes for establishing and continuing constructive relationships with faculty, staff, parents, and other significant members of the community involved with schools. The course also examines the working relationships with school boards and ways to avoid common obstacles to positive working relationships. Techniques for agenda formation and meeting strategies will also be explored.

EDA 6216 Leadership & Communication Technologies in Teaching/Learning Organizations (3) Prepares students to use language effectively to read, write, listen and speak. Technology, research techniques, and research findings are used to accomplish the course objectives.

EDA 7062 Diagnosing & Creating Effective Organizations (3) Investigates the process of determining strengths and weaknesses in organizations and explores ways to use effective leadership and management tools to enhance and/or create effective systems with diverse administration, staff, and clients Candidacy Requirements

EDA 7967 Comprehensive Examination (3rd Fall Semester) The doctoral student must take a comprehensive examination that covers content of all courses taken during the first 6 semesters of course work. Successful completion of all course work and this test qualifies the student for candidacy in the doctoral program.

EDA 7980 Dissertation (variable 1-6) Dissertation. Affords doctoral candidates the opportunity to work continuously with faculty during the research and writing processes involved in completing the doctoral dissertation. A minimum of 15 credit hours is required for dissertation completion. Diversity among individuals and groups is a specific focus in this course.

Research Core

EDA 6421 Advanced Research Methods (3) Provides the opportunity for students to learn and apply appropriate quantitative methodologies for use in educational settings.

EDA 7405 Quantitative Research Methods I (3) This course is designed to introduce students to the concepts, methods, and applications of descriptive and inferential statistics. Course content will focus on methods and applications frequently encountered in educational research. Emphasis is placed on the understanding of quantitative assumptions and characteristics and applying descriptive and inferential statistics to problems in which trends need to be described or explained.

EDA 7406 Quantitative Research Methods II (3) This course is designed to prepare students to use quantitative data analysis methods and tools. Course content focuses on developing an understanding of the logic underlying different statistical techniques, along with their advantages and limitations. Attention is placed on analysis of variance, covariance, and multiple regression. Data scenarios are presented for students to determine which multivariate techniques are best suited.

EDA 7415 Qualitative Research Design (3) This course explores the elements of the qualitative research paradigm. Content focuses on the assumptions and the characteristics of qualitative research. Attention is placed on qualitative research as an inquiry approach that seeks to understand human phenomenon. In that regard, the course specifies the data collection, data analysis, and reporting procedures (i.e., research design) used in qualitative research.

EDA 7935 Seminar: Research Proposal (3) Provides experiences to obtain competencies in all aspects of developing research proposals in education.

Professional Core

EDA 6191 Race, Class, and Gender: Policy Issues in Leadership (3) Explores the issues related to gender, race and class in relationship to educational policies that affect leadership in order to promote constructive change.

EDA 6278 Self & Interpersonal Contexts in Teaching/Learning Organizations (3) Provides a variety of opportunities for analysis in the areas of self-knowledge, ethics, values, and behavior tendencies in organizational settings. The constructivist paradigm is used to provide an environment where the learner can participate in individual and group exercises.

EDA 7220 Personnel Issues in Adult Education Enterprises (3) Explores the theoretical and practical issues that are implicated in organizations in which leaders are responsible for adult learning, such as schools agencies, and service organizations.

EDA 7224 Organizational Development and Human Resources Development (3) Provides an in-depth exploration of the sub-constructs associated with transformational leadership. The relationships among these sub-constructs and the development and management of human resources within the organization will be explored. Emphasis will be placed on the ways in which leader characteristics and strategies impact the organizational change process.

EDA 7233 Legal Issue in Educational Policy (3) Explores the legal issues that are fundamental to educational policy such as religion, finance, governance, race, disabilities and gender. The course will stress the interplay of law and policy, legal decision and educational practice.

EDA 7280 Curriculum & Public Policy (3) Explores theories of curriculum and related research and examines how public policy impacts planning, implementation, and evaluation of dynamic curricula.

EDA 6289 Politics and Policy Making Exploration of the research and practice in the politics of education and the process for development of policies in educational environments are discussed and learned in real-life situations.

Specialty Core

EDA 6240 School Finance and Public Policy (3) This course affords opportunities to learn school finance and related research and it determines how public policy impacts all aspects of financial design and operation in schools.

EDA 6260 Facilities & Other Auxiliary Services (3) Provides information on the management of internal funds, building renovation and maintenance, new construction, food service management, academic programs, athletic interscholastic activities, intramural activities, parent organizations, and transportation.

EDH 6635 Overview of Higher Education Administration (3) Affords opportunities to explore the various facets of the evolution and operation of post-secondary higher education institutions and employment issues in agencies.

EDH 7307 Curriculum, Instruction and Distance Learning in Higher Education (3) Examines curriculum and instructional methodologies and ways that distance learning can be used to improve student learning outcomes.

EDA 7905 Directed Individual Study (3) Explores an area of interest under the supervision of a faculty member.

EDA 7930 Special Topics in Leadership (3) Provides the opportunity for the focused examination of topics that have special and/or current significance for students and faculty in educational leadership. The topics may vary from semester to semester.

Candidacy Requirements

EDA 7967 Comprehensive Examination (3rd Fall Semester) The doctoral student must take a comprehensive examination that covers content of all courses taken during the first 6 semesters of course work. Successful completion of all course work and this test qualifies the student for candidacy in the doctoral program.

EDA 7980 Dissertation (variable 1-6) Dissertation. Affords doctoral candidates the opportunity to work continuously with faculty during the research and writing processes involved in completing the doctoral dissertation. A minimum of 15 credit hours is required for dissertation completion.

Graduation Requirements

The requirements for graduation from the Ph.D. program in educational leadership are:

1. The successful completion of a minimum of 18 courses and a minimum of 15 dissertation credit hours in the leadership, research, professional and specialty cores.
2. A minimum 3.0 cumulative grade point average in all course work. No grade of "C" or below will be accepted toward credit in the Ph.D. program and only two classes in which a grade of "C" or below must be repeated.
3. Submission of a TaskStream folio with specific graded artifacts for each course in the doctoral sequence.
4. Evidence of successful integration of program content through the successful completion of the doctoral comprehensive examination and the successful defense of the proposal and dissertation.
5. The submission of the dissertation approved by Ph. D. program coordinator, department chair, dean of the college of education, and dean, graduate studies and research. **Copies of the dissertation have to be made on 24-lb acid free dissertation paper and submitted to the School of Graduate Studies and Research with the binding fee and with a statement to the Department of Educational Leadership chair from the dean of the School of Graduate Studies and Research that the dissertation and fees have been submitted before a student may participate in graduation.** A bound copy must be provided to the dissertation committee chair, the Department of Educational Leadership and Counseling, dean of the College of Education, dean of the School of Graduate Studies and Research, and the FAMU library, and all copies desired by the candidate. No candidate may graduate or participate in graduation activities whose dissertation has not been submitted to the School of Graduate Studies and Research for binding and evidence of such has been provided to the coordinator of the Ph.D. in educational leadership.

Note: Dissertation credit hours may add to the minimum number of semester hours required for completion of the doctoral degree.

Department of Health, Physical Education and Recreation

Bachelor of Science in Health, Physical Education/Fitness
Bachelor of Science Physical Education (terminated Fall 2014 – Teach-out in progress)
Sport Management – Master of Science

The Department of Health, Physical Education and Recreation offers professional courses leading to the Bachelor of Science degree in Health, Physical Education/Fitness, a new degree effective Fall Semester 2014. This degree offers two track options: the student can major in Physical Education Teacher Certification with endorsements in health education and driver and safety education

or major in Health, Leisure and Fitness Studies (HLFS) with concentrations in aquatics, dance, exercise science and coaching and/or health promotions. The Physical Education Teacher Education curriculum is designed to prepare students for certification and employment in the K-12 teaching and coaching profession. Students selecting this option will receive the Bachelor of Science degree in Physical Education until 2016. The Health, Leisure and Fitness Studies major is designed to prepare students for entry level professional employment in community-based recreation, coaching and fitness enterprises, health promotion in business and industrial settings and related fields of hospitality, tourism, sport management, and graduate study in related fields

The Department of Health, Physical Education, and Recreation offers the Master of Science (M.S.) degree in Sport Management. The FAMU Sport Management faculty is committed to offering students the skills and knowledge necessary to understand management in sport-related settings. At the completion of the program, students will have the necessary skill set to be practitioners in the sport industry. The Sport Management program offers interactive, educational training that is necessary for individuals seeking careers in the sport industry – an industry that has evolved into an integral part of today's culture. The operation of sport programs have become more sophisticated and complex, and must be managed by equally savvy professionals well versed in the intricacies of sport activities. Thus, the program emphasizes a variety of managerial, administrative, socio-cultural, and communication skills necessary for success in a multifaceted sport industry.

Students are admitted to the program during the summer, fall and spring semesters. Graduate students in the Sport Management program must maintain a 3.0 grade point average (GPA) during matriculation and graduation from the program. Students are strongly encouraged to be involved in professional development through participation in professional and academic opportunities at the local, state, regional, national, and/or international levels in order to network and gain experience in the field.

Admissions Requirements
Students seeking admission to the Sport Management program must meet the following minimum criteria prior to admission:

1) Possession of an undergraduate or graduate degree from an accredited institution of higher education;
2) Must have earned a 3.0 GPA during the last 60 semester credit hours in the undergraduate program and have a Graduate Record Examination "GRE" score on record. Test results must be within the last five years.
3) Three professional letters of reference (i.e. from former professors or employers) addressing the applicant's ability to succeed in a graduate program – ALL LETERS MUST BE ON COMPANY/ORGANIZATION LETTERHEAD.
4) A personal statement describing the applicant's desire to pursue a degree in Sport Management and career goal(s) in the sport industry

How to Apply
Individuals may obtain an application from FAMU Graduate Studies and Research or obtain it online from the Web-site (https://www.applyweb.com/famug/).

Potential graduate students must submit the completed application

- to Graduate Studies and Research along with an official copy of the GRE scores and official transcript(s) from all previously attended colleges/universities.

All other supporting documentation should also be sent to Graduate Studies and Research Office and the Department of Health, Physical Education and Recreation (HPER) at FAMU.

AN APPLICATION SHOULD BE SUBMITTED TO GRADUATE STUDIES AND RESEARCH BEFORE SENDING ANY MATERIALS TO THE HPER DEPARTMENT.

PLEASE NOTE: ONLY COMPLETE APPLICATION FILES WILL BE CONSIDERED. It is the applicant's responsibility to confirm through the graduate office and/or department that all materials have been received.

Graduate Studies and Research - 850-599-3505
Department of Health, Physical Education and Recreation - 850-599-3135

Application Deadlines
See School of Graduate Studies and Research http://www.famu.edu/index.cfm?graduatestudies&AdmissionsDeadlines

ALL documents must be submitted **BY THE DEADLINE** in order for the application to be considered complete. Incomplete applications will be denied admission.

Funding
While graduate assistantships are the ideal source of funding in graduate school, financial resources are limited. Applicants may apply for funding through the College of Education. Applications may be picked up in person from either the College of Education or from the Department of Health, Physical Education, and Recreation. Individuals must be a fully, regularly admitted to receive this funding. Applicants are encouraged to visit the Graduate Studies and Research Website to search for funding options. Also, one may seek financial support through graduate assistantship positions in administrative offices around the university such as residence halls, the student recreation center, campus recreation, athletics, and other service offices

Faculty:
Professors: Chandler, Steve B.; Okeke, Maria U.; Thompson, Barbara A.
Associate Professors: Hickey, Brian; Price, Sarah
Instructor: Olaves, Jorge
Programs of Study offered in the Department of Health, Physical Education and Recreation
The following courses are required for a teaching major in Physical Education:
Physical Education K-12 (Effective fall 2015 – students entering the program and thereafter will take 120 hours)

Freshman Year
Fall Semester **Sem. Hrs.**

AMH 2010 U.S. History 1492 - 1864 OR	3
	Sem. Hrs.
AMH 2020 US History 1865 – Present	
ENC 1101 Freshman Communication Skills I	3
HSC 1100 Health for Modern Living	3
EDG 1072 College Success and Beyond	3
MGF 1106 Liberal Arts Math I (or higher)	3
Total	**15**

Summer Semester	**Sem. Hrs.**
BSC 1005 Biological Science and Lab	4

Spring Semester	**Sem. Hrs.**
PET 2000 Intro to Physical Education	3
ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II (or higher)	3
PSY 2012 Intro. to Psychology	3
HUN 2401 Human Nutrition	3
Total	**15**

Sophomore Year

Fall Semester	**Sem. Hrs.**
EDF 1005 Introduction to the Teaching Profession	3
PEN 2101 Prin. & Analysis of Aquatics	2
PET 2320 Applied Human Anatomy (Prereq.: BSC 1105)	4
Activity Course (Fit/Cond.)	2
EME 2040 Introduction to Technology for Educators	3
Total	**14**

Spring Semester	**Sem. Hrs.**
SYG 2000 Intro to Sociology	3
AMH 2091 Intro Afro-American History	3
EDF 2085 Introduction to Diversity for Educators (Field Experience)	3
ARH Art and Appreciation or an approved HUM/SOC	3
EDF 3135 The Adolescent Learner	3
Total	**15**

Junior Year

Fall Semester	**Sem. Hrs**
PET 3461 Teaching Physical Education for Elementary Schools	3
PEO 3004 Theory of Coaching	3
PET 2622 Care & Prevention of Athletic Injuries (Prereq.: BSC 1005 & PET 2320)	3
TSL 4081 ESOL Survey of Strategies for Instructions	3
PET 3820 Teaching Sports Skills I	3
Total	**15**

Spring Semester	**Sem. Hrs.**
PET 4312c Applied Kinesiology	3
DAE 3350 Methods and Material of Teaching Dance	3
PET 3230 Motor Learning	3
PET 3510c Tests and Measurement	3
PET 3821 Teaching Sports Skills II	3
PET 4640 Adapted Physical Education (Prereq. BSC 1005 & PET 2320)	3
Total	**18**

Senior Year	**Sem. Hrs.**
Fall Semester	
RED 3333 Reading in Content Area (Field Exp.)	3
PET 3463 Methods of Teaching Physical Education (Field Exp.)	3
APK 4110 Physiology of Exercise (Prereq.: BSC 1005 & PET 2320)	3
PET 4401 Organization and Administration of Physical Education	3
Total	**12**

Spring or Fall Semester	
Sem. Hrs.	
PET 4943 Student Teaching in Physical Education (K-12)	12
Total	**120**

The following courses are required for the major in Health, Leisure and Fitness Studies:

Freshman Year

Fall (1)	
AMH 2010 US History, 1492-1865 or 2020 US History 1865 to Present	3
ENC 1101 Freshman Comm. Skills I	3
HSC 1100 Health for Modern Living	3
MGF 1106 Liberal Arts Math I or MAC 1105 College Algebra	3
BSC 1005 Biological Science	3
BSC 1005L Biological Science Lab	1
Total	**16 hours**

Spring (2)	
EDG 1072 College Success and Beyond	3
ENC 1102 Freshman Comm. Skills II	3
MGF 1107 Liberal Arts Math II	3
HUN 2401 Human Nutrition	3
ANT 2000 Introduction to Anthropology	3
PSY 2012 Introduction to Psychology	3
Total	**18 hours**

Sophomore Year

Fall (3)	
HSC 2400 First Aid	3
PET 2622 Care and Prevention of Athletic Injuries	3
PEN 2101 Principles & Analysis of Aquatics	2
PET 2320 Applied Human Anatomy with Lab (Prerequisite BSC 1005)	4
ECO 2013 Principles of Economics	3
Total	**15 hours**

Spring (4)	
AMH 2091 Intro Afro-American History	3
GEA 2000 World Geography	3

or EVS 4007 Intro to Environ Studies
DEP 2004 Human Growth and Development or
EDF 3135 Adolescent Psychology 3
SYG 2000 Introduction to Sociology 3
DAE 3350 Methods of Teaching Dance 3
Total **15 hours**

Junior Year
Fall (5)
LEI 3004 Introduction to Recreation and Park Leisure Services 3
HSC 4500 Epidemiology 3
LEI 3830 Tourism 3
LEI 4543 Sports and Recreation Facility Management 3
Concentration 3
Total **15 hours**

Spring (6)
LEI 3546 Park Management 3
PET 3230 Motor Learning 3
PET 4312c Kinesiology 3
PET 4640 Adapted Physical Education 3

(Prereq. BSC 1005 & PET 2320)
Concentration 3
Total **15 hours**

Senior Year
Fall (7)
HSC 3200 Community Health 3
LEI 4009 Community Recreation 3
APK 4110c Physiology of Exercise 3
LEI 4500 Administration of Recreation and Parks 3
Concentration (2 or 3)
14 hours

Spring (8)
LEI 4940 Internship in Health, Leisure and Fitness Studies 12
12 hours

Total **120**

M.S. in Sport Management
Program Guidelines

Minimum number of required credit hours for graduation – 36

- Option A (non-thesis) – 30 hours of coursework and 6 hours for internship (minimum 450 clock hours), capstone project and comprehensive examination following completion of all coursework
- Option B (thesis) – 30 hours of coursework, 6 hours for thesis, a thesis defense and comprehensive examination following completion of all coursework

Schedule of Courses

Fall (12 hours)
SPM 5701 Research Methods in Sport 3
PET 5466 Theory & Practice of Sports/Leisure Management 3
SPM 5308 Marketing & Fundraising in Sports Organizations 3
SPM 5156 Seminar in Athletic Administration (Recommended Elective) 3

Spring (12 hours)
SPM 5126 Personnel Management in Sport Organizations 3
PET 5145 Problems in Physical Education/Social Issues in Sport 3
SPM 5726 Legal Issues in Sport/Leisure Management 3
SPM 5505 Sport Finance and Economics 3

Summer (6 hours)
SPM 5206 Ethics in Sport Management 3
SPM 5108 Sport/Leisure Facilities Management (Recommended Elective) 3

Fall (6 hours)
SPM 5940 Internship in Sport/Leisure Management 6

Thesis Option (3-6 hours)
SPM 5971 Thesis in Sport Management 3-6
Electives
SPM 5108 Sport/Leisure Facilities Management 3
PET 5216 Psychosocial Basis of Physical Education 3
SPM 5156 Seminar in Athletic Administration 3
EDF 5481 Introduction to Educational Research (recommended for thesis option) 3
EDF 5400 Basic Statistics (recommended for thesis option) 3
EME 5403 Fundamental Computer Concepts and Skills 3
EDF 5608 Sociological Foundations of Education 3
Added Options Require Departmental Approval

Course Descriptions

DAA 1126 Afro-Caribbean Dance (2) Provides the student with the basic skills and knowledge for the performance of the Caribbean dance with a focus on the acquisition of basic technique, isolations, across the floor movement and studies associated with the Katherine Dunham technique.
DAA 1100 Modern Dance I (2) Provides the student with the basic skills and knowledge for the performance of beginning modern dance; skills in technique, movement patterns, composition, improvisation and the history of modern dance.
DAA 1200 Ballet (2) Provides the student with the basic skills and knowledge for the performance of basic ballet movement with an emphasis on the acquisition of basic center floor, barre, across the floor, allegro work, and the history of ballet.
DAA 1310 Social Dance (2) Introductory course focusing on skill and knowledge of traditional ballroom dances (Swing, Tango, Fox

Trot, Waltz, Cha Cha, Merengue, Samba, Rhumba), fad dances and country-western dances.

DAA 1312 Folk and Square Dance (2) Introductory course focusing on the learning of and the acquisition of skills and knowledge of international folk dances, American Heritage dances, and Western square dance.

DAA 1330 Traditional African Dance I (2) Provides the student with basic technique and knowledge of the dances of Africa (west, east, south, central) with an emphasis on the acquisition of basic steps, movement sequences and the understanding of the cultural context in which the dances take place.

DAA 1680 Dance Performance I (1) Provides students the opportunity to participate in performance activities in the Orchesis Contemporary Dance Theatre with permission of the director.

DAA 1500 Modern Jazz Dance I (2) Provides students the skills and knowledge of basic jazz technique, movement patterns, composition and the history of the evolution and performance of jazz dance.

DAA 1520 Tap and Rhythm Dance (2) Provides students the skills and knowledge needed for the performance of tap-rhythm dance with a focus on the acquisition of basic steps, tap combinations, and the history of the evolution and performance of tap dance.

DAA 2127 Dunham Technique II (2) Provides students with an intermediate level of proficiency in Caribbean technique and movement sequences and the Katherine Dunham movement language.

D**AA 2101 Modern Dance II (2) Prereq:** DAA 1160 or permission of instructor. Provides students with advanced technique, movement patterns across the floor, composition and improvisation. Emphasis is placed on expanding the student's style, interpretation, musicality and personal expression through dance.

DAA 2201 Ballet II (2) Prereq: DAA 1200 or permission of instructor. Provides students with advanced technique focusing on the use of center floor work, barre, movement patterns across the floor and allegro work.

DAA 1300 Ballroom Dance (2) A continuation of the acquisition of skills and knowledge in the performance of the social dances such as the Swing, Tango, Fox Trot, Waltz, Cha Cha, Merengue, Samba, Rhumba, fad dances and country-western dances..

DAA 2331 Traditional African Dance II (2) Provides intermediate level skills and knowledge in traditional African dance with an emphasis on the acquisition of technique, movement sequences and knowledge of the interrelationships between culture and dance.

DAA 2681 Dance Performance II (1) Prereq: DAA 1480. Provides students the opportunity to participate in performance activities in the Orchesis Contemporary Dance Theatre with permission of the director.

DAA 2610 Dance Theory and Composition I (2) Provides students with an exploration of elements vital to the processes of improvisation and composition with an emphasis on the use of time, space, energy, design, dynamics, rhythm, motivation, sequencing, phrasing, movement qualities and transitions.

DAA 3108 Modern Dance III (2) Prereq: DAA 2161. Provides students with more advanced technique, movement and performing skills with emphasis on expanding the style, interpretation, musicality and personal expression through dance.

DAA 3208 Ballet III (2) Prereq: DAA 2201 or permission of instructor. Provides students with advanced technique focusing on the use of center floor work, barre, movement patterns across the floor and allegro work.

DAA 2701 Dance Theory and Composition II (2) Provides students with further work in composition with a focus on the study of choreographic forms and structure, ideological and aesthetic sources.

DAA 4110 Modern Dance IV (2) Prereq: DAA 3162. Provides students with advanced technique, movement and performing skills with emphasis on expanding the style, interpretation, musicality and personal expression through dance.

DAA 4210 Ballet IV (2) Prereq: DAA 3202 or permission of instructor. Provides students with advanced technique focusing on the use of center floor work, barre, movement patterns across the floor and allegro work to increase ballet proficiency.

DAA 4790 Senior Concert (3) Prereq: DAA 2481, DAA 3701, DAA 4163, DAA 4203. Provides students the opportunity to present own choreography, knowledge of dance production and ability to work with others in a public forum.

DAE 3350 Methods of Teaching Dance (3) Focuses on the learning and development of teaching strategies for folk, square and social dance with application to the school physical education program.

DAE 3310 Creative Movement and Rhythms for Elementary Teachers (3) Provides skill, knowledge, and methodology in the use of movement education concepts and rhythmic activities for the elementary child.

DAE 4940 Student Internship (2) Prereq: DAA 1500, DAA 2361, DAA 3701, DAA 4163, DAA 4203, DAA 4790, DAE 2300, DAE 3350, DAE 3310, DAN 1701, DAN 2600, DAN 4111. Provides students with teaching experiences and responsibilities in a school setting (elementary, middle, secondary) under the joint supervision of a directing teacher and a college supervisor.

DAN 1701 Dance Production II (Tap) (1) Provides students with opportunities to choreograph and/or work with production aspects of presenting a concert such as stagecraft, house management, publicity, box office, costuming.

DAN 2600 Music and Choreography (2) Prereq: DAA 1160, DAA 1200. Provides students with knowledge of musical forms and available music resources.

DAN 3134 Historical and Cultural Perspectives in Dance I (3) Provides students with the development of dance from ancient history to the 19th Century.

DAN 3480 Dance Production I (1) Provides students with performance and production opportunities through participation in the Orchesis Contemporary Dance Theatre.

DAN 4135 Historical and Cultural Perspectives in Dance II (3) Provides students information on dance of the 20th Century with emphasis on major personalities, choreographers, performers and dance companies and a special focus on black contributions to concert dance.

HLP 4300 Organization and Administration of Physical Education (3) Philosophies and policies of administering various aspects of physical education programs. Emphasis is placed on planning, budgeting, purchasing, designing facilities, etc.

HLP 4301 Supervision of Physical Education (3) Exposes students to supervisory practices as it takes place in many different teaching situations and with teachers at different stages of development.

HLP 4320 Tests and Measurement/Health and Physical Education (3) Tests and measurement currently used in health-re-

lated programs. Practical experience designing measurement instruments and evaluating specific programs in school settings and nontraditional settings.

HSC 1100 Health for Modern Living (3) Factors which influence and determine personal health and safety.

HSC 2210 Environmental Health and Safety Education (3) Explores diverse environmental factors within the general framework of air, water, food, world population, etc., as they affect humanity.

HSC 2400 First Aid (3) American Red Cross Manual-Techniques used in care of injuries, preventive measures and prompt adequate care.

HSC 3002 Principles of Health Education (3) Emphasizes historical and current events regarding philosophy and practice of health education and foundational principles influencing health professions.

HSC 3120 Consumer Health (3) Emphasizes major consumer health problems that are encountered when selecting, purchasing and financing safety and medical services, and other health-related products in marketplace.

HSC 3131 Mental Health and Counseling (3) Exploration of parameters of mental health, theories and principles of emotional well-being.

HSC 3133 Family Lifestyles and Sexuality (3) Strategies for teaching family living and sexuality to different age groups, varying cultural differences, sexuality research and problems and trends.

HSC 3143 Preventive Approaches to Substance Abuse (3) Provides current, accurate and documented information, skills, and procedures utilized in handling issues related to substance abuse in various settings.

HSC 3200 Community Health (3) An overview of community health promotion, organizations, issues, medical care and diseases.

HSC 3301 Health Programs for Elementary School (3) Understanding principles of organization of school health programs; health policies and services; health status and problems of the elementary school child.

HSC 3107 Healthy Lifestyles for College Students (3) This course examines the importance of lifestyle, health behavior and risk factor assessment in disease prevention and health promotion of college students.

HSC 3302 Health Education in High School (3) Organization of class, methods of teaching, selection of content, and coordination between teachers and health personnel.

HSC 3710 Health Promotion (3) Introduction to a comprehensive approach to planning, implementing, managing, and evaluating health education/promotion programs.

HSC 4200 Personal and Community Health (3) Community health problems; programs and services; modern concepts of disease; principal disease prevention and control.

HSC 4211 Health and Human Ecology (3) Explores the nature of health-related issues and their relationship to environmental matters.

HSC 4450 Driver and Traffic Safety Education (3) Prereq: Upper division status and valid Florida driver's license. Critical analysis of traffic accidents, attitude factors, knowledge of automobile operations, and laws and regulations. Includes laboratory experience for developing skills.

HSC 4451 Teaching of Driver and Traffic Safety Education (3) Prereq: HSC 4450. Prepares teachers to organize and teach driver education and traffic safety in secondary schools, materials and methods of driver and traffic safety education. Includes lab experiences.

HSC 4453 General Safety Education (3) Focuses on procedures and techniques of vehicle and pedestrian safety.

HSC 4454 Traffic Safety Education (3) Focuses on knowledge of rules, regulations, procedures for operating any type of transportation on public streets, roads and highways.

HSC 4460 Supervision and Administration of Driver and Safety Education (3) Focuses on the organization and management of implementing a driver and safety program.

HSC 4500 Epidemiology (3) Study of epidemiology as a scientific discipline and its role in health service planning and administration. Emphasis on methods for studying chronic disease, public health, vital statistics, sanitation, and communicable disease.

HSC 4633 Issues in Health (3) Explores current and relevant problems and issues in the health and health-related fields.

HSC 4700 Management of Health Education Programs (2) Provides a comprehensive, contemporary approach to the administrative process of managing health education programs.

HSC 4730 Research Techniques in Health Education (3) Introduction to research methods in educational settings relevant to health and health-related fields.

HSC 4800 Pre-internship Experience (3) Provides detailed information and practical limited hands-on experience for successful completion of internship in school/community health.

HSC 4850 Student Internship (6-12) Provides practical health-related experiences in a controlled environment for an extended period of twelve weeks.

HSC 4611 Ergogenic Aids to Human Performance (4) This course examines the physiological, biomechanical, and psychological basis of ergogenic aids to human performance with applications to physical fitness and competitive sport.

HSC 4594 Exercise Programs for Special Adult Populations (4) This course examines the strategies used in exercise programming for special populations of adults. Emphasis is placed on exercise guidelines for the elderly, pregnant women, and individuals with diabetes mellitus, obesity, asthma, cystic fibrosis, and chronic obstructive pulmonary disease.

LEI 3004 Introduction to Recreation and Park Leisure Services (3) Introductory course focusing on historical and philosophical principles of recreation and leisure education.

LEI 3225 Leadership Teaching in Social Recreation (2) Explores methods, materials, and strategies for teaching recreational concepts.

LEI 3315 Recreation Leadership Theory and Practice (2) Principles and techniques of managing recreational programs; clinical experience required.

LEI 3435 Recreation Program Development (3) Curriculum design and development of recreational materials.

LEI 3546 Park Management (3) Administrative procedures for organizing, planning, conducting, disseminating and implementing park programs. Budgetary matters are also discussed.

LEI 3740 Recreation for the Mentally Disabled (3) Focuses on curriculum design and development of programs for persons with disabilities; clinical experience required.

LEI 3830 Tourism (3) This course explores the economic, social and environmental impact of this industry. Major components of tourism such as attractions, services, and transportation will be included. Major emphasis will be placed on the importance of tourism planning as a means of establishing quality services.

LEI 3949 Internship in Recreational Leadership (3-12) A developmental experience in leadership responsibilities. Students are permitted to serve as recreation aides in various settings.

LEI 4009 Community Recreation (3) Administrative procedures in community recreation organizational structure; finance, legal provisions, program planning, and leadership in community agencies. A 16-hour block of time other than class meeting days is spent in observation/participation experience at private/public community agency.

LEI 4500 Administration of Recreation and Parks (3) Principles and practices of administration of recreation and parks are discussed. Emphasis on planning, conducting, and evaluating recreation program.

LEI 4504 Outdoor Recreation Services (2) Planning, organization, and operation of programs in public and commercial outdoor recreation areas and outing sports complexes, including camping facilities and field experience.

LEI 4543 Sports and Recreation Facilities Management (3) Designed to familiarize students with the various sports facilities and their techniques for utilization and management. Emphasis on the principles of management and multiple use of facilities.

LEI 4670 Design of Recreational Areas and Parks (3) Focuses on the construction of recreational areas and parks. Various layouts are designed to scale-cost; space and location are discussed.

LEI 4671 Urban Park and Recreation Art (3) Focuses on drawings, sculptures, paintings, etc., of artistic renditions relevant to parks and recreational facilities.

LEI 4700 Leisure Service for Special Populations (3) Examines segments of the community who have needs for specialized or adaptive recreational services and how these needs can be best met. Emphasis on programming for the atypical individual.

LEI 4946 Practicum in Park Management (3) Continuation of developmental experience. Emphasis on planning, conducting and evaluating activities leading to work as a direct leader.

LEI 4940 Internship in Health, Leisure, and Fitness Studies (12) – The course involves a continuation of developmental experiences in health, leisure and/or fitness settings in the community and/or state. Emphasis is placed on planning, conducting and evaluating activities leading to work as a direct leader. The course includes a laboratory experience for developing skills over a twelve week period.

PEL 1041 Recreational Activities (1) Introductory focus on games and sports activities related to leisure time pursuits.

PEL 1111 Bowling (2) Introductory course focusing on learning basic skills, knowledge, and etiquette of bowling.

PEL 1112 Intermediate Bowling (2) An intermediate course focusing on the different releases, rules, and techniques of the sport. Emphasis on league bowling participation.

PEL 1121 Beginning Golf (2) Introductory course focusing on skills and knowledge of beginning golf.

PEL 1122 Intermediate Golf (1) An intermediate course focusing on skills, knowledge and etiquette of golf.

PEL 1124 Varsity Golf (1) Course credit given only to participants on varsity golf team.

PEL 1141 Archery (2) Introductory course focusing on skills and knowledge of archery, target shooting and safety codes.

PEL 1166 Indoor Rifle Shooting (2) Introductory course focusing on shooting skills and knowledge of safety regulations in use of .22 caliber rifle.

PEL 1211 Softball (2) Introductory course focusing on learning basic skills, rules, and offensive and defensive strategy of softball.

PEL 1219 Varsity Baseball I (1) Course credit given only to participants demonstrating knowledge and skill development in baseball.

PEL 1321 Volleyball (2) Introductory course focusing on skills, knowledge, and etiquette of the game of volleyball.

PEL 1341 Beginning Tennis (2) Introductory course focusing on skills, knowledge, and etiquette of the game of tennis.

PEL 1342 Intermediate Tennis (2) An intermediate course focusing on skills and knowledge of tennis.

PEL 1344 Varsity Tennis I (1) Course credit given only to participants demonstrating knowledge and skill development.

PEL 1346 Badminton (2) Introductory course focusing on skills and knowledge of badminton.

PEL 1441 Racquetball (2) A beginning course in racquetball. This course provides opportunities for students to develop the basic skills in racquetball. Specific attention is directed to the history, equipment, and variations of the game.

PEL 1511 Soccer (2) Introductory course focusing on skills, knowledge, and strategy of soccer.

PEL 1541 Speedball (2) Introductory course focusing on skills, knowledge, and strategy of speedball.

PEL 1621 Basketball (2) Introductory course focusing on learning basic skills, rules, and offensive and defensive strategy of basketball. Open only to those who have not played on organized team.

PEL 1624 Varsity Basketball I (1) Course credit given only to participants demonstrating knowledge and skill development in basketball.

PEL 1644 Varsity Football I (1) Course credit given only to participants demonstrating knowledge and skill development in football.

PEL 1646 Touch Football I (1) Introductory course focusing on learning basic skills, rules, and offensive and defensive strategy of touch football.

PEL 2124 Varsity Golf I (1) Course credit given only to participants demonstrating knowledge and skill development in golf.

PEL 2219 Varsity Baseball II (1) Course credit given only to participants on varsity baseball team.

PEL 2344 Varsity Tennis II (1) Course credit given only to participants demonstrating knowledge and skill development in tennis.

PEL 2442 Intermediate Racquetball (2) A study of the strategies and tactics in racquetball. Emphasis on the patterns of play and advanced techniques of the game.

PEL 2624 Varsity Basketball II (1) Course credit given only to participants demonstrating knowledge and skill development in basketball.

PEL 2644 Varsity Football II (1) Course credit given only to participants on varsity football team.

PEL 4940 Practicum in Coaching Track (2) Field experience as related to actual sport; coaching problems and psychology of coaching.

PEL 4941 Practicum in Coaching Baseball (2) Coaching problems and psychology of coaching baseball.

PEM 1101 Fundamental Movement (1) Variety of controlled activities-conditioning, games, relays, and rhythms.

PEM 1131 Weight Training (1) Introductory course focusing on skill and knowledge of progressive weight training techniques.

PEM 1132 Nautilus Strength Training (2) An introductory course to the use of Nautilus equipment for weight training. Emphasis on basic routines for progressive weight training.

PEM 1140 Aerobic Conditioning (1) Introductory course focusing on cardiovascular conditioning and physical fitness.

PEM 1301 Track and Field (1) Introductory course focusing on track and field events.

PEM 1421 Fundamentals of Wrestling (1) Introductory focus on techniques of wrestling. Terminology history, scoring, attire, and safety are emphasized.

PEM 1422 Advanced Wrestling (1) Provides a comprehensive study of offensive and defensive strategies utilized in wrestling. Rules, terminology, matches, weight classes, and various skills and techniques will be emphasized.

PEM 1431 Judo (1) Intermediate course focusing on skills, knowledge, and attitudes of personal defense activities in judo.

PEM 1441 Basic Karate (2) Introductory course focusing on skills, knowledge, and attitudes of personal defense activities in karate.

PEM 1953 Varsity Cheerleading (1) Introductory course for participants on the varsity cheerleading team.

PEM 2111 Physical Fitness of Selected Activities (3) Course deals with selected activities for the individual fitness regimen. Emphasis is prescribed activities and weight control through exercise.

PEM 2116 Conditioning and Weight Control (2) Course deals with theory and activity related to conditioning and weight control.

PEM 2141 Advanced Physical Fitness (2) Primarily laboratory (participatory) with minimal lecturing and outside assignments.

PEM 2171 Aerobics/Cardiovascular Fitness (2) An intermediate course in aerobic conditioning designed to place demand on the cardiovascular and respiratory systems. Emphasis on duration of exercise to achieve a target heart rate.

PEM 2442 Karate [Tae Kwon Do] (2) Emphasis is on advanced skills, knowledge and attitudes of karate.

PEN 1121 Beginning Swimming (1) Introductory course to basic skills utilized in swimming. Equipment, safety, skills and techniques are emphasized.

PEN 1122 Intermediate Swimming (2) An intermediate course in swimming. Emphasis is placed on advanced beginner's skills.

PEN 1171 Aqua-Cise (2) A method of aerobic exercise utilizing water as the medium. Emphasis on cardiovascular exercises in the water.

PEN 2101 Principles and Analysis of Aquatics (2) Techniques and fundamentals of teaching swimming.

PEN 2113 Life Guarding (2) Prereq: Swimming ability following American Red Cross procedures. Introductory course focusing on skills and knowledge of life guarding.

PEN 2136 Scuba Diving (2) Prereq: Swimming ability. Introductory course focusing on skills and knowledge of scuba diving.

PEN 3104 Seminar in Aquatics (3) This course is designed to acquaint individuals with the different topics in the field of aquatics. Topics range from running aquatic events to participation in different aquatic sports. The course content includes research and theory on topics which students select from a topic list or one approved by the instructor.

PEN 4106 Management and Operations of Aquatic Facilities (3) This course is designed to acquaint individuals with the body of knowledge in the management and operations of aquatic facilities. The course content includes research and theory on operations of different facilities, mechanical systems, supervision and employment relations, safety, risk management, and curricular development for aquatics.

PEN 4105 Aquatics Practicum (Variable 2-6) This course is designed to acquaint individuals with the different practices in the field of aquatics. The practicum allows the students to apply their aquatic knowledge from coordination of aquatic events to participation and supervision in different aquatic programs/sports.

PEO 2003 Officiating Techniques (3) Techniques which deal with qualifications of officials and principles of officiating individual, dual, and team sports. Field experiences in officiating at community recreation centers and intramural programs.

PEO 2011 Principles and Analysis of Selected Sports (3) Individual and combined skill techniques presented in three or four teams. Emphasis will be given to teaching procedure and techniques and classroom management.

PEO 2031 Principles and Analysis of Individual/Dual Sports (3) Individual and combined skill techniques presented in three of the four sports. Emphasis will be given to teaching procedure and techniques and classroom management.

PEO 3004 Theory of Coaching (3) Scientific analysis made of current theory of coaching athletics. Emphasis is on psychology of coaching.

PEO 3219 Coaching Baseball (2) Coaching strategies, including team strategy, managerial problems, psychology of coaching, and methods of teaching skills and techniques.

PEO 3344 Coaching Methods (2) Coaching strategies, including individual and team strategy, managerial problems, psychology of coaching, and methods of organizing and conducting meetings (optional for female majors).

PEP 3107 Personal Family Physical Fitness (2) Designed to aid the family in the selection of physical fitness activities.

PEP 3205 Educational Gymnastics I (3) Explores strategies of promoting skillful use of small and large apparatus through free exploration guided exploration and problem solving techniques.

PEP 3304 Coaching Track and Field (2) Coaching strategies including team strategy, managerial problems and methods of organizing track meets.

PEP 4201 Theory and Practice of Teaching Gymnastics (2) Teaching and managerial strategies in gymnastics.

PEP 4940 Practice of Health Fitness Program (3) Provides practical field-based experience in health and fitness settings.

PEQ 2121 Theory and Practice of Teaching Swimming (2) Nature and purpose of safety equipment, skills and techniques; methodology and strategies of teaching are emphasized.

PET 1920 A, B, 2920, 3230 Professional Orientation (1) A course designed primarily for the physical education professional student. Emphasis on involvement of students through stimulating activities of the profession. May be repeated for credit.

PET 2000 Introduction to Physical Education and Sport (3) This course is designed to orient students to the field of physical education and sports and will cover topics such as historical and scientific foundations, philosophy, ethics, professional associations and affiliations and career opportunities within the field.

PET 2320C Applied Human Anatomy in Physical Education (3) Prereq: BSC 1005. Emphasis is on anatomy of nervous, muscular, circulatory, respiratory and skeletal systems and their relationship to human movement and fitness.

PET 2622 Care and Prevention of Athletic Injuries (3) Prereq: BSC 1005; PET 2320C. Setting up and carrying out conditioning program, training room supervision, first aid care, and prevention of injuries.

PET 2941C Early Involvement (3) Orientation to field of health,

physical education, and recreation. Observation and participation required.

PET 3820 Teaching Sports Skills I (3) This course is designed to introduce individual and combined skill techniques of several selected sports. Emphasis will be placed on teaching methods and techniques used for elementary and secondary students.

PET 3821 Teaching Sports Skills II (3) This course is designed to introduce the second phase of individual and combined skill techniques of several selected sports. Emphasis will be placed on teaching methods and techniques used for elementary and secondary students.

PET 3020 Foundations of Physical Education (3) Philosophical, sociological, psychological role of physical education in general education.

PET 3230 Principles and Practices of Motor Learning (3) Analysis of theories of learning with particular application to perceptual motor skills.

PET 3285 Perceptual-Motor Development (3) Course examines the development of physical capabilities and motor experiences of infants through pre-adolescents. Emphasis is placed on visual and motor development teaching programs for children from six to twelve.

PET 3433 Physical Education in Intermediate Grades (3) Examines the curriculum and methods of teaching activities in the intermediate grades. The course provides opportunity to acquire teaching techniques, strategies and materials for the intermediate grades.

PET 3461 Physical Education Programs for Elementary School (3) Activities include group games, relays, story plays, rhythms, mimetics, team games, stunts, and self-testing and are presented in accordance with interests, needs, and characteristics of pupils in this age group. Attention focused on various teaching methods used for both indoor and outdoor facilities.

PET 3463 Methods of Teaching Physical Education (3) Organization of materials; procedures; teaching aids and literature for teachers of physical education; field experience eight weeks 4 hours per week. Transportation needed (junior level).

PET 3473 Interschool Athletics (3) A review of the factors that influence interschool athletics. A systematic study of Florida High Athletic Association (FHAA), including an investigation of the literature and analysis of interschool athletics in other states. Observation and participation required.

PET 3510c Tests and Measurement in Physical Education (3) Advanced techniques in test administration are given. Emphasis is on the analysis of tests and elementary statistics.

PET 3930 Professional Orientation V (1) A course designed for juniors majoring in physical education. Emphasis is on resume construction, interviewing techniques, professional associations and affiliations.

PET 4020 Principles and Foundations of Physical Education (3) Meaning, philosophical role of physical education in general education, and biological, psychological, and sociological foundations (senior level).

PET 4312c Applied Kinesiology (3) Prereq: BSC 1005, PET 2320C Mechanical aspects of human movement.

APK 4110C Physiology of Exercise (3) Prereq: BSC 1005, APB 3220. Physiological responses during exercise; physiology of exercise from standpoint of physical educator.

PET 4401 Organization and Administration of Physical Education (3) Philosophies and policies in administration of program planning and management. This course examines classroom management, professional ethics and legal issues as related to physical education.

PET 4413 Management of Health Fitness Program (3) Techniques of managing a healthy fitness program. Practice is given in the therapeutic use of exercise.

PET 4453 Coaching Clinic I and II (3) An intensive study of the major problems in athletic coaching. Open to high school coaches.

PET 4602 Sports Conditioning and Rehabilitation (3) Consideration is given to athletic training in improving strength and cardiovascular endurance. Emphasis is on the various methods of training and rehabilitation.

PET 4631 Neurological and Organic Rehabilitation Exercise (3) Explores activity programs that will enhance the development of strength, endurance, and coordination of children with multiple handicaps.

PET 4640 Adapted Physical Education (3) Role of exercise in rehabilitating prevalent disabilities in children; fundamental concepts of adjustment and development of special needs persons. Ten (10) hours of laboratory experience in various settings.

PET 4905 Directed Individual Study (1-5) Supervised and laboratory research opportunities for students desirous of conducting publishable quality work. Enrollment by permission of head of department.

PET 4920 Professional Orientation (1) A study and analysis of subject area content for grades K-12. Nature of test development and preparation, competencies, skills, sources for review, test taking advice and test format are explored.

PET 4930 Instructional Seminar in Health and Physical Education (3) Examines problems encountered in classroom teaching. An intensive assessment of Florida's teacher competencies are presented. Students must pass the College of Education's prototype examination.

PET 4943 Student Teaching in Health and Physical Education K-12 (6-12) Completion of general education and professional courses. Students must have been admitted to teacher education. Experience is given at the elementary level, middle school level or high school level. Grade is contingent on passing the Florida Teacher Certification Examination.

PET 5145 (3) Problems in Physical Education/Social Issues in Sport - Policies, physiological and sociological problems are discussed with reference to physical education.

PET 5216 Physiological Basis of Physical Education and Athletics (3) Analytical approach to study of exercise physiology and its application to human performance in physical education activities and athletics.

PET 5466 Theory and Practice of Sport/Leisure Management (3) Practical application of management science to all realms of sport industry.

SPM 5108 Sport and Leisure Facilities Management (3) Designed to address negotiation skills, building and maintenance cost, policy, priority use, scheduling and other issues relevant to the profession.

SPM 5126 Personnel Management in Sport Organizations (3) Concerns hiring and training practices of individuals involved in the operation of sports programs.

SPM 5156 Seminar in Athletic Administration (3) Concerns leading, administering, and managing programs in sports which include athletics, intramural competition and other activity-based programs.

SPM 5206 Ethics in Sport Management (3) The development of theory, analytical knowledge, and skills desirable of upper and middle level managers in the administration and management of various facets of the sport industry. The focus of this class will be on social issues, social justice, and ethics in sport management
SPM 5308 Marketing & Fundraising in Sport Organizations (3) This course will provide students with a basic understanding of sport marketing principles and theories to include corporate sponsorship, public relations, behaviors of sport consumers, market segmentation and pricing, and how to build a sport marketing plan.
SPM 5505 Sport Finance and Economics (3) This course is designed to provide the student basic information related to finance and economics as applied to the managerial control of sport organizations. Included are discussions of the ownership, taxation, financial analysis, feasibility studies, licensing, and economic im pact studies.
SPM 5701 Research Methods in Sport (3) Methods and techniques used in research, sport administration and physical education, including library materials and writing techniques.
SPM 5726 Legal Issues of Sport and Leisure Management (3) Fundamental legal principles affecting amateur sports and physical activity programs.
SPM 5940 Internship in Sport/Leisure Management (6) Practical insight into various sport and/or fitness management settings.
SPM 5971 Thesis in Sport Management (3-6) Provides the student with experience conducting research-based inquiry related to the sport industry. Requires student to submit a written research proposal to be approved by a thesis committee as well as an oral defense of research before a thesis committee. A final approved written report is to be submitted.

Department of Secondary Education, Technology Education, and Foundations

The Department of Secondary Education, Technology Education, and Foundations offers a number of undergraduate teacher education programs at the secondary school level in - select content areas. State-approved teacher education programs at the secondary level include science education with a concentration in biology, science education with a concentration in chemistry, English education, mathematics education, music education with a concentration in wind, piano and percussion, or concentration in voice or piano, science education with a concentration in physics, social science education with a concentration in history or political science, and technology education. The department has a state approved professional training option (PTO) program that provides an opportunity for students majoring in select non-education degree programs to seek temporary certification. Recent and pending modifications in teacher certification requirements in Florida may alter the requirements from those printed below. Each student is advised to consult the department and his or her respective academic advisor for more up-to-date information as it becomes available.

Bachelor of Science Degrees Offered:

English Education*
Mathematics Education
Music Teacher Education (with a concentration in voice or piano or wind, piano and percussion)
Science Education with a concentration in Biology Education, Chemistry Education or Physics Education
Social Science Education (with a concentration in History Education or Political Science Education)*
Industrial Arts/Technology Education*
*(Effective fall 2015, students entering the programs and thereafter, are required to complete 120 semester hours)

Bachelor of Science in English Education

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Composition Skills I	3
EDG 1072 College Success	3
EDF 1005 Introduction to the Teaching Profession w/Field Exp.	3
MGF 1101 Liberal Arts Mathematics I	3
SYG 2000/ANT 2000/Introduction to Sociology/Intro. to Anthropology/ PSY 2012 Introduction to Psychology	3
Total	**15**

Spring Semester	**Sem. Hrs.**
FRE/SPN 1120 or Elementary French I or II/ Lab OR FRE/SPN 1121 Elementary Spanish I/ Lab or II	4
MGF 1107 Liberal Arts Mathematics II OR MAC 1105 College Algebra	3
BSC 1005 Biological Science/Lab	4
ENC 1102 Freshman Communicative Skills II	3
Total	**14**

Sophomore Year

Fall Semester	**Sem. Hrs.**
AMH 2091/ Introduction to African American History	3
AFA 3104 OR the African American Experience AML 2010 American Literature I	3
FRE 2200/ Intermediate French I/Lab OR SPN 2200 Intermediate Spanish I/Lab	4
SPC 1050 Foundations of Speech or SPC 2608 Public Speaking	3
LIT 2110 Introduction to Literature	3
Total	**16**

Spring Semester	**Sem.Hrs.**
MTG 2206 College Geometry (or equivalent)	3
AMH 2010/2020 U.S. History 1492-1864 OR U.S. History 1865- Present	3
EME 2040 Introduction to Technology for Educators	3
EDG 2085 Introduction to Diversity for Educators	3
ISC 1006 Wide World of Science I OR HUN 2401 Human Nutrition	3
Total	**15**

Junior Year

Fall Semester	**Sem.Hrs.**
ENC 3320 Advanced Composition	3
ENL 3013 English Literature I	3
LIN 4680 Advanced Grammar	3

ESE 3341 Theory and Practice (Fall Semester ONLY)	3
TSL 3080 Introduction to ESOL Theory/ Practice	3
Total	**15**

Spring Semester	**Sem.Hrs**.
ENL 4331/ENL 4332 Shakespeare I or Shakespeare II	3
RED 3333 Reading in the Secondary School	3
EDF 3430 Measurement and Evaluation of Educational Growth	3
AML 3041 American Literature II	3
EDF 3210 Psychology in Education	3
LIT 3333 Multicultural Literature for Adolescents	3
Total	**18**

Senior Year

Fall Semester	**Sem.Hrs.**
AML 4604/4610/4934 Introduction to Afro-American/ Legacy/Afro American Novel I/ Seminar in Afro American Literature	3 3
ENG 3048 Theories and Techniques	3
LAE 4360 Teaching English in Middle and High School	3
TSL 4345 Methods for Teaching ESOL	3
ESE 4930 Instructional Seminar: Professional Theory and Legal Aspects of Education	3
Total	**15**

Spring Semester	**Sem.Hrs.**
ESE 4943 Student Teaching (12 hours)	12
Total	**120**

Bachelor of Science in Music Teacher Education (with a concentration in Voice OR Piano)

The Bachelors of Science in Music Teacher Education with a Concentration in Voice OR Piano degree is designed to prepare future music teacher educators with a previous background in vocal music or piano who will seek elementary, secondary, and college teaching positions. 131 Hours are required for the completion of this degree.

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir	1
MV_ xxxx Principal Applied Instrument	2
MUT 1121 Materials and Skills of Music I	3
MVK 1111 Class Piano I or (MUN 1450) Duo Piano Ensemble I	1
MUT 1241 Sight Singing and Ear Training I	1
EDG 1072 College Success & Beyond	3
Total	**17**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir	1
MV_ xxxx Principal Applied Instrument	2
MVK 1112 Class Piano II	1
MUT 1122Mate rials and Skills of Music II	3
MUT 1242 Sight Singing and Ear Training II	1
EDF 1005Introduction to the Teaching Profession w/Field Experience	3
Total	**17**

Freshman Year

Summer Semester	**Sem. Hrs.**
AMH 2091 Introduction to African American History or AFA 3104 African American Experience	3
PSY 2012 Introduction to Psychology	3
Elective Approved General Education list of courses	3
Total	**9**

Sophomore Year

Fall Semester	**Sem. Hrs.**
Science General Education	3
MUN 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir	1
MVX 232 Principal Applied Instrument	2
MUT 2126 Materials and Skills of Music III	3
MVK 2121 Class Piano III	1
MUT 1246 Sight Singing and Ear Training III	1
EDF 2085 Introduction to Diversity for Educators	3
Total	**14**

Sophomore Year

Spring Semester	**Sem.Hrs**.
Natural Science from approved list	3
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band Concert Choir	1
MV_ 232_ Principal Applied Instrument	2
MUT 2127 Materials and Skills of Music IV	3
MVK 2122 Class Piano IV	1
MUE 2412 Percussion Techniques	1
MUT 2247 Sight Singing and Ear Training IV	1
EME 2040 Introduction to Technology for Educators	3
Total	**15**

Junior Year

Fall Semester	**Sem.Hrs.**
EDF 3430 Measurement & Evaluation in Human Growth	3
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir	1

MVX 33xx Principal Applied Instrument (Recital)	2
MUE 3311 Public School Music I	3
MUH 3211 Music History I	3
MUE 2450 Woodwind Techniques I	1
MUE 2460 Brass Techniques I	1
Total	**14**

Junior Year

Spring Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir	1
MVX 33xx Principal Applied Instrument (Recital)	2
MUG 3201 Choral Conducting	3
MUG 4101Conducting I	3
MUN 3512 Accompanying I	1
MUE 4094 Public School Music II	3
MUH 3212 Music History II	3
Total	**16**

Junior Year

Summer Semester	**Sem.Hrs.**
Elective from the approved list	3
Total	**3**

Senior Year

Fall Semester	**Sem. Hrs.**
ESE 4930 Instructional Seminar in Secondary Education	3
TSL 4081 ESOL Survey of Strategies for Learning	3
MUN xxxxLarge Ensemble (Marching Band, Symphonic Band, Concert Choir	
MUE 1440 String Techniques	1
MUE 4331 Choir Techniques	3
RED 3333 Teaching Reading in the Content Area	3
Total	**14**

Senior Year

Spring Semester	**Sem.Hrs.**
ESE 4943 Student Teaching	12
Total	**131**

Bachelor of Science in Music Teacher Education (Concentration in Wind or Percussion)

The Bachelors of Science in Music Teacher Education with a Concentration in Wind or Percussion degree is designed to prepare future music teacher educators with a previous background in instrumental music for elementary, secondary, and college teaching positions. 134 Hours are required for the completion of this degree.

Freshman Year

Fall Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	1
MV_ 13xx Principle Applied Instrument	2
MUT 1121 Materials and Skills of Music I	3
ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MVK 1111 Class Piano I OR (MUN 1450) Duo Piano Ensemble I	1
MUT 1241 Sight Singing and Ear Training I	1
EDG 1072 College Success & Beyond	3
Total	**17**

Freshman Year

Spring Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	1
MV_ 13xx Principal Applied Instrument	2
MUT 1122 Materials and Skills of Music II	3
MVK 1112 Class Piano II (non-piano majors)	1
ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUT 1242 Sight Singing and Ear Training II	1
EDF 1005 Introduction to the Teaching Profession/ w/Field Exp.	3
Total	**17**

Freshman Year

Summer Semester	**Sem.Hrs.**
AMH 2081 African American History OR	3
(AFA 3104) The African American Experience	3
PSY 2012 Introduction to Psychology Elective	3
Approved General Education List of Courses	3
Total	**9**

Sophomore Year

Fall Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	3
MV_ 232x Principal Applied Instrument	2
MUT 2126 Materials and Skills of Music III	3
Natural Sciences courses from the approved list	3
MUE 4331 Choral Techniques	1
MUE 2460 Brass Techniques	1
MVK 2121 Class Piano III OR (MUN 3453) Duo Piano Ensemble	3
MUT 1246 Sight Singing and Ear Training III	1
EDF 2085 Teaching Diversity for Educators w/Field Exp.	3
Total	**16**

Sophomore Year

Spring Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	1
MV_ 232x Principal Applied Instrument	2
MUT 2122 Materials and Skills of Music IV	3
Natural Sciences courses from the approved list	
MUE 2412 Percussion Techniques	1

MUE 3461 Brass Techniques II	1
MUT 2247 Sight Singing and Ear Training IV	1
MVK 2122 Class Piano IV or (MUN 4454) Due Piano Ensemble IV	1
EME 2040 Introduction to Educational Technology	3
Total	**16**

Junior Year

Fall Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	1
MV_ 33Xx Principal Applied Instrument	2
MUE 1440 String Techniques	1
MUE 2450 Woodwind Techniques	1
MUE 3211 History of Music I	3
MUE 3311 Public School Music I	3
EDF 3430 Measurement & Evaluation	3
Total	**14**

Junior Year

Spring Semester	**Sem.Hrs.**
MUS 1010 Student Recitals	0
MUN xxxx Large Ensemble (Marching Band, Symphonic Band, Concert Choir)	1
MV_ 33Xx Principal Applied Instrument	2
MUE 3451 Woodwind Techniques II	1
MUH 3212 History of Music II	3
MUE 4480 Instrumental Methods	2
MUE 4094 Public School Music II	3
MUG 4104 Conducting I	3
Elective from the approved list	3
Total	**15**

Junior Year

Summer Semester	**Sem.Hrs.**
Elective from the approved list	3
Total	**3**

Senior Year

Fall Semester	**Sem.Hrs.**
MUG 4102 Conducting II	3
MUE 4332 Instrumental Methods	3
ESE 4930 Instructional Seminar in Secondary Education	3
TSL 4081 Survey of Strategies for Learning	3
RED 3333 Teaching Reading in the Content Area	3
Total	**15**

Senior Year

Spring Semester	**Sem.Hrs.**
ESE 4943 Student Teaching	12
Total	**134**

Senior Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program) the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. Such a procedure must begin with the recommendation of the appropriate applied teacher followed by the approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The senior recital must be presented at least one semester prior to student teaching.

For piano majors up to one-third of the senior recital may be performed on the secondary instrument with the approval and supervision of both the piano and secondary instrument instructors.

Course Descriptions

MUE 1440 String Techniques (1) Standard orchestral string instruments; correct fingering methods; bowing and tone production; methods and materials of teaching string instruments.

MUE 2412 Introduction to Wind and Percussion Instruments (1) Fundamental instrumental techniques for voice, piano and organ majors.

MUE 3210 Public School Music (3) Prereq: junior standing for non-music majors. Development of music potential in children, grades 1-6; care of child's voice; study of children's songs; music reading; creative rhythm.

MUE 3311 Public School Music (3) Prereq: junior standing. Philosophical and psychological aspect of music education; music major's role in teaching and super-general music and extracurricular activities on elementary school level.

MUE 2450, 3451 Woodwind Techniques I, II (1-1) Instruments of woodwind sections in orchestra and band; principles governing embouchure, fingering, and tone production.

MUE 2460, 3461 Brass Techniques I II (1-1) Instruments of the brasswind sections in orchestra and band; principles governing embouchure, fingering, and tone production.

MUE 2470 Percussion Techniques (1) Lab with emphasis of stick control, reaching methods, tone production, care and repair of percussion instruments, mallet instruments, traps, timpani, and snare drum.

MUE 4331 Choral Techniques (1/3) Organization, administration, and financing of choral organizations teaching methods; study materials, and rehearsal techniques; choral literature; building enrollment and programming of literature.

MUE 4480, 4333 Instrumental Methods I and II (2,2) Prereq: Junior standing. Organizing and financing public school bands and orchestras; preparation and programming festival concerts; band pageantry, marching techniques, instrument testing; rehearsal techniques; group instruction methods, materials.

Bachelor of Science Degree in Social Science Education (Concentration in History)

Fall Semester

Freshman Year	**Sem. Hrs.**
ENC 1101 Freshman Composition l	3
MGF 1106 Liberal Arts Math l	3
EDG 1072 College Success and Beyond	3
AMH 2010 U.S. History to 1865	3
AMH 2091 Introduction to African American History or AFA 3104	3

African American Experience 3
Total **15**

Spring Semester
Freshman Year **Sem. Hrs.**
WOH 1012 World History to 1500 3
EDF 1005 Introduction to the Teaching Profession w/Field Ex. 3
ENC 1102 Freshman Composition II 3
MGF 1107 Liberal Arts Math II 3
POS 2041 American National Government 3
Total **15**

Fall Semester
Sophomore Year **Sem.Hrs.**
BSC 1005 or 1010c Biological Science, OR 3
BOT 1010 Botany, OR
HUN 2401 Human Nutrition, OR
PSC 1121c Introduction to Physical Science OR
AST 1002 Astronomy OR
EVY 2570 Principles of Environmental Entomology OR
EVS 4007 Introduction to Environmental Sciences OR
ISC 1006 Wide World of Science I OR
ISC 1007 Wide World of Science II 3
LIT 2110 Introduction to Literature l 3
EME 2040 Introduction to Technology for Educators 3
SPC 2600 Public Speaking OR HSC 1100 Health and Modern Living 3
GEA 2000 World Regional Geography 3
Total **15**

Spring Semester
Sophomore Year **Sem. Hrs**
AMH 2020 US History 1865 to Pres. 3

GEA 2000 World Regional Geography 3
ECO 2013 Principles of Economics l 3
POS 2112 State and Local Government 3
EDF 2085 Introduction to Diversity for Educators w/Field Exp. 3
Total **15**

Fall Semester
Junior Year **Sem. Hrs**
WOH 1022 World History 1500-Pres. 3
HIS 3104 Nature of History 3
HIS 3150 Historiography 3
GEO 3421 Cultural Geography 3
EDF 3210 Psychology in Education OR 3
EDF 3135 The Adolescent Learner
Total **15**

Spring Semester
Junior Year **Sem. Hrs.**
EDF 3430 Measurement and Evaluation 3
RED 3333 Teaching Reading in Content Areas 3
AMH 4202 20th Century U.S. History 3
TSL 4081 ESOL Survey Strategies 3
AMH 4420 History of Florida 3
Total **15**

Fall Semester
Senior Year **Sem. Hrs**
AFH 4100 History of Africa I OR 3
AFH 4200 History of Africa II
LAH 4130 Latin American History 3
ESE 3341 Theory & Practice in the Secondary School 3
AMH 3571 African American History I 3
AMH 3572 African American History II 3
EUH Elective European History 3
SSE 3360 Teaching Social Studies 3
ESE 4930 Instructional Seminar In Secondary Education 3
Total **18**

Spring Semester
Senior Year **Sem.Hrs**
ESE 4943 Student Teaching 12
Total **120**

Bachelor of Science Degree in Social Science Education (Concentration in Political Science)
Fall Semester
Freshman Year **Sem.Hrs.**
ENC 1101 Freshman Composition l 3
MGF 1106 Liberal Arts Math l 3
EDG 1072 College Success and Beyond 3
AMH 2010 U.S. History to 1865 3
AMH 2091 Introduction to African American History OR AFA 3104 3
African American Experience 3
Total **15**

Spring Semester
Freshman Year **Sem. Hrs.**
WOH 1012 World History to 1500 3
EDF 1005 Introduction to the Teaching Profession w/Field Exp. 3
ENC 1102 Freshman Composition II 3
MGF 1107 Liberal Arts Math ll 3
POS 2041American National Government 3
Total **15**

Fall Semester
Sophomore Year **Sem. Hrs.**
BSC 1005 or 1010c Biological Science, OR 3
BOT 1010 Botany, OR HUN 2401 Nutrition, OR
PSC 1121c Introduction to Physical Science OR
AST 1002 Astronomy OR
EVY 2570 Principles of Environmental Entomology
OR EVS 4007 Introduction to Environmental Sciences
OR ISC 1006 Wide World of Science I
OR ISC 1007 Wide World of Science II
LIT 2110 Introduction to Literature l 3
EME 2040 Introduction To Technology for Educators 3
SPC 2600 Public Speaking Sem. Hrs.

HSC 1100 Health Modern Living	3
GEA 2000 World Regional Geography	3
Total	**15**

Spring Semester

Sophomore Year	**Sem. Hrs.**
AMH 2020 U.S. History 1865 to Present	3
CPO 2002 Comparative Government	3
ECO 2013 Principles of Economics l	3
POS 2112 State and Local Government	3
POS 2001 Introduction to Political Science	3
Total	**15**

Fall Semester

Junior Year	**Sem. Hrs**
EDF 2085 Introduction to Diversity for Educators	3
POS 3603 American Constitutional Law	3
GEO 3421 Cultural Geography	3
GEA 3600 Geography of Africa	3
EDF 3210 Psychology in Education OR	3
EDF 3135 The Adolescent Learner OR	3
EDP 2002 Educational Psychology	
Total	**15**

Spring Semester

Junior Year	**Sem. Hrs.**
EDF 3430 Measurement and Evaluation	3
RED 3333 Teaching Reading in Content Areas	3
SSE 3360 Teaching Social Studies	3
TSL 4081 ESOL Survey. Strategies	3
AMH 4420 History of Florida	3
Total	**15**

Fall Semester

Senior Year	**Sem. Hrs**
POT 4064 Contemporary Political Ideologies	3
ESE 3341 Theory & Practice in the Secondary School	3
POS 4936 Seminar in Political Science	3
POS 4910 Senior Research Seminar	3
POS 4703 Scope & Methods	3
ESE 4930 Instructional Seminar In Secondary Education	3
Total	**18**

Spring Semester

Senior Year	**Sem. Hours**
ESE 4943 Student Teaching	12
Total	**120**

Bachelor of Science in Technology Education

Freshman Year

Fall Semester	**Sem.Hrs**
BSC 1005 Biological Science/with Lab	4
ENC 1101 Freshman Communication Skills I	3
ETE 1049 Introduction to Teaching Technology Education	3
ETE 2210C Introduction to STEM Education	3
EDG 1072 College Success and Beyond	3
MFG 1106 Liberal Arts Math I	3
Total	**19**

Freshman Year

Spring Semester	**Sem.Hrs.**
ENC 1102 Freshman Communication Skills II	3
GRA 1333 Graphic Arts Materials & Processes	3
MGF 1107 Liberal Arts Math II	3
HSC 1100 Health for Modern Living OR	3
HSC 3107 Healthy Lifestyles for Students	
AMH 2091 Introduction to African American History	3
EDF 1005 Introduction to the Teaching Profession w/Field Exp	3
Total	**18**

Sophomore Year

Fall Semester	**Sem.Hrs.**
AMH 2020 U.S. History 1865 to Present	3
ECO 2013 Principles of Economics I	3
ETE 3402C Processes and Testing of Engineering Materials	3
PSY 2012 Introduction to Psychology	3
PSC 1121 Introduction to Physical Scence w/L	4
Total	**16**

Sophomore Year

Spring Semester	**Sem.Hrs.**
EME 2040 Introduction to Technology for Educators	3
ETE 3444C Technical Drawing and Design	3
DEP 2004 Human Growth & Development	3
ETE 3434C Electricity/Electronics Technologies	3
EDF 2085 Introduction to Diversity for Educators	3
Total	**15**

Junior Year

Fall Semester	**Sem. Hrs.**
ETE 3474C Transportation Systems	3
MAE 1920 Professional Development 1	1
RED 3333 Teaching Reading in Content Area	3
ESE 3341 Theory and Practice Secondary Education	
ETE 4414C Information Technologies	3
Total	**13**

Junior Year

Spring Semester	**Sem.Hrs.**
EDF 3430 Measurement & Evaluation of Educational Growth	3
ETE 3435C Energy and Power	3
ETE 3463C Bio-Related Technologies	3
ETE 3424C Construction Practices	3

Total	**12**

Senior Year

Fall Semester	**Sem.Hrs.**
ETE 4344 Instructional Methods in Technology Education	3
	Sem. Hrs
ETE 4476C Manufacturing Enterprises	3
ETE 3454 Special Topics in Engineering & Design	3
TSL 4081 ESOL Strategies for Instruction	3
ETE 4475C Introduction to Robotics and Automation	3
Total	**15**

Senior Year

Spring Semester	ESE 4943
Student Teaching in Technology Education	12
Total	**120**

Recommended Courses: SPN 1100 Elementary Spanish I and SPN 1101 Spanish II

Course Descriptions

ETE 1049 Introduction to Teaching Technology Education This course provides the opportunity for each Technology Education student to begin the professional development phase as it relates to the philosophy along with the theory and practice of Technology Education. Modeling activities will connect curriculum and pedagogical methods within lecture and laboratory environments. Students will also conduct 15 hours of selected 6-12 school observations. 3 Units – Lecture/Lab (Freshman standing)

ETE 2210C Introduction to STEM Education

This laboratory-based course is an introduction to technologies that can be implemented in K-6 classrooms. The course is designed for students who are elementary education majors as well as technology education majors. The overarching goals of the course are to offer each student the opportunity to design and build teaching/learning activities that integrate concepts related to Science, Technology Engineering and Mathematics (STEM) principles and standards, communication, reading literacy, and social science, with technology. Course Component Lecture/Laboratory Required. This course should be taken the same semester as EIA 1049 (Intro to Teaching Tech Ed) 3 Units – Lecture/Lab (Freshman standing)

ETE 3402C Processing and Testing of Engineering Materials in Technology Education

This course is an introduction to the diverse engineering materials used in technology; specifically, ceramics, polymers (woods, plastics, etc.), and metals. Lecture and laboratory exercises will provide students with a comprehensive base of knowledge in relation to physical hands-on experience with materials, tools and machines. This course will also be the catalyst for future student endeavors that involve the safe use and production of engineering materials within a 6-12 technology education classroom. 3 Units – Lecture/Lab (Freshman/Sophomore standing)

ETE 3237C Transportation Systems

This course focuses on developing a basic understanding of transportation systems that include: land, water, air and space transportation. Students will engage in design processes and problem solving laboratory exercises to explore the diverse components of transportation systems and subsystems to be taught in technology education classrooms. **Prerequisites**: ETE 1049 (Intro to Teaching Tech Ed); ETE 2210C; ETE 3402C, 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 3260C Construction Practices

This course focuses on contemporary practices in the Construction Industry. Emphasis will be placed on residential, commercial, and industrial construction. Additionally, students will be provided with instructional methods to be able to conduct a construction and structural design component in 6-12 Technology Education classrooms. **Prerequisites**: EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 3444C Technical Drawing and Design

This course will focus on basic engineering drawing skills including freehand drawing, orthographic, projection and basic descriptive geometry, axonometric drawings, and developments. Emphasis will be placed on documentation of design work using manual drafting; computer aided drafting, and freehand sketching. Students will be provided with instructional methods to be able to conduct a technical drawing component in 6-12 Technology Education classrooms **Prerequisites:** EETE1049 (Intro to Teaching Tech Ed.), 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 3454 Special Topics in Engineering and Design

Research and/or lab experiences in development of Engineering and Design practices in the Technology Education classroom. Experiences may be in-or out-of-class at the discretion of the Professor/Instructor. **Prerequisites**: Permission by the Professor/Department Chair. Required Elective Special Topics Core (Senior Standing)

ETE 3463C Bio-Related Technologies for Technology Educators

This course is designed to provide students an overview and practical lab experience in Bio and Medical Technologies. Additionally, students will explore pedagogical strategies to assist in their future classrooms. Historical, contemporary, and future trends in Bio and Medical Technologies will be investigated. Related activities will give the student an opportunity to design, produce, test and present experiments and projects within this content area that can be used in a technology education classroom Prerequisites: EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing), 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 3434 Electricity/Electronics Technologies

Content in this course will provide students with a foundation of knowledge and technically oriented experiences in the field of electronics technology. This course will also focus on the demonstration of technology tools, machines and instruments including processes of materials used in business and industry. **Prerequisites:** EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 3435C Energy and Power in Technology Education

This course will focus on the technological processes surrounding energy and power. Historical and contemporary forms of energy as they are related to science and mathematics will be explored and then tested within laboratory activities. Special emphasis will be place on alternative energy sources such as wind and solar energy in addition to global efforts regarding sustainable energy will be examined. Students will be provided with instructional methods to

be able to conduct an energy and power component in 6-12 Technology Education classrooms. **Prerequisites**: EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 4414C Information Systems in Technology Education
This course will focus on content and methods of teaching information systems; past, present, and future communication technologies, processes, and influences, of drafting, printing and digital photography and video, and the Internet on humans and society. Students will be provided with instructional methods to be able to conduct an information systems component in 6-12 Technology Education classrooms. **Prerequisites:** EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 4475C Introduction to Robotics and Automation for Technology Educators
This course will allow the student to investigate both stationary and agile robotics as they apply to Technology Education. Students will investigate several types of robotic processes to design robots and robotic systems. Students will develop units of instruction related to robotics and automation systems. Prerequisites: **Prerequisites**: EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

ETE 4344C Instructional Methods in Tech Ed
This course will address philosophical issues, psychological issues relating to pedagogy, curriculum development and lesson plan design as well as instructional methods used in the Technology Education classroom. Emphasis will be placed on lesson delivery, classroom management, and teaching and learning styles. All students will participate in instructional activities at selected K-12 schools for 15 hours of field experience. **Prerequisites:** Senior Standing

ETE 4676C Manufacturing Enterprises
This course will explore all aspects of the manufacturing and design process. Through inception to production, the student will use all facets of the design process to actually produce a product through a study of basic concepts of manufacturing and engineering technologies by experiences in forming, separating, combining, assembling and finishing materials used in the production of a manufactured product. Additionally, the development of a company portfolio and a product will be produced and sold to faculty, staff, students and family. Students will be provided with instructional methods to be able to conduct a manufacturing enterprise component in 6-12 Technology Education classrooms. **Prerequisites**: EETE1049 (Intro to Teaching Tech Ed.), ETE 2210C; ETE 3402C 3 Units – Lecture/Lab (Sophomore/Junior standing)

Bachelor of Science in Mathematics Education
(See the Program Coordinator for Fall, 2015 Curriculum Guide)

Freshman Year

Fall Semester	**Sem.Hrs.**
MAC 2311 Calculus 1	4
ENC 1101 Freshman Communication Skills I	3
MAD 2120 Finite Mathematics	3
BSC 1005 Biological Science with Lab	4
EDG 1072 College Success and Beyond	3
Total	**17**

Freshman Year

Spring Semester	**Sem.Hrs.**
AMH 2020 U.S. History 1865 to Present	3
MAC 2312 Calculus II	4
ENC 1102 Freshman Communication Skills II	3
MAE 1920 Professional Dvelopment I	1
PSC 1121/L Physical Science and Lab	4
EDF 1005 Introduction to the Teaching Profession w/Field Exp	3
Total	**18**

Sophomore Year

Fall Semester	**Sem.Hrs.**
MAC 2313 Calculus III	5
STA 2023 Probability and Statistics I	3
EME 2040 Introduction to Technology for Educators	3
PHI 2010 Introduction to Philosophy	3
ETE 2210C Introduction to STEM Education	3
Total	**17**

Sophomore Year

Spring Semester	**Sem.Hrs.**
MHF 4202 Foundation of Mathematics	3
EDF 2085 Introduction to Diversity for Educators w/Field Exp	3
PSY 2012 General Psychology	3
DEP 200 Human Growth and Development	3
MAE 2920 Professional Development II	1
GLY 2001 Introduction to Earth & Space Science	3
Total	**16**

Junior Year

Fall Semester	**Sem Hrs**.
AMH 2091 Introduction to African American History	3
MAS 3105 Linear Algebra	3
MAP 4103 Mathematical Modeling	3
ESE 3341 Theory & Practice of Teaching Secondary Schools	3
SPC 2608 Public Speaking	3
Total	**15**

Junior Year

Spring Semester	**Sem.Hrs.**
MAS 4301 Abstract Algebra I	3
EDF 3430 Measurement and Evaluation for Educational Growth	3
MAE 4360 Teaching Math in Middle & Secondary Schools	4
RED 3333 Teaching Reading in Secondary Schools	3
Total	**13**

Senior Year

Fall Semester	**Sem. Hrs.**
MTG 421 Modern Pure Geometry (Fall Only)	3
MAS 4203 Introduction to Number Theory	3
Teaching ESOL	3

ESE 4930 Instructional Seminar in Secondary Education	3
Total	**12**

Senior Year

Spring Semester	**Sem. Hrs.**
ESE 4943 Student Teaching in Secondary Schools	12
Total Hours	**120**

Bachelor of Science in Science Education (Concentration in Physics Education)
(See the Program Coordinator for Fall, 2015 Curriculum Guide)

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
MAC 2311 Calculus I	4
GLY 2001 Earth & Space Science	3
PHY 2048L General Physics I/Lab	4
EDF 1005 Introduction to the Teaching Prof. w/Field Exp	3
Total	**17**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
MAC 2312 Calculus II	4
EDG 1072 College Success and Beyond	3
PHY 2049L General Physics II/Lab	4
Total	**14**

Sophomore Year

Fall Semester	**Sem. Hrs.**
PHZ 3113 Mathematical Methods of Physics I	3
MAC 2313 Calculus III	4
CHM 1045L General Chemistry I/Lab	4
EDF 2085 Introduction to Diversity for Educators w/Field Exp.	3
EME 2040 Introduction to Technology for Educators	3
Total	**17**

Sophomore Year

Spring Semester	**Sem. Hrs.**
PHZ 3114 Mathematical Methods of Physics II	3
CHM 1046L General Chemistry II/Lab	4
AMH 2091 African American History **or**	3
AFA 3104 African American Experience	
DEP 2004 Human Growth and Development	3
Total	**13**

Junior Year

Fall Semester	**Sem. Hrs.**
CHM 3905 Junior Special Topics	1
PHY 3101 Modern Physics	3
PHY 3101L Modern Physics Lab	1
PHY 4221 Mechanics I	3
MAS 3105 Linear Algebra	3
TSL 4324 Instructional Survey for Teaching ESOL	3
SCE 3330 Teaching Science in High School	3
Total	**17**

Junior Year

Spring Semester	**Sem. Hrs.**
PHY 4323 Electromagnetism	3
RED 3333 Teaching Reading in Content Area	3
PHY 4222 Mechanics II	3
ESE 3341 Theory and Practice in the Secondary School	3
SPC 2600, 1050 Public Speaking **OR** Foundations of Speech	3
PHY 4604 Quantum Mechanics I	3
Total	**18**

Senior Year

Fall Semester	**Sem. Hrs.**
PHY 4324 Electromagnetism II	3
PHY 4605 Quantum Mechanics II	3
ESE 4930 Instructional Seminar in Secondary Education	3
EDF 3430 Measurement and Evaluation of Educational Growth	3
Total	**12**

Senior Year

Spring Semester	**Sem. Hrs.**
ESE 4943 Student Teaching in the High School	12
Total	**120**

Bachelor of Science in Science Education (Concentration in Chemistry Education)
(See the Program Coordinator for Fall, 2015 Curriculum Guide)

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry I Lab	1
CHM 1901 Freshmen Special Topics	1
EDG 1072 College Success and Beyond	3
MAC 2311 Calculus I	4
PSY 2012 Introduction to Psychology	3
Total	**18**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
CHM1046 General Chemistry II	3
CHM1046L General Chemistry II Lab	1
AMH 2020 U.S. History 1865 to Present	3
EDF 1005 Introduction to the Teaching Prof. w/ Field Exp	3
MAC 2312 Calculus II	4
Total	**17**

Sophomore Year

Fall Semester	**Sem. Hrs.**
CHM 2903 Sophomore Special Topics	1
CHM 2210 Organic Chemistry I	3

CHM 2210L Organic Chemistry I Lab	1
BSC 1010 General Biology I w/Lab	4
GLY 2001 Introduction to Earth/Space Science	3
EME 2040 Introduction to Technology for Educators	3
ETE 2210C Intro to STEM Education	3
Total	**18**

Sophomore Year

Spring Semester	**Sem. Hrs.**
CHM 2904 Sophomore Special Topics	1
CHM 2211 Organic Chemistry II	3
CHM 2211L Organic Chemistry II Lab	1
AMH 2091 African American History	3
EDF 2085 Introduction to Diversitynfor Educators	3
PHY 2053 College Physics I/Lab	4
Total	**15**

Junior Year

Fall Semester	**Sem. Hrs.**
EDF 3135 The Adolescent Learner	3
CHM 3905 Junior Special Topics	1
SCE 3330 Teaching Science in High School	3
SPC 2600, Public Speaking **OR** SPC 1050 Foundations of Speech	3
PHY 2049 General Physics Iw/ Lab	4
Total	**14**

Junior Year

Spring Semester	**Sem. Hrs.**
RED 3333 Reading in Content Area	3
CHM 3120, Quantitative Analysis Chemistry CHEM3120L w/Lab	4
ESE 3341 Theory & Practice Teaching Sec Schools	3
EDF 3430 Measurement & Evaluation of Educational Growth	3
Total	**13**

Senior Year

Fall Semester	**Sem. Hrs.**
CHM 4410L Physical Chemistry I w/Lab 4101L	4
TSL 4081 ESOL Strategies for Instruction	3
ESE 4930 Instructional Seminar in Secondary Education	3
CHM 4900 Short Courses in Chemistry	2
MAE 3920 Professional Development III	1
Total	**13**

Senior Year

Spring Semester	**Sem. Hrs.**
ESE 4943 Student Teaching in Secondary Schools	12
Total Hours	**120**

Bachelor of Science in Science Education (Concentration in Biology Education)
(See the Program Coordinator for Fall, 2015 Curriculum Guide)

Freshman Year

Fall Semester	**Sem. Hrs**
.ENC 1101 Freshman Communication Skills	3
BSC 1010 General Biology I Lecture	3
BSC 1010L General Biology I Lab	1
EDG 1072 College Success and Beyond	3
MAC 1105 College Algebra	3
PSY 2012 Introduction to Psychology	3
Total	**16**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
MAC 2311 Calculus I	4
BSC 1011 General Biology II Lecture	3
BSC 1011L General Biology II Lab	1
EDF 1005 Introduction to the Teaching Prof Field Exp	3
ETE 2210 Intro to Stem Education	3
Total	**17**

Sophomore Year

Fall Semester	**Sem. Hrs.**
GLY 2001 Introduction to Earth- Space Science	3
MAC 2312 Calculus II	4
EDF 2085 Introduction to Diversity for Educators w/ Field Exp	3
EME 2040 Introduction to Technology for Educators	3
CHM 1045 General Chemistry w Lab	4
Total	**17**

Sophomore Year

Spring Semester	**Sem. Hrs.**
PCB 3063C Genetics	4
AMH 2091 African American History	3
PCB 2033 Ecology	3
SPC 2608,1050 Public Speaking or Foundations of Speech	3
Total	**13**

Junior Year

Fall	**Sem. Hrs.**
PCB 3733 Vertebrate Physiology Lecture	3
PCB 3733 Vertebrate Physiology Lab	1
SCE 3330 Teaching Science in High School	3
ESE 3341 Theory and Practice of Teaching Secondary Schools	3
EDF 3430 Measurement & Evaluation	3
MAC 2313 Calculus III	4
Total	**17**

Junior Year

Spring Semester	**Sem. Hrs.**
ZOO 4513 Developmental Anatomy	3
BOT 3303/ Plant Anatomy 3	3
TSL 4324 Instructional Survey for Teaching ESOL	3
SCE 3330 Teaching Science in High School	3
ESE 3341 Theory and Practice of Teaching	3
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
MCB 3005C01 Microbiology	4
RED 333 Teaching Reading in Secondary Schools	3
ESE 4930 Instructional Seminar in Secondary Education	3
EDF 3135 The Adolescent Learner	3
Total	**13**

Senior Year

Spring Semester	**Sem. Hrs.**
ESE 4943 Student Teaching in Secondary Schools	12
Total	**120**

Junior Year

Spring Semester	**Sem. Hrs.**
ZOO 4513 Developmental Anatomy	3
BOT 3303/2313vPlant Anatomy/ Morphology	3
TSL 4324 Instructional Survey for Teaching ESOL	3
SCE 3330 Teaching Science in High School	3
ESE 3341 Theory and Practice of Teaching	3
Total	**15**

Faculty

Professors: Ellis, Rufus;
Associate Professors: Ervin, Charles; Kelley, Bernadette; Stewart, Endya; Wallace Renee (Chair)
Assistant Professor: Davis, Edith; Pitts Bannister, Vanessa; White, David
Visiting Assistant Professor: Moore-Clemons, Kristal; Thomas, Nicholas
Instructor: Youmans, Patricia
Assistant In: Scruggs, Alice

Pre-Teacher Education Courses

The following three courses are required as part of the student's general education program and are incorporated into all teacher education programs throughout the state university system of Florida. Effective Fall 2015 (Name Change Only)

	Sem. Hrs.
*EDF 1005 Introduction to the Teaching Profession w/Field Exp.	3
*EDF 2085 Introduction to Diversity for Educators w/Field Experience	3
EME 2040 Introduction to Technology for Educators	3

*Background check with the Leon County school district is required. The cost is approximately $100.00.

Professional Education Core Courses

The professional core consists of twenty-seven (27) semester hours of coursework (excluding student teaching 12 semester hours) which meet the general professional education requirements for initial teacher certification in the state of Florida. Specific programs may have additional requirements. The generalized professional core is as follows:

	Sem. Hrs.
EDG 1072 College Success and Beyond	3
EDF 3135 The Adolescent Learner OR	3
EDF 3210 Psychology in Education	
DEP 2004 Human Growth and Development OR	3
EDP 2002 Educational Psychology	3
ESE 3341 Theory and Practice of Teaching in Secondary Schools	3
EDF 3430 Measurement and Evaluation of Educational Growth	3
RED 3333 Reading in the Content Area.	3
ESE 4930 Seminar in Secondary Education	3
XXXX Methods of Teaching (respective content areas)	3
TSL 4081 Survey of Strategies for Instruction	3
ESE 4943 Student Teaching	12
Electives in Education	
EDG 3302 Professional Development for Pre-service Teachers	3
EME 4400 Computer Applications in Education (Prerequisite: EME 2040)	3
EDF 3512 History and Philosophy of Education	3
EDF 3632 Sociological Foundations of Education	3
EME 4621 Introduction to Instructional Technology	3
EEX 4010C Introduction to Education of Exceptional Children OR EDG 4931 Seminar in Special Topics OR a second course in foundations of education as listed above OR a "special methods" course at a different level or an additional course in instructional technology	

Each student must take the appropriate one of the following discipline-related methods course:

	Sem. Hrs.
LAE 4360 Teaching of English in High School	3
MAE 4331 Teaching of Mathematics in the Secondary School	4
SCE 3330 Teaching of Science in High School.	3
SSE 3360 Teaching Social Studies in High School	3

Course Descriptions

EDF 1005 Introduction to the Teaching Profession w/Field Experience (3) An introductory overview of the history and development of the American education system from preschool to higher education; philosophies of education underlying the origin and development of significant educational products and processes will be evaluated. Additionally, the social, economic, political, cultural and legal influences mediating the school and the society will be presented. The role of the teacher, the profession and processes will be reviewed.

EDF 3135 The Adolescent Learner (3) This course is an examination of adolescence as a period of transition in physical, emotional, socio-personal and intellectual development; emphasis on fostering positive growth.

EDF 3210 Psychology in Education (3) Examination of various theories of psychology and learning applied to education; implications of such theories for teaching/learning activities.

EDF 3430 Measurement and Evaluation of Educational Growth (3) The emphasis is on developing evaluation procedures, recording procedures, reporting procedures and student records.

EDF 3512 History and Philosophy of Education (3) An introduction to the historical context of significant educational products and processes and the philosophies of education consonant with them are the foci.

EDF 3632 Sociological Foundations of Education (3) An examination of the cultural influences mediating school, society and the role of the teacher in the process of education.

EDF 4686 School-Community Relations (3) Factors in community which influence educational effectiveness; community as a resource center for teaching; teacher's responsibility for providing responsible leadership in community and developing lay participation and community coordination.

EDF 4780 The Public School Teacher and the Law (3) A survey of the views from the vantage point of public school teachers, both basic and day-to-day legal problems involving public education is examined.

EDF 2085 Teaching Diversity for Educators w/Field Experience (3) Designed to enable the student to learn and work effectively in multi-racial, multi-cultural, and multi-ethnic communities. Through the examination of the self, communication skills, and social history of issues affecting human relations, the role of the teacher will be reviewed.

EDG 1072 College Success and Beyond (3) This course will assist all new college students to acquire essential skills needed and the knowledge to promote academic success. Major areas of focus include: fundamental competencies essential in college, enrichment skills, college expectations, goals, preparing for success in how you learn, note-taking skills, campus resources, and critical thinking skills.

EDG 3733 Teaching Hispanic Culture (3) A study of the interdependent living of Hispanic America. Major contributions of Hispanics from an eclectic point of view; cultural, geographical, literary, philosophical and artistic manifestations of Hispanic contributions are studied to enhance instructional pedagogy and increase the target population academic achievement.

EDG 3752 Bilingual Education Curriculum (3) Explores design of curriculum to accommodate needs of non-native English speakers; emphasis on providing basic skills to all students while tailoring curriculum to uniqueness of Spanish-background students.

EDG 4905 Directed Individual Study (1-6) Prereq: Consent of instructor. Intensive study of topics fitting a particular student's needs and interests.

EDG 4931 Seminar in Special Topics (3) Consideration of various topics in education, focusing on generic teaching skills. Includes review of areas covered on the Florida Teacher Certification Examination (Professional Education Subtest).

EME 2040 Introduction to Technology for Educators (3) Purposes: to enable students to use computers and related technology as tools both in their own work and in work as future teachers; to make them aware of the educational technology resources available to them and the impact of these resources on all aspects of education. Activities are designed to provide hands-on use of educational technology resources and to model how technology can make possible a non-traditional approach to teaching which stresses problem-solving and cooperative work.

EME 4400 Computer Applications in Education (3) Addresses various ways computers are used to support instructional functions and to teach computer literacy. Identification of education-related computer products, skills in word processing, grade keeping, test generation, and student record keeping. Overview of computer applications in special education. Review of techniques and products to teach computer literacy in schools.

EME 4402 Microcomputer Awareness (3) Provides overview of the microcomputer in education. Major components of educational microcomputer systems, their cost, and their uses; application of learning theories to the design of instructional learning systems; hands-on experience with various microcomputers.

EME 4411 BASIC Programming for Teachers (3) Skills in developing programming-based computer literacy courses for teachers; review of computer literacy requirements in public schools; programming skills and computer operations.

EME 4621 Introduction to Instructional Technology (3) Introduction to instructional technology in education, stressing concepts and skills using computer tools in the classroom are the foci of this course.

ESE 3341 Theory and Practice of Teaching in the Secondary School (3) Prereq: EDF 1005: EDF 3135 or EDF 3210 or DEP 2004 or EDP 2002,: and EME 2040. This course focuses upon the Florida Educator Accomplished Practices and is directly related to the implementation of major steps in the teaching process. This course includes a study of the basic methods, techniques and procedures for effective classroom instruction to include, a survey of classroom management techniques, school safety, professional ethics, and education law. Emphasizes recent development concerning curricular organizations and procedures; planning for teaching-construction of a master course plan, unit and lesson plan; and effective utilization of instructional resources and evaluative devices

ESE 4930 Instructional Seminar in Secondary Education (3) Prereq: (EDF 1005, EDF 3135 or EDF 3210 or DEP 2004 or EDP 2002, EME 2040, EDF 3430, ESE 3341) A capstone course for secondary education majors which focuses on implementation strategies for the Florida Educator Accomplished Practices, including classroom management, school safety, professional ethics, and education law.

ESE 4943 Student Teaching in the Secondary School (12) All course work must be completed prior to student teaching. This course provides teaching experience in a cooperating public secondary school. Grade is contingent on passing the Florida Teacher Certification Examination.

GLY 2001 Earth & Space Science (3) Integrated application of the scientific principles and theories in the study of the earth's building blocks, the earth's internal processes, the ocean, the earth's atmosphere, weather patterns, the solar system and beyond the solar system.

SCE 3330 Teaching Science in High School (3) This course provides instruction in the fundamental methods of science instruction, science concepts, scientific principles, theories, and best practices in science education at various educational levels to also include laboratory safety, and field clinical experiences.

TSL 4081 - ESOL Survey of Strategies for Instruction (3) This is a survey course designed to assist students in integrating the theories and principles of second language learning and applying them to classroom instruction. ESOL methodology and curriculum will be emphasized as they relate to current best practices in ESOL instruction.

Master's of Education Degree in Curriculum and Instruction

The master's degree program in Curriculum and Instruction (C&I) is designed to provide educators with hybrid (blended) courses that are structured to ensure that future candidates will study the philosophical and theoretical foundations of curriculum development while gaining an understanding of instructional strategies that best address the needs of a diverse student population. The program includes two areas of concentration: specialization in Instruction, Learning and Assessment, or Minority and Urban Education.
The program is uniquely designed to meet the needs of individuals with a variety of career goals that range from those who wish to serve as curriculum generalists or specialists, district curriculum coordinators, school administrators, and classroom teachers to those interested in serving as non-school based curriculum designers or curriculum evaluators.

The 30-credit hour program will employ a cohort model and may be completed in four semesters as a full-time student and six semesters as a part-time student. Candidates seeking admission into the M. Ed. C&I program must meet the School of Graduate Studies and Research admission requirements.

The degree does not lead to initial state certification.

Admissions Requirements
Students seeking admission to the Curriculum and Instruction program must meet the following minimum criteria prior to admission. This program does not lead to initial certification.

An applicant:

1. Must have earned a bachelor's degree from an accredited institution.
2. Must meet all of the requirements of both the university and the College of Education.
3. Take the Graduate Record Examination (GRE) and submit the official records of the score.
4. Three professional letters of reference (i.e. from former professors or employers) addressing the applicant's ability to succeed in a graduate program – ALL LETERS MUST BE ON COMPANY/ ORGANIZATION LETTERHEAD
5. A personal statement describing the applicant's desire to pursue a degree in curriculum and instruction

In order to graduate from the program, a candidate must have completed a minimum of thirty (30) semester hours in the following areas:

- Twelve (12) hours of Curriculum Foundations Core
- Eighteen (18) hours in a Specialization

Additionally, candidates must:

- Have a cumulative 3.0 GPA
- Pass the Master's Degree Comprehensive Examination
- Develop an Action Research Poster Presentation as part of the capstone experience

How to Apply
You must obtain an application from FAMU Graduate Studies and Research or you may obtain it online from the Web site .
You must submit the completed application form to Graduate Studies and Research along with an official copy of your GRE scores and an official transcript from all previous colleges/universities attended.

All other supporting documentation should also be sent to Graduate Studies AND send copies to the Department of Secondary Education, Technology Education and Foundations (DSETEF) at Florida A&M University. These items should include the following:

1) Three professional letters of reference on company/ organization letterhead addressing the applicant's ability to succeed in a graduate program
2) A personal statement describing the applicant's desire to pursue a degree in Curriculum and Instruction and career goal(s).
3) An unofficial copy of the applicant's GRE scores (fax, photo copy, or scan a copy of the scores you receive in the mail)

PLEASE SUBMIT AN APPLICATION TO GRADUATE STUDIES AND RESEARCH BEFORE SENDING ANY MATERIALS TO THE DSETF DEPARTMENT
PLEASE NOTE: ONLY COMPLETE APPLICATION FILES WILL BE CONSIDERED. It is your responsibility to confirm that all your materials have been received. You should check with the Graduate Studies and Research at 850-599-3505 and the Department of Secondary Education, Technology Education and Foundations at 850-599-3123 to confirm receipt of materials.

Application Deadlines
See School of Graduate Studies and Research http://www.famu.edu/index.cfm?graduatestudies&AdmissionsDeadlines

Funding
While graduate assistantships are the ideal source of funding in graduate school, financial resources are limited. Applicants may apply for funding through the College of Education. Applications may be picked up in person from the College of Education Office of the Dean. You must be a fully, regularly admitted student to receive this funding. Visit the Graduate Studies and Research Web site to search for other funding options. Applicants are also encouraged to search for GA positions in administrative offices around the university such as residence halls, Student Recreation Center/Campus Recreation, athletics, and other service offices.

Proposed sequenced course of study for all concentrations in the program.

Curriculum Foundations Core:

		Sem. Hrs.
EDG 6250	Curriculum Development: Theory & Practice	3
EDG 5791	Seminar in Multicultural Education	3
EDF 5481	Introduction to Educational Research	3
EDF 5443E	Assessment for Student Learning	3

Concentration (18 semester hours)
Instruction, Learning and Assessment (18 semester hours)

EDF 5603E	Instructional Design	3
EDF 5136E	Adolescent Psychology	3
EME 5053	Current Trends in Educational Technology	3
EDF XXXX	Learning Principles Applied to Instruction & Assessment	3
EDG XXXX	Politics and Curricular Trends	3

EDG XXXX	Instruction, learning and Assessment Internship	3

Minority and Urban Education (18 semester hours)

EDF XXXX	Minority and Urban Education Seminar	3
EDF XXXX	Power, Privilege, Diversity and Teaching	3
EDG XXXX	Culturally Responsive Strategies for Urban Schools	3
EDG XXXX	Race, Social Justice and the Curriculum	3
EDG XXXX	Student Learning Data in Diverse Contexts	3
EDF XXXX	Minority and Urban Education Internship	3
Total		**30**

Course Descriptions

EDG 6250 Curriculum Development; Theory and Practice
This course is designed to provide an overview of curriculum and development issues. Emphasis will be on the relationship between curriculum theories and instructional practice, interrelationships of curriculum design components and as a basis for decision making in providing leadership effective instructional programs.

EDG 5791 Seminar in Multicultural Education
This course is designed to facilitate teaching in a multicultural setting, emphasis will be on understanding the dynamics of culture, communication, inter/intra personal characteristics of students of color (SOC) and promoting effective interaction in the school and community.

EDF 5481 Introduction to Educational Research
Methodology of research in behavioral sciences, documentation, measurement, data analysis and reporting. Candidates evaluate existing research and design action research proposals.

EDF 5443E Assessment for Student Learning
This course is designed to investigate operational definitions and experiences in documentation and assessment in Pre-K -20 classrooms. Candidates will combine readings, analysis of experiences in learning environments and field work to develop effective student strategies.

EME 5285E Instructional Design (prerequisite: EDF 6250 Curriculum Development)
This course examines instructional design models, theories and their systematic application to effective instructional strategies, goals, and interventions.

EDF 5136E Adolescent Psychology
This course is designed to investigate the growth and development of adolescents. Emphasis on the learning experiences involved in the meaning of adolescence, the physical, social and psychological dimensions of adolescence, the theories of adolescence and social media implications.

EME 5053 Current Trends in Educational Technology
This course is designed to examine research in a variety of areas; instructional technology; selection, production and utilization of digital media; digital applications and curriculum; instructional systems design; media center organization and administration; media center materials; and organization of digital media.

EDF XXXX Learning Principles Applied to Instruction and Assessment (prerequisite: EDF 5443E Assessment for Student Learning)
This course is designed to examine developmental and learning theories and their implications for instruction, curriculum development and instruction.

EDF XXXX Politics and Curricular Trends
This course is designed to demonstrate through historical analysis the politics of curriculum and the relationships with social, cultural and economic policy issues. Exposure to individuals, events and theories are fundamental to understanding the curriculum policy, curriculum social movements, and political issues.

EDF XXXX Instruction, Learning and Assessment Internship (prerequisite: all specialization course work) Candidates participate in experiences that bridge the gap between theoretical studies of knowledge acquired in the classroom and practical application. Internship sites and field supervisors are selected and approved with the candidate's advisory committee to meet the educational and career goals of the candidate. This will be the capstone course for this specialization and, will involve the action plan research project and presentation, a face-to-face component and a poster presentation.

EDF XXXX Minority and Urban Education Seminar (prerequisite: EDG 5791 Seminar in Multicultural Education)
This course examines the state of urban education, urban schools, and contemporary urban life in America.

EDF XXXX Power, Privilege, Diversity and Teaching (prerequisite: EDG 5791 Seminar in Multicultural Education)
An overview of issues related to teaching students of color (SOC), examining the definition of power in the United States; exploring the dynamics of privilege; and their implications for developing diverse curriculum to increase effective teaching; understanding prejudice; exploring barriers to valuing diversity.

EDG XXXX Culturally Responsive Strategies for Urban Schools (prerequisite: EDG 5791 Seminar in Multicultural Education)
This course is designed to investigate the theory, research and practice of cultural learning styles of students of color (SOC). Emphasis is placed on the way culture influences learning and culturally responsive "best practice" methods of instruction, facilitation, coaching, and assessment that are utilized to effectively improve the quality of teaching, curriculum, and learning in urban schools.

EDG XXXX Race, Social Justice and the Curriculum (prerequisite: EDG 5791 Seminar in Multicultural Education)
A comprehensive investigation of inequality and social justice issues in American society. Emphasis on institutional hierarchies and systems of domination both, historical and current, based on race, ethnicity, sexual orientation, social class, gender, disability, age and interactions of social hierarchies.

EDG XXXX Student Learning Data in Diverse Contexts (prerequisite: EDF 5481 Introduction to Educational Research; EDF 5443 Assessment of Student Learning)
Using research-based strategies to focus on organization and development of instruction, curriculum development, instructional strategies to meet the needs of student of color (SOC) through differentiated instruction, and assessment techniques with emphasis on data-driven decision making.

EDF XXXX Minority and Urban Education Internship (prerequisite: all specialization course(s)
Candidates participate in experiences that bridge the gap between theoretical studies of knowledge acquired in the classroom and practical application. Internship sites and field supervisors are selected and approved the candidate's advisory committee to meet

the educational and career goals of the candidate. This will be the capstone course for this specialization and, will involve the action plan research project and presentation, a face-to-face component and a poster presentation.

College of Education, Department of Secondary Education, Technology Education & Foundations Professional Training Option (PTO)

The Professional Training Option (PTO) is an alternative certification program approved by the Florida Department of Education. This option is open to students majoring in areas other than education. Students receive pre-professional level training in the Florida Educator Accomplished Practices and participate in an integrated school-based observation. The PTO program is a pathway to prepare students majoring in a content area for temporary teacher certification in Florida for that content area. Professional teacher certification in Florida is attainable after a year of successful teaching in a Florida public school, passing scores on relevant exams in the Florida Teacher Certification Examination series, and other requirements as required by the State of Florida.

*A professional certificate is granted only after a candidate works with an employing school district to meet the requirements for teaching. (http://www.fldoe.org/edcert/mast_prof.asp)

General Requirements:

The following eligibility criteria will be considered to evaluate applications for aadmission into the PTO program:

* Complete the PTO Application.
- Major: Enrolled in a non-education degree program. • GPA: FAMU cumulative GPA of 2.50 or better, Subject Area GPA of 2.5 or better.
- Recommendation from advisor.
- Successful completion of Leon County background clearance; proof of health insurance and liability insurannce.

Completion Requirements:
The professional training option consists of six courses that meet professional teacher preparation coursework requirements, in consort with pre-professional level training in the Florida Educator Accomplished Practices. A successful completer will have their transcript endorsed with the statement: "Completion of FLDOE – approved Professional Training Option."

The PTO Completion Requirements include:
**• EDF 1005 Introduction to the Teaching Profession w/Field Experience*
- EME 2040 Introduction to Technology for Educators *
**• EDF 2085 Introduction to Diversity for Educators w/Field Experience* (fall and spring only)
- EDF 3430 Measurement and Evaluation and Human Growth
- RED 3333 Teaching Reading in the Content Area
**• ESE 3341 Theory and Practice in the Secondary School with field experience (fall and spring)

**Subject to enrollment

Additional criteria are required by the state of Florida for a temporary teaching certificate. Student candidates must contact the Florida Department of Education for specific criteria.

College of Law

The Florida A&M University College of Law offers both a full-time, three-year day program and a part-time, four-year evening program of study in Orlando, Florida. The part-time evening program is designed for particularly well-qualified and dedicated students who are unable to attend on a full-time basis and want to earn a law degree while working full-time.

The Law School offers a rigorous traditional curriculum of required and elective courses complemented by extensive skills training that includes intensive writing and clinical components. Students are introduced to emerging trends and developments in law as taught by exceptional full-time faculty and adjuncts.

Community service is an important facet of our educational program. The Florida A&M University College of Law serves the Orlando community by educating lawyers and future leaders to understand the value of helping those in need. Through a clinical program, law students provide pro bono legal services in Orlando while still in law school. In providing the legal services, law students gain valuable experience and training and at the same time, recognize the need for these services as they start to practice law throughout the state and nation.

Faculty

Professors: Abate, Randall; Abrams, Robert; Broussard, Patricia; Bullock, Joan; Cooper, Markita; Duncan, John; Griffin, Ronald; Henslee, William; Jones, Darryll K.; Jones, John Paul; Langston, Lundy; Levitt, Jeremy; Pernell, LeRoy; Reaves, Rhonda; Saleem, Omar

Associate Professors: Alford, Deleso; Boothe-Perry, Nicola; Brown, Jeffery; Cato, Rhoda; Cavazos, Ann Marie; Fineman, Jonathan; Grant, Joseph; Harvey, Cori; Jones, Yolanda; Nekheba, Nise; Persaud, Shiv; Reyes, Maritza; Smith, Jennifer; Taite, Phyllis

Assistant Professors: Randall, Tshaka

Instructors: Allen, Renee; Caussade Garcia, Eunice; Corker, Kristy D'Angelo; Dineen, Caroleen; Jackson, Alicia; Minarcin, Robert; Mitchell, Sr.,

Mitchell, Sr., Reginald; Olavarria, Rebecca; Perry, Beverly; Rasberry, Shenae; Ross, Lori Nazry; Walker, Tonya; Washington, KaJuel

Library Director: Jones, Yolanda

Admission Requirements and Procedures

The re-established College of Law admitted its first class of students in fall, 2002 with both an evening and day program. Applicants have the option of applying to one or both programs at the time of application.

1. All applicants for admission (except those admitted in the 3+3 program) must have a bachelor's degree from an accredited institution of higher education prior to enrollment. Two copies of an official transcript confirming the conferral of the bachelor's degree must be submitted to the College of Law on or before enrollment.

2. All applicants must submit a completed Application for Admission, along with a $33 non-refundable application fee.

3. All applicants must take the Law School Admission Test (LSAT) and are responsible for making their own arrangements to take the LSAT. For admission purposes, LSAT scores are valid for five (5) years from the test date.

4. All applicants must register for the Credential Assembly Service (CAS) and are responsible for making their own arrangements for submitting official transcripts of all undergraduate work to LSAC for evaluation. CAS information and registration materials may be obtained from Law School Admission Services, Box 2000, Newton, PA 18940, (215) 968-1001.

5. All applicants are required to submit a personal statement and two letters of recommendation. Rather than submit letters of recommendation with the application, applicants are encouraged to utilize the LSAC letter of recommendation service that is included in the CAS registration subscription.

For admission to the entering class, application materials will be accepted beginning October 1. Admissions decisions are made on a rolling basis.

Evaluation of Applications

Admission to the College of Law is competitive. Selection for admission is based on a thorough evaluation of all factors in an applicant's file. In reviewing the applications of individuals applying for admission to the College of Law, the Admissions Committee will evaluate the following factors:

- The applicant's score on the Law SchoolAdmission Test (LSAT);
- The applicant's cumulative undergraduate grade point average
- (UGPA);
- The applicant's writing ability as evidenced by the LSAT writing sample and the personal statement;
- The applicant's undergraduate (and graduate) institution and grade point average;
- The applicant's undergraduate (and graduate) major;
- The applicant's community or public service;
- The applicant's academic honors and other awards;
- The applicant's work experience;
- The applicant's extra-curricular activities;
- The applicant's letters of recommendation; and,
- The applicant's character and motivation.

Requirements for the J.D. Degree

To be eligible for the award of the Juris Doctor (J.D.) degree, a student must:

- Successfully complete at least three academic years of full-time study or at least four academic years of part-time study;
- Successfully complete all required courses;
- Successfully complete at least 90 semester credit hours of course work, 60 credits of which must have been completed at this law school;
- Satisfy all writing requirements;
- Earn a cumulative grade point average of not less than 2.00 for all courses taken; and,
- Be approved by the College of Law faculty.

The maximum period for a full-time law student to complete requirements for a J.D. degree is five years.

The maximum period for a part-time law student to complete requirements for a J.D. degree is six years.

Full-Time Program
First Year Required Courses

First year students are required to take the following courses in the sequence set forth below. Full-time students must enroll in day sections of required courses.

Fall Semester

Courses	**Credit Hours**
Civil Procedure I	3
Contracts II	3
Introduction to Analytical Skills I	0
Legal Methods I	3
Property I	3
Tort I	3
Total Credits	**15**

Spring Semester

Courses	**Credit Hours**
Civil Procedure II	3
Contracts II	3
Introduction to Analytical Skills II	0
Legal Methods II	2
Property II	2
Torts II	2
Constitutional Law I	3
Total Credits	**15**

Upper-Level required Courses

Courses	**Credit Hours**
Business Organizations	4
Constitutional Law II	3
Criminal Law	3
Evidence	4
Mission-Related Course	3
Professional Responsibility	2

Mission-Related Courses

Courses designated as mission-related will be taught in a manner that includes thematic coverage of issues central to the College of Law's mission, including, as appropriate, themes related to slavery and enslavement, colonization, segregation/apartheid, globalization/neo-colonization, and freedom movements (civil rights, human rights, women's rights).

The College of Law has designated the following courses as mission-related.

- Race and the Law
- Public International Law

Sequencing of Upper-Level Required Courses

Second Year, Fall Semester

Students must take the following courses in the fall semester of the second year of study:

- Constitutional Law II
- Evidence
- Professional Responsibility

Second Year, Fall Semester or Spring Semester

- Criminal Law

Second Year or Third Year

- Business Organizations
- Mission-Related Course

Full-time students must enroll in day sections of Business Organizations, Constitutional Law II, Criminal Law, Evidence and Professional Responsibility. Full-time students may enroll in day or evening sections of Mission-Related Courses.

Elective Courses

The College of Law offers a wide variety of elective courses. Full-time students may take day or evening elective courses.

Highly Recommended Core Electives in Bar Examination Subject Areas

The faculty strongly encourages students to take the courses listed below, which cover subjects tested on the Florida Bar Examination. Highlighting these courses reflects the view that a student will benefit from taking these courses, no matter what area of practice he or she chooses.

Courses	**Credit Hours**
Criminal Procedure: Arrest and Investigation	**3**
Criminal Procedure: Pre-Trial	**3**
Criminal Procedure Survey	**3**
Estates and Trusts	**3**
Family Law	**3**
Florida Bar Law and Skills	**4**
Florida Constitutional Law	**2**
Florida Practice	**2**
Multistate Bar Law and Skills	**4**
Juvenile Law	**2**

Payment Systems (covers Article 3 of the UCC)	**3**
Remedies	**3**
Secured Transactions (covers Article 9 of the UCC)	**3**
Sales	**2**

PART-TIME PROGRAM

FIRST YEAR REQUIRED COURSES

First year students are required to take the following courses in the sequence set forth below. Part-time students must enroll in evening sections of required courses.

Fall Semester

Courses	**Credit Hours**
Civil Procedure I	3
Contracts I	3
Introduction to Analytical Skills I	0
Legal Methods I	3
Total Credits	**9**

Spring Semester

Courses	**Credit Hours**
Civil Procedure II	3
Contracts II	3
Introduction to Analytical Skills II	0
Legal Methods II	2
Total Credits	**8**

(Students may not enroll in elective courses in the second semester of the first year.)

Summer Semester

Courses	**Credit Hours**
Criminal Law	3
Professional Responsibility	2
Total Credits	**5**

(Students may enroll in elective courses during the summer term of the first year.)

Second Year Evening Program Required Courses

Fall Semester

Student must take the following courses in the sequence set forth below. Part-time students must enroll in evening sections of required courses.

Fall Semester

Courses	**Credit Hours**
Constitutional Law I	3
Torts I	3
Property I	3
Total Credits	**9**

Spring Semester

Courses	**Credit Hours**
Constitutional Law II	3
Torts II	2
Property II	2
Total Credits	**7**

Second year students in the part-time program have limited options for elective courses because they have not completed the foundational courses. Accordingly, second year part-time students who enroll in the required seven (7) credits only during the spring semester will be considered to be in compliance with the College of Law's minimum course load rules.)

Students who entered the College of Law in Fall 2010 or later must complete the upper-level required courses listed below.

Course	**Credit Hours**
Business Organizations	4
Evidence	4
Mission-Related Course	3

Mission-Related Courses

Courses designated as mission-related will be taught in a manner that includes thematic coverage of items central to the College of Law mission, including, as appropriate, themes related to slavery and enslavement, colonization, segregation/apartheid, globalization/neo-colonization, and freedom movements (civil rights, human rights, women's rights).

The College of Law has designated the following courses as mission-related.

- Race and the Law
- Public International Law

The sequencing of Upper-Level courses is set forth below.

Sequencing of Upper-Level Courses

No Later Than Third Year, Fall Semester

- Evidence

No Later Than Expected Semester of Graduation

- Business Organizations
- Mission-Related Course

Part-time students must enroll in evening sections of Business Organizations and Evidence. Part-time students may enroll in day or evening sections of Mission-Related Courses.

Elective Courses

The College of Law offers a wide variety of elective courses. Part-time students may take day or evening elective courses.

Highly Recommended Core Electives in Bar Examination Subject Matter Areas

The faculty strongly encourages students to take the courses

listed below, which cover subject matter tested on the Florida Bar Examination. Highlighting these courses reflects the view that a student will benefit from taking these courses, no matter what area of practice he or she chooses.

Course	Credit Hours
Criminal Procedure: Arrest and Investigation	**3**
Criminal Procedure: Pre-Trial	**3**
Criminal Procedure Survey	**3**
Estates and Trusts	**3**
Family Law	**3**
Florida Bar Law and Skills	**4**
Florida Constitutional Law	**2**
Florida Practice	**2**
Juvenile Law	**2**
Multistate Bar Law and Skills	**4**
Payment Systems (covers Article 3 of the UCC)	**3**
Remedies	**3**
Secured Transactions (covers Article 9 of the UCC)	**3**
Sales	**2**

Both full-time and part-time students must complete the upper level and professional skills requirements described below:

Upper-Level Writing Requirement (All Students)
In addition to completing Legal Methods I and Legal Methods II, students must also satisfy the Upper-Level Writing Requirement.

Students may complete the Upper-Level Writing Requirement paper as a part of a seminar or through an approved two-credit independent research project. Independent research projects must be supervised by a member of the full-time faculty who is not a member of the faculty in the Legal Methods Program or the Academic Success and Bar Preparation Program. Adjunct faculty members are not eligible to supervise independent research projects.

In order to satisfy the requirement, the research paper must be a minimum of twenty-five (25) pages in length including footnotes; earn a grade of B- or above; and the paper must meet all of the standards listed below, as certified by the faculty supervisor of the paper:

- Significant analytical paper;
- Reflects substantial legal research;
- Contains original thought;
- Displays proper writing style; and
- Uses correct citation form.

Under no circumstance may a student satisfy the Upper Level Writing Requirement without satisfactorily completing Legal Methods I and II.

Substantial Professional Skills Requirement (All Students)
All students are required to obtain substantial instruction in professional skills. A student may satisfy this skills requirement by participating in and satisfactorily completing either one of several available clinical offerings or by successfully completing two of the courses designated as professional skills courses or certified as a professional skills course by the Dean or the Dean's designee. For more information regarding clinical offering, see "Clinical Programs." The list of courses designated as professional skills courses is below.

- Contract Drafting
- Domestic Violence Workshop
- Interviewing, Counseling And Negotiation
- Law Office Management
- Mediation Theory And Practice
- Pretrial Practice Workshop
- Trial Practice

Required Course Descriptions
Required course descriptions, including credit hours, are also available on the College of Law.

Business Organizations
A study of the fundamentals of basic business associations with an emphasis on closely held businesses. Students will be introduced to agency concepts while exploring issues related to choice of entity. Various business forms will be examined such as general partnerships, limited liability partnerships, limited partnerships, limited liability companies, and privately held corporations. Corporate issues pertaining to corporations that are not publicly held will also be the focus. These include incorporation; financing for the small business; payment of dividends; roles of officers, directors, and shareholders; and management's duty of care and loyalty.

Civil Procedure I & II
An introduction to the organization of the federal and state courts, principles of jurisdiction, and procedural rules for civil cases. Topics include: pleadings, class actions, pretrial motions, discovery, venue, joinder of claims and parties, res judicata, collateral estoppel, summary judgment, non-jury and jury trials, claim and issue preclusion, binding effects of adjudication, and appellate review.

Clinical Program or Pro Bono Service
A concurrent program of academic instruction and skills training designed to more fully qualify the student for the practice of law. Students participate in civil and criminal settings provided by practicing attorneys. The classroom component teaches lawyering skills of interviewing, counseling, discovery, negotiation, advocacy, and Florida practice. Students must have taken, or take concurrently, Interviewing Counseling and Negotiation as well as Professional Responsibility. All practice is in accord with Florida Student practice rules. Clinics may include: Bankruptcy, Civil, Criminal, Housing, Mediation, and Street Law. Alternatively, students may complete 20 hours of qualifying Pro Bono work. See Section XV "Clinical and Pro Bono Programs."

Contracts I & II
Th law of enforceable promises, including contract formation, interpretation, conditions, performance, assignment and delegation, third-party beneficiary contracts, breach, justifications and excuses for nonperformance, remedies, promissory estoppel and restitution. Emphasis is placed on classic contract doctrine, the sales of goods under Article 2 of the Uniform Commercial

Code and other commercial legislation.

Constitutional Law I & II
Historical and legal analysis of the basic constitutional framework of the American. system of government with an emphasis on the sources and limits of federal and Supreme Court jurisdiction, allocation of powers between the federal government and states, separation of powers, congressional regulatory power under the commerce clause, and the guarantees of individual rights.

Criminal Law
Introduction to the substantive criminal law from both statutory and common law sources. Coverage includes the purposes of criminal law, criminal responsibility, theories of punishment, crimes against person and property, and defenses.

Evidence
Comprehensive examination of the problems of proof and the rules of evidence. Special attention is given to the concept of relevance, hearsay and non-hearsay, character evidence, testimonial proof, impeachment and support, scientific and demonstrative evidence and privileges.

Introduction to Analytical Skills I (IAS I)
This course is designed to teach first semester law students the critical skills necessary to successfully manage their time, prepare for class, participate in class, and effectively practice for exams. Students will learn the critical reading, writing, and thinking skills essential to excelling in law school, passing the bar exam, and succeeding as future legal practitioners. In addition, students will be taught test-taking strategies and protocols and a methodology for the evaluation of their work through the deconstruction of their multiple choice and essay practice exam answers.

Introduction to Analytical Skills II (IAS II)
This course is designed for first year law students in their second semester and is the successor course to Introduction to Analytical Skills I. Analogous to the purpose of IAS I, the general purpose of this course is to enhance the academic potential of first year law students. While reinforcing analytical skills, this class concentrates on the direct improvement of test-taking skills in both the essay and multiple choice formats. Specifically, it promotes this improvement of critical skills by administering assessment exercises and by teaching students self-assessment techniques which allow them to recognize and cure deficiencies in their work.

Legal Methods I & II
A two-semester course, both parts required for graduation. Emphasis on writing legal memoranda, legal documents, case briefing and analysis.

Professional Responsibility
Consideration of the ethical problems in the practice of law, the legal constraints on the lawyer's professional conduct, the role of the lawyer in the legal profession and the place of the profession in society, including a detailed analysis of the Code of Professional Responsibility.

Property I & II
A study of the acquisition, ownership, and transfer of property. Topics include an analysis of ownership concepts, rights of possession, future interests, concurrent interests, landlord and tenant issues, common law principles, gifts, estates in land, licenses, easements, restrictive covenants, contracts for the sale of land, conveyancing, mortgages, recording systems and land use regulation.

Critical Race Theory(Offered as Advanced Topics Seminar in 2011-2012)
Effective 2012-2013, Critical Race Theory Seminar is no longer designated as a Mission-Related Course. The Seminar may, however, satisfy the Upper-Level Writing Requirement.

This seminar will explore the central tenets of critical race theory; the foundational and emerging scholarship of critical race scholars; and critical race perspectives in a variety of doctrinal contexts. One of the course objectives is to demonstrate the application of critical race theory as a viable lawyering, jurisprudential, and lawmaking technique. This course is also designed to sharpen students' critical thinking, legal analysis and writing skills. Accordingly, students will analyze legal opinions and statutory and constitutional provisions as well as theorize factual circumstances through a critical race lens. Students may satisfy the seminar requirements through the completion of response papers to assigned readings and completion of either 1) a series of short papers or 2) one substantive final research paper of a minimum of 25 pages (which includes the student's completion of a substantive outline or draft, series of revisions, and individualized consultation with the professor). Students who wish to satisfy the Upper-Level Writing Requirement through enrollment in this seminar must complete the substantive final research paper, which includes the student's completion of a substantive outline or draft, series of revisions, and individualized consultation with the professor.

Public International Law
(Mission-Related Course; required for students who entered the College of Law in Fall 2010 or later)

This course aims to introduce students to the fascinating and complex world of international relations by examining the development and evolution of public international law and the general principles of law upon which national systems in Africa, the Americas, Asia, Europe and the Middle East are based, and situate specifically states, international organizations, regional institutions, multinational corporations, and people in their proper global legal context.

This course covers the general and comparative principles of international and national relations, including such topics as state formation and dissolution; government recognition; diplomatic privileges and immunity; international human rights and humanitarian law; international criminal law; international peacekeeping; international environmental law; international terrorism; women's rights; and international cultural property.

Race and the Law
(Mission-Related Course; required for students who entered the College of Law in Fall 2010 or later)

A survey of racial patterns in American law. Insight into race as

a social and legal construct discussed in detail. Focus will be on case law, statutes, works of historians, and critical race theorists in such areas as public facilities, voting rights, criminal justice, protest, public education, housing and environmental justice.

Torts I & II
The history and development of the legal principles underlying non-contractual civil wrongs at common law and under modern statutes are studied together with an analysis of the responsibility in tort for wrongs to the person and property. Topics include: intentional acts, liability without fault, negligence, privacy rights and harm to reputation.

Upper-Level Writing Requirement
The Upper-Level Writing Requirement must be completed before graduation and can be satisfied through a writing project that is part of a seminar or approved faculty-supervised independent research. The writing project must involve research that is substantial and constitutes a writing of sufficient quality to obtain approval by a full-time faculty member of the College of Law. Under no circumstance can a student satisfy the Upper-Level Writing Requirement without satisfactorily completing Legal Methods I and II.

College of Pharmacy and Pharmaceutical Sciences

History

The School of Pharmacy was organized in 1951 as part of the Florida Agricultural and Mechanical College (FAMC). The thrust for pharmaceutical education at FAMC came from community health care leaders and health professionals on campus who saw the need for pharmaceutical services across the country.

The designation, College of Pharmacy and Pharmaceutical Sciences, was made in 1985 in recognition of the expanded role and mission of the College in professional and graduate education. The evolution of the College has witnessed the initiation of pharmacy education with just one student in the beginning to now being one of the largest colleges of pharmacy in the country.

The College has expanded its operations from the main campus located in the capital city of Florida; Tallahassee. Extension campuses are located in Miami, Tampa and Jacksonville, Florida. These campuses, all affiliated with a major teaching medical center, create outstanding clinical training opportunities for the student, provide unlimited opportunities for research and support the infrastructure for the College's statewide commitment to pharmacy education and public service.

The College of Pharmacy and Pharmaceutical Sciences is a professional college with limited enrollment and highly selective admissions. The mission of the College is to produce highly qualified pharmacy practitioners who take an active role and responsibility in the delivery and outcomes of pharmaceutical care.

The dynamic changes that are occurring in the health systems of America demand a technologically literate, clinically trained, administratively prepared and caring health professional. Pharmacy practitioners of the 21st century will participate in drug delivery to patients, coordinate therapeutic outcomes and monitor patient care.

Students who conscientiously apply themselves and successfully complete the pharmacy program will be technically trained, educated, and well-prepared to make significant contributions to the health care area in which they work. The College of Pharmacy and Pharmaceutical Sciences strives to educate and train pharmacists to use their scientific knowledge, problem solving and critical thinking skills to determine the best solution to the health care problems of today and the future.

Mission

The primary mission of the College of Pharmacy and Pharmaceutical Sciences, in concert with Florida A&M University, is to prepare students for life-long learning and careers in an evolving profession of pharmacy. The College reinforces its mission through an active role and responsibility in the delivery, outcome, and study of pharmaceutical care services it shares with other healthcare providers. The College is committed to the advancement of pharmaceutical knowledge through teaching, research, and service in a supportive and caring environment that enhances the attainment of educational excellence and the highest standards in professional and ethical practice. The College inculcates cultural sensitivity and diversity through its faculty, student body, and patient care.

Vision

The College of Pharmacy and Pharmaceutical Sciences' vision is to provide excellent pharmaceutical education, research, and service activities statewide, nationally and globally in a dynamic health care environment.

Fingerprinting, Background Screening and Drug Screening

Fingerprinting, background screening and drug screenings are required of all pharmacy students at the beginning of their first professional year (P1), prior to beginning rotations in the fourth professional year (P4), or at any other time that may be required by the College of Pharmacy and/or an affiliation agreement.

Programs of Study

The Doctor of Pharmacy (PharmD) is granted upon successful completion of the professional curriculum and compliance with the requirements of the College and University for graduation. Graduate programs of study are offered leading to the Master of Science and Doctor of Philosophy degrees in pharmaceutical sciences including pharmacology, medicinal chemistry, pharmaceutics, environmental toxicology (Ph.D. only) and health outcomes and pharmacoeconomics. The Bachelor of Science in Pharmaceutical Sciences program will be active beginning Fall semester 2015. Please access our web site pharmacy@famu.edu for updated information.. The Master of Public Health MPH) and Doctor of Public Health (DrPH) degrees are offered through the Institute of Public Health.

Dual Pharm.D./M.B.A. Program

Florida A&M University currently offers a two-year, 60 credit hour Master of Business Administration degree (MBA) through the School of Business and Industry (SBI). Also, offered by the FAMU College of Pharmacy & Pharmaceutical Sciences (COPPS) is a six-year 207 credit hour Doctor of Pharmacy degree (PharmD). The PharmD degree is accredited by the Accreditation Council for Pharmaceutical Education (ACPE) and fulfills all educational requirements for licensure as a pharmacist in all 50 states.

The PharmD/MBA dual degree program is designed to produce professionals with robust management and business skills coupled with the ability to proficiently practice pharmacy in a variety of settings. For those who seek employment with health care organizations, managed care companies, academic institutions, or with industry, the FAMU PharmD/MBA dual degree program will shorten the time span necessary to earn both degrees independently, amplify graduate marketability in the workforce, and galvanize graduates into positions of management.

Faculty

Basic Sciences

Professors: Ablordeppey, S; Fitzgerald, T.; Goodman, C.; Holder, M.; Lamango, N. Lewis, B.; Oriaku, E.; Reams, R.; Redda, K.; Sachdeva, M.; Samaan, S.; Soliman, K.; Spencer, S.
Associate Professors: Cooperwood, J.; Hilliard, A.
Assistant Professors: Agyare, E.; Ardley, T.; Darling-Reed, S.; Flores-Rozas, H.; Israel, B.; Jackson, T.

Pharmacy Practice

Professors: Ghazvini, P.; Honeywell, M.; Kirksey, O.; Rappa, L.; Thompson, M.
Associate Professors: Emanuel, F.; Eraikhuemen, N.; Jones, J.; Larose-Pierre, M.; Norwood, D.; Simon, W.; Thomas, R. L.; Thornton, A.
Assistant Professors: Carrion, A.; Colquitt, C.; , J.; Hall, C.; Harrison, S.; King, K.; Lewis, K.; Mahdavian, S.; Marr, T.; Martin, T.; Miles, J.; Mosely, J.; Parke, C. Prier, L.; Robertson, G.; Scott, M.; Seal, D.; Smith-Mosely, L.

Economic, Social and Administrative Pharmacy

Professor: Xiao, H.
Associate Professors: Campbell, E.
Assistant Professor: Diaby, V.

Public Health

Professors: Brown, C.; Harris, C.; Kiros, G.; Rahman, S.
Associate Professors: Close, F.; Lopez, I; Suther, S.
Assistant Professors: Ashford, A.; Axelrad, D.; Baker, C. Becker, A.; Dark, T.; Lee, T.; Mathis, A.; Tawk, R.

Accreditations

Continuing Education Programs

Continuing Education Programs accredited by the Accreditation Council for Pharmacy Education (ACPE) through June 30, 2018.

Laboratory Animal Programs

Laboratory Animal Programs accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) through October 30, 2015. Contact the School of Pharmacy for current accreditation status.

PharmD Program

The Doctorate of Pharmacy (PharmD) Program is accredited by the Accreditation Council for Pharmacy Education (ACPE) through June 30, 2015. Contact the School of Pharmacy website for current accreditation status. Accreditation Council for Pharmacy Education, 20 North Clark Street, Suite 2500, Chicago, Il 60602-3109.

Web Site: http://www.acpe-accredit.org
Phone:(312) 664-3575

Public Health Programs

Public Health Programs (MPH and DrPH) are accredited by the Council on Education for Public Health through July 1, 2020. Council on Education for Public Health, 800 Eye Street, N.W., Suite 202, Washington, DC 20001-3710

Web Site: http://www.ceph.org
Phone:(202) 789-1050

Doctor of Pharmacy Curriculum

Pre-Professional Core Curriculum (Year 1)

Fall Semester	**Sem. Hrs**.
CHM 1045/L General Chemistry I (Lab)	4
MAC 1147 Precalculus	4
ENC 1101 Freshman Communication I	3
AMH 2091 Afro-American History or	3
AFA 3104 A. American Experience	
BSC 1010/L General Biology I (Lab)	4
PHA 1880 Pharmacy "Professional Development" Forum	0
Total	**18**

Spring Semester	**Sem. Hrs.**
CHM 1046/L General Chemistry II (Lab)	4
MAC 2311 Calculus	4
ENC 1102 Freshman Communication II	3
CGS 2060 Computer Literacy I	3
BSC 1011/L General Biology II (Lab)	4
PHA 1881 Pharmacy "Professional Development" Forum	
Tootal	**18**

Pre-Professional Core Curriculum (Year 2)

Fall Semester	**Sem. Hrs.**
BSC 2093/L Anatomy & Physiology I (Lab)	4
CHM 2210/L Organic Chemistry I (Lab)	4
PHY 2053/L College Physics I (Lab)	4
Social Science Elective	3
Humanities Elective I	3
PHA 2882 Pharmacy Professional Development Forum	0
Total	**18**

Spring Semester	**Sem. Hrs**.
BSC 2094/L Anatomy & Physiology II (Lab)	4
CHM 2211/L Organic Chemistry II (Lab)	4
PHY 2054/L College Physics II (Lab)	4
General Elective	3
Humanities Elective II	3
PHA 2883 Pharmacy Professional Development Forum	0
Total	**18**

Professional Curriculum

First Professional Year

Fall Semester	**Sem. Hrs**.
PHA 3800 Pharmaceutical Calculations I	1
PHA 3110 Pharmaceutics I	3
PHA 3110L Pharmaceutics I Lab	1
PHA 3426 Physiological Chemistry and Drug Analysis	3
PHA 3790 Drug Information for Pharmacists	1
PHA 3000C Introductory Pharmacy Practice Experience I	2
PHA 3581 Pathophysiology I	4
PHA 3724 Healthcare Systems and Behavior	2
PHA 3884 Pharmacy "Professional Development" Forum	0

Total	**17**

Spring Semester	**Sem. Hrs.**
PHA 3751 Microbiology and Immunity	3
PHA 3111 Pharmaceutics II and Lab	3
PHA 3111L Pharmaceutics II Lab	1
PHA 3571 Introduction to Principles of Drug Action	3
PHA 3583 Pathophysiology II	4
PHA 3002C Introductory Pharmacy Practice Experience II	2
PHA 3801 Pharmaceutical Calculations II	1
PHA 3885 Pharmacy "Professional Development" Forum	0
Total	**17**

Second Professional Year

Fall Semester	**Sem. Hrs**.
PHA 4572 Principles of Drug Action I	6
PHA 4572L Principles of Drug Action I Lab	1
PHA 4120 Biopharmaceutics and Pharmacokinetics	4
PHA 4785 Clinical Patient Assessment	3
PHA 4723 Introduction to Public Health	2
PHA 4530 Principles of Toxicology	1
PHA 4886 Pharmacy "Professional Development" Forum	0
Total	**17**

Spring Semester	**Sem. Hrs.**
PHA 4573 Principles of Drug Action II	6
PHA 4573L Principles of Drug Action II Lab	1
PHA 4126 Clinical Pharmacokinetics	3
PHA 4210 Pharmacy Management	3
PHA 4210L Pharmacy Management Lab	1
PHA 4231 Jurisprudence & Ethics I	1
PHA 4769 Self Care and Therapeutics	2
PHA 4887 Pharmacy "Professional Development" Forum	0
Total	**17**

Summer (Third Professional Year)
IPPE (Summer Experience) (160 Hours)

Third Professional Year

Fall Semester	**Sem. Hrs.**
PHA 5615 Medication Therapy Management I	5
PHA 5615L Medication Therapy Management I Lab	1
PHA 5212 Evidence-Based Medicine	3
PHA 5746 Patient Counseling	2
PHA 5234 Jurisprudence & Ethics II	1
Elective V	
PHA 5005C Initial Pharmacy Practice Experience III	2
PHA 5888 Pharmacy "Professional Development" Forum	0
Total	**16/17**

Spring Semester	**Sem. Hrs.**
PHA 5617 Medication Therapy Management II	5
PHA 5617L Medication Therapy Management II Lab	1
PHA 5285 Pharmacoepidemiology and Pharmacoeconomics	2
PHA 5103 Principles of Medication Dispensing and Compounding	2
PHA 5103L Principles of Medication Dispensing and Compounding Lab	1
PHA 5801 Applied Immunology	2
Elective II	V
PHA 5006C Initial Pharmacy Practice Experience IV	2
PHA 5889 Pharmacy Professional Development Forum	0
Total	**17/18**

Fourth Professional Year	**Sem. Hrs.**
Advanced Pharmacy Practice Experience (nine one-month experiences)	36
PHA 5917L Seminar and Research Methods I	1
PHA 5918L Seminar and Research Methods II	1
PHA 5919L Seminar and Research Methods III	1
Total	**39**
Total Degree Hours	**214**

Fourth Professional Year Breakdown

APPE (Summer Semester)	**Sem Hrs**.
PHA 5917L Seminar and Research Methods I	1
PHA 5627 Health Systems (Community)	4
PHA 5626 Health Systems (Hospital)	4
PHA 5694 Medicine I	4
PHA 5695 Medicine II	4
PHA 5692 Ambulatory Care I	4
PHA 5693 Ambulatory Care II	4
Elective	4
Elective	4
Elective	4

APPE (Fall Semester)	**Sem. Hrs.**
PHA 5918LSeminar and Research Methods II	4
PHA 5627 Health Systems (Community)	4
PHA 5626 Health Systems (Hospital)	4
PHA 5694 Medicine I	4
PHA 5695 Medicine II	4
PHA 5692 Ambulatory Care I	4
PHA 5693 Ambulatory Care II	4
Elective	4
Elective	4
Elective	4

APPE (Spring Semester) Sem. Hrs	
PHA 5919L Seminar and Research Methods III	4
PHA 5627 Health Systems (Community)	4
PHA 5626 Health Systems (Hospital)	4
PHA 5694 Medicine I	4
PHA 5695 Medicine II	4
PHA 5692 Ambulatory Care I	4
PHA 5693 Ambulatory Care II	4
Elective	4
Elective	4
Elective	4

Course Descriptions

Doctor of Pharmacy Program

PHA 1880, 1881, 2882, & 2883 Pharmacy "Professional Development" Forum (Pre-Professional) I, II, III and IV (0) A colloquium that assesses pharmacy as a profession and discusses major professional organizations, components of the curriculum and professional practice options. One (1) hour per week.

PHA 3000C Initial Pharmacy Practice Experience I (2) Introduction of student to the various areas of pharmacy practice such as retail, hospital, nursing home, home health and industry. Educational requirements, specific responsibilities of the pharmacist, legal implications and interdisciplinary relationships discussed. One (1) hour of lecture and two (2) hours of practice a week.

PHA 3002C Initial Pharmacy Practice Experience II (2) This course will introduce the student to the theories and applications of professional communications. In addition to the didactic component, the course is linked to the Introductory Pharmacy Professional Communications Laboratory Experience which will provide the opportunity to improve both oral and written communications skills. One (1) hour of lecture and two (2) hours of practice per week.

PHA 3110 Pharmaceutics I (3) Prereq: CHM 3211, PHY 3004. Pharmaceutical dosage forms theory, technology, formulation, evaluation, and dispensing. Calculations and methodology emphasized. Three (3) lecture hours per week.

PHA 3110L Pharmaceutics I Lab (1) Pharmaceutical dosage forms theory, technology, formulation, evaluation, and dispensing. calculations and methodology emphasized.

PHA 3111 Pharmaceutics II (3) Continuation of PHA 3110. Three (3) hours of lecture per week.

PHA 3111L Pharmaceutics II Lab (1) Continuation of PHA 3111L.Two hours of laboratory session per week.

PHA 3426 Physiological Chemistry (3) Introduction to chemistry and metabolism of cellular constituents and drugs with emphasis on enzymes and hormones in metabolic process. Three (3) hours lecture per week.

PHA 3571 Introduction to Principles of Drug Action (3) Functional groups, stereochemistry, and physiochemical characteristics are emphasized to provide a solid foundation of drug molecular structure, absorption, distribution, metabolic transformation and excretion and the relationship to pharmacodynamic and therapeutic aspects of drug action. This information provides correlation with mechanisms of action related to therapeutic and side effects of drugs. Three (3) hours of lecture per week.

PHA 3724 Pharmacy Health Care & Behavior (2) Social Economic and behavioral fundamentals of health care and pharmacy practice in particular. Two (2 lecture hours per week.

PHA 3790 Drug Information for Pharmacists (1) the student will be taught how to select the most appropriate literature sources when answering drug information questions. specific emphasis is placed upon the use of the internet to obtain drug information from various well-established web sites (e.g. micromedex, pubmed,idis, etc). One (1) lecture hour per week

PHA 3800 Pharmaceutical Calculations I (1) Pharmaceutical calculations encompasses calculations performed by the pharmacist in traditional as well as specialized practice settings. In addition, physiochemical aspects affecting formulation of solid dosage forms with emphasis on controlled release formulations and the techniques used to achieve them are presented. Factors affecting absorption, distribution, metabolism and excretion of drugs, bioequivalency and dosage form design are covered. Introduction to biopharmaceutics and bioavailability. One (1) hour of lecture per week

PHA 3801 Pharmaceutical Calculations II (1) Prereq: PHA 3800 Continuation of PHA 3800. One (1) hour lecture per week. PHA 3884, 3885, 4886, 4887, 5888 & 5889 Pharmacy "Professional Development" Forum III, IV, V, VI, VII and VIII (0) A colloquium involving speakers, informational presentations and discussions presented by invited participants. One (1) hour per week.

PHA 4120 Biopharmaceutics and Pharmacokinetics (4) Prereq: PHA 3581. Clinically functional, mathematical approach to design of dose regimen, especially in renal and hepatic impairment. Also drug bioavailability in therapeutic optimization. Four (4) lecture hours per week with one lecture hour devoted to biostatistics.

PHA 4126 Clinical Pharmacokinetics (3) Prereq: PHA4120. Primary focus on clinically functional approach to design of dose regiments, including special problems due to hepatic and renal functional impairment, drug interactions, and immaturity of enzyme systems. Three (3) hours of lecture per week.

PHA 4210 Pharmacy Management of Health Care Systems (3) Developing and managing community pharmacy prototypes; introduction to basic management principles and methods; entrepreneurial, social and economic aspects of practice. Three (3) hour lecture per week.

PHA 4210L Pharmacy Management of Health Care Systems (1) Application of principals presented in PHA 4210.

PHA 4231 Pharmacy Jurisprudence and Ethics I (1) This course will introduce the pharmacy student to the various ethics, moralities and laws governing the practice of pharmacy. Classroom discussions and case presentations will be a large portion of the overall course. After completion of the course students will be able to apply certain legal and ethical facts to pharmaceutical situations. This course will focus on Florida law. One (1) hour lecture per week.

PHA 4530 Principles of Toxicology (1) This course will cover the toxicity induced by certain drugs, natural vegetation, chemicals used in industry and the home as well as environmental pollutants. the signs and symptoms resulting from exposure, the mechanism of toxicity, antidotes or general treatment as well as case studies will be presented. One (1) hour lecture per week.

PHA 4572 Principles of Drug Action I (6) In this course a solid foundation is established for understanding the pharmacotherapeutic effects of drugs and how they are utilized in disease intervention. Functional groups, stereochemistry, physiochemical characteristics are correlated with pharmacodynamic and therapeutic aspects of drug action. These concepts provide an integrated comprehension of drug mechanisms of action which underlie therapeutic applications, side effects, contraindications and interactions of contemporary drug agents. Six (6) hours of lecture per week.

PHA 4572L Principles of Drug Action I Lab (1) Designed for group presentation and discussion of cases and problems related to clinical use of drugs presented in PDA lecture course. Students will learn how to integrate pharmacology and medicinal chemistry concepts with therapeutics and will be taught how to think critically in order to implement, evaluate and solve problems related to drug therapy as a pharmacist. Two (2) hours of laboratory session per week.

PHA 4573 Principles of Drug Action II (6) Continuation of PHA

4572. Six (6) hours of lecture per week.

PHA 4573L Principles of Drug Action II Lab (1) Continuation of PHA 4572L Two (2)
hours of laboratory session per week.

PHA 4723 Introduction to Public Health in Pharmacy (2) The course provides a comprehensive examination of the basic and critical issues in public health for pharmacists. The course content includes a basic knowledge base of public health issues, an exploration of the various roles that pharmacy can provide in offering public health services, and examples of application to pharmacy practice. Issues in public health care are examined from both the pharmacy perspective and the traditional public health viewpoint. Two (2) hours of lecture per week.

PHA 4769 Self Care and Therapeutics (2) This course has been designed to familiarize the student with medications and devices available for self-medication without a prescription. a review of common disorders in which these products can be used is presented and students are taught how to select and evaluate the use of appropriate agents. Two (2) hours of lecture per week

PHA 4785 Clinical Patient Assessment (3) Designed to develop knowledge in clinical methods of evaluation, data, collection and interpretation. techniques of client interviewing, charting and assessment will be covered. Three (3) hours of lecture per week

PHA 5005C Initial Pharmacy Practice Experience III (2) Prereq.: completion of 160 hours of Summer Experience. Coreq.: enrollment in PHA 5746. This course is designed to provide the students with the necessary skills needed to perform clinically oriented activities such as case presentations, journal clubs, and drug literature evaluation. This course will utilize actual patients from the Family and Friends Project presented in Patient Counseling (PHA 5746) to follow-up on and do case presentations, journal clubs drug information questions relating to the same patients and provide pharmaceutical care through health fairs in the spring as well. Two (2) contact hours per week.

PHA 5006C Initial Pharmacy Practice Experience IV (2) This course is designed to provide students with the necessary skills needed to perform clinically oriented activities such as case presentations, journal clubs, and drug literature evaluation. Introductory Pharmacy Practice III (IPPE III) will take place in the P3 year for a total of 76 hours. This course (IPPE IV) is designed to utilize actual patients from the Family and Friends Project presented in the Patient Counseling Class in the Fall of P3 year (50 hours) to follow up on and do ca se presentations, journal clubs, drug information questions relating to the same patients and provide pharmaceutical care through health fairs in the Spring semester as well (26 hours). Two (2) contact hours per week.

PHA 5103 Principles of Medication Dispensing and Compounding (2) This course is equipped to allow for the interpretation and evaluation of prescription orders and the practice of proper compounding and dispensing techniques. varying types of dosage forms are being compounding and dispensed including: oral parenteral and topical. all activities are focused on evaluation, compounding and despensing of the prescription for completeness,drug interactions and appropriateness of therapy, labeling as well as ethical and legal principles involved with the preparation and dispensing process. Two (2) hours of lecture per week

PHA 5103L Principles of Medication Dispensing and Compounding Lab (1) Corequisite: Concurrent enrollment in Principles of Medication Dispensing and Compounding. Laboratory accompaniment of lecture course. Three (3) hours per week.

PHA 5212 Evidence-Based Medicine (3) Evidenced Based Medicine (EBM) is considered the process of integrating evidence available from clinical trials and the biomedical literature with clinical expertise to make the best clinical decisions. This course is designed to teach the skills required to apply this method of learning in preventative medicine, quality improvement , patient safety, and clinical therapeutics. The critical evaluation of the recent medical and pharmacotherapeutic literature will be the focus of this course.

PHA 5234 Pharmacy Jurisprudence and Ethics II (1) This course will introduce the pharmacy student to the various ethic, moralities and laws governing the practice of pharmacy. Classroom discussions and case presentations will be a large portion of the overall course. After completion of the course students will be able to apply certain legal and ethical facts to pharmaceutical situations. This course will focus on federal laws. One (1) hour of lecture per week.

PHA 5285 Principles of Pharmacoeconomics and Pharmacoepidemiology (2) This course presents the theory and application of pharmacoeconomic analysis and pharmacoepidemiology within pharmacy practice. Two (2) hours of lecture per week.

PHA 5566 Cardiovascular Wellness and Prevention (3) Course designed to explore and present the factors and lifestyle changes required to prevent cardiovascular diseases. Three (3) hours of lecture per week.

PHA 5600 Concepts in Clinical Oncology (2) This course will provide information about the pathophysiology of common oncology disorders and present standard therapies for treating these disorders. Emphasis will be placed on designing appropriate regimens, defining therapeutic goals, monitoring clinical and laboratory parameters, and identifying drug interactions and adverse reactions. Two (2) hours of lecture per week.

PHA 5601 Pediatric Ambulatory Care (3.) Pharmacotherapeutic management of selected diseases in pediatric patients encountered in ambulatory settings. Three (3) hours of lecture per week

PHA 5615 Medication Therapy Management I (5) Students are provided with the principles of pharmacotherapeutics to be utilized when providing medication therapy management for patients with various disease and /or combinations of diseases. Specific emphasis on developing a medication treatment plan, communication, implementation and monitoring the medication plan is stressed. Pertinent patient and provider education to achieve positive therapeutic outcomes is provided. Five (5) hours of lecture per week.

PHA 5615L Medication Therapy Management I Lab (1) Students develop necessary skills required to provide medication therapy management services. The focus of the lab is skill development and will include the use of technology to emphasize how to utilize concepts learned in didactic courses to provide medication therapy management to patients and providers when managing a wide variety of disease and clinical situations. Two (2) hours of laboratory session per week.

PHA 5617 Medication Therapy Management II (5) Continuation of PHA 5615. Five (5) hours of lecture per week.

PHA 5617L Medication Therapy Management II Lab (1) Continuation of PHA 5615L. Two (2) hours of laboratory session per week.

PHA 5626 Advanced Hospital Pharmacy (4) this course will provide the student with experiential training in hospital pharmacies. the student will work under the direct supervision of a pharmacist preceptor to provide pharmaceutical care in the hospital

setting as required by new ACPE guidelines

PHA 5627 Advanced Community Pharmacy (4) This course will provide the student with experiential training in community pharmacies. the student will work under the direct supervision of a pharmacist preceptor to provide pharmaceutical care in the community setting as required by new ACPE guidelines.

PHA 5676 Advanced Medication Therapy Management (4) Prerequisite: Successful completion of didactic course work. The MTM rotation is designed to provide the student with general knowledge regarding various issues surrounding the development and implementation of MTM services. This rotation also assists in developing the students' skills in pharmacotherapy, verbal and written communications, drug nformation as they apply to the area of MTM. Four (4) hours of lecture per week.

PHA 5746 Patient Counseling (1) Prereq: Completion of semester 8 course work. Techniques and problems involved with counseling patients presented. Counseling suggestions for all major dosage forms and drug classes are presented. One (1) hour of lecture per week.

PHA 5775 Gerontology and Nutrition (2) This course will discuss the medical, biological, psychological and social aspects of aging with emphasis on drug therapy, medical and community care of the elderly, principles of nutrition, nutritional requirements, nutritional care and the use of modified restricted diets in special conditions or disease states will be discussed as well. Two (2) hours of lecture per week.

PHA 5810 Applied Immunology (2) A study of the basic principles of immunology, including antigen-antibody reactions, humoral immunity, and hypersensitivity reactions, as well as the immunopathology of selected disease complexes. Two (2) hours of lecture per week

PHA 5897 Patents and Advanced Legal Issues in Pharmacy Practice (2) This course will increase understanding of several advanced legal topics in pharmacy practice for students planning to work for pharmaceutical companies, the FDA or retail stores. The course will cover Patents and the Orange Book, OBRA-90, HIPAA & Medication Therapy Management, the Dietary Supplement Health Education Act, Consultant Pharmacist Liability, Pharmaceutical Qui Tam Actions, Off-Label Use and Marketing of Prescription Drugs, A Pharmacist's Duty to Warn, A Pharmacist's right to Choose and other relevant laws impacting pharmacy practice. Two (2) hours of lecture per week.

PHA 5917L, 5918L, and 5919L (1,1,1) This course is intended to provide students with communication and research skills designed to supplement clinical clerkship training. Weekly discussion of current topics of interest in the area of clinical pharmacy will be presented by faculty, students, and invited outside lecturers. Emphasis is placed on research design, proposal writing, IRB submission, abstract and manuscript preparation. Two (2) contact hours per week.

PHA 5681, 5676, 5692, 5693, 5694, 5695, 5696 Clinical clerkships I-VI (4,4,4, 4,4,4) Each candidate is required to complete full-time rotations in each of the following: psychiatry, internal medicine, pediatrics, and ambulatory care.

PHA 5651, 5652, 5653 Advanced Pharmacy Practice Electives (4, 4, 4) These courses allow the student to obtain experience in providing pharmaceutical care or developing administrative skills during the assigned four week periods in a variety of clinical and administrative settings.

Dual Pharm.D/M.B.A. Program

Florida A&M University currently offers a two-year, 60 credit hour Master of Business Administration degree (MBA) through the School of Business and Industry (SBI). Also, offered by the FAMU College of Pharmacy & Pharmaceutical Sciences (COPPS) is a six-year 207 credit hour Doctor of Pharmacy degree (PharmD). The PharmD degree is accredited by the Accreditation Council for Pharmaceutical Education (ACPE) and fulfills all educational requirements for licensure as a pharmacist in all 50 states.

The PharmD/MBA dual degree program is designed to produce professionals with robust management and business skills coupled with the ability to proficiently practice pharmacy in a variety of settings. For those who seek employment with health care organizations, managed care companies, academic institutions, or with industry, the FAMU PharmD/MBA dual degree program will shorten the time span necessary to earn both degrees independently, amplify graduate marketability in the workforce, and galvanize graduates into positions of management.

Pre-Professional Curriculum (Year 1)

Fall Semester	**Sem. Hrs**
HM 1045/L General Chemistry I (Lab)	4
MAC 1147 Precalculus	4
ENC 1101 Freshman Communication I	3
ECO 2013 Principles of Economics	3
BSC 1010/L General Biology I (Lab)	
PHA 1880 Pharmacy "Professional Development" Forum I	0
Total	**18**

Spring Semester	**Sem. Hrs.**
CHM 1046/L General Chemistry II (Lab)	4
MAC 2311Calculus with Analytical Geometry	4
ENC 1102 Freshman Communication II	3
ACG 2022 Financial Accounting	3
BSC 1011/L General Biology II (Lab)	4
PHA 1881 Pharmacy "Professional Development" Forum II	0
Total	**18**

Year 1 Summer	**Sem. Hrs.**
ECO 2023 Macro Economics	3
ACG 3301 Managerial Accounting	3
AMH 2091 Afro-American History OR	3
AFA 3104 A. American Experience	
MAN 2812 Introduction to Business Systems OR	
CGS 2060 Computer Literacy I	3
SYS Introduction to Sociology	3
Total	**15**

Pre-Professional Curriculum (Year 2)

Fall Semester	**Sem Hrs.**
CHM 2210/L Organic Chemistry I (Lab)	4
PHY 2053/L College Physics I (Lab)	4
PSY 2012 Introduction to Psychology	3
Humanities Elective I	3
BSC 2093/L Anatomy & Physiology I (Lab)	4

PHA 2882 Pharmacy "Professional Development" Forum III	0
Total	**18**

Spring Semester	**Sem. Hrs.**
CHM 2211/L Organic Chemistry II (Lab)	4
PHY 2054/L College Physics II (Lab)	4
QMB 2102 Introduction to Quantitative Methods	3
Humanities Elective II	3
BSC 2094/L Anatomy & Physiology II (Lab)	4
PHA 2883 Pharmacy "Professional Development" Forum IV	0
Total	**18**

Summer	**Sem. Hrs.**
MAN 3600 International Business	3
FIN 3493 Corporation Finance `	3
GEN ED General Ed Elective	3
MAN 3025 Principles of Management	3
MAN 3023 Principles of Marketing	3
Total	**15**
Total Hours End of Second Year	**102**

Gordon Rule Requirements

Communication (6 hours) = Freshman Communication I, II (ENC 1101,1102
Mathematics (6 hours) = Precalculus and Bus. Calculus (MAC 1147, 2233)
Humanities (6 hours) = Humanities Electives I, II (HUM (2 courses)
Social Science (6 hours) = African American History or the African-American Experience and one Social Science
Elective (AMH2091 **or** AFA 3104 and SSE)
Natural Science (8 hours) = Biology I, II (BSC 1010,1011)
General Elective (3-4 hours)= General Elective (GE)
Total Hours = 35-36 hours

TAKE GMAT AND APPLY TO SBI

Professional Curriculum
First Professional Year

Fall Semester	**Sem. Hrs.**
PHA 3426 Physiological Chemistry	3
PHA 3110/L Pharmaceutics I (Lab)	4
PHA 3581 Pathophysiology	5
PHA 3790 Drug Information	1
PHA 3000C IPPE I	2
PHA 3800 Pharmaceutical Calculations I	1
PHA 3884 Pharmacy "Professional Development" Forum V	0
Total	**16**

Spring Semester	**Sem. Hrs.**
PHA 3751 Microbiology & Immunology	3
PHA 3111/L Pharmaceutics II (Lab)	4
PHA 3571 Introduction to PDA	3
PHA 3785 Clinical Patient Assessment	3
PHA 3002C IPPE II	2
PHA 3801 Pharmaceutical Calculations II	1
PHA 3885 Pharmacy "Professional Development" Forum VI	0
Total	**16**

Summer	
Sem. Hrs.	
MAN 5205 Organizational Theory/Behavior	3
MAR 5805 Marketing Strategy	3
ACG 5175 Financial Statement Analysis	3
Total	**9**

Second Professional Year

Fall Semester	**Sem. Hrs.**
PHA 4572 Principles of Drug Action I	6
PHA 4572L Principles of Drug Action Lab	1
HA 4120 Biopharmaceutics and Pharmacokinetics	4
PHA 4724 Health Care Systems & Behavior	2
PHA 4723 Introduction to Public Health	2
PHA 4886 Pharmacy "Professional Development" Forum VII	0
TRA 5722 Global Logistics I	3
Total	**18**

Spring Semester	**Sem. Hrs.**
PHA 4573 Principles of Drug Action II	6
PHA 4573L Principles of Drug Action II Lab	1
PHA 4126 Clinical Pharmacokinetics	3
PHA 4210 Pharmacy Management	3
PHA 4210L Pharmacy Management Lab	1
PHA 4231 Jurisprudence and Ethics I	1
PHA 4769 Self Care and Therapeutics	2
PHA 4887 Pharmacy "Professional Development" Forum VIII	0
Total	**17**

Summer Semester	**Sem. Hrs.**
IPPE (Summer Experience) (160 hours)	
GEB 5931 GEB I (GPD I) (Special after IPPE S. Exp.)	2
Total	**2**

Third Professional Year

Fall Semester	**Sem. Hrs**
PHA 5615 Medication Therapy Management I	5
PHA 5615L Medication Therapy Management I Lab	1
PHA 5746 Patient Counseling	2
PHA 5212 Evidence-Based Medicine	3
PHA 5234 Jurisprudence and Ethics II	1
PHA 5005C IPPE III	2
PHA 5XXX Pharmacy Elective I	2
PHA 5888 Pharmacy "Professional Development" Forum IX	0
GEB 5932 GEB II (GPD II)	2
Total	**18**

Spring Semester	**Sem. Hrs**
PHA 5617 Medication Therapy Management II	5
PHA 5617L Medication Therapy II Lab	1

PHA 5103 Principles of Medication Dispensing and Compounding	2
PHA 5103L Principles of Medication Dispensing and Compounding Lab	1
PHA 5285 Pharmacoepidemiology and Pharmacoeconomics	2
PHA 5006C IPPE IV	2
PHA 5810 Applied Immunology	2
PHA 5XXX Pharmacy Elective II	2
PHA 5889 Pharmacy "Professional Development" Forum X	0
Total	**17**

Fourth Professional Year	**Sem. Hrs.**
APPE (nine one month experiences)	36
PHA 5917L Seminar and Research Methods I (Summer)	1
PHA 5918L Seminar and Research Methods II (Fall)	1
PHA 5919L Seminar and Research Methods III (Spring)	1
Total	**39**

Fourth Professional Year Breakdown	**Sem. Hrs.**
Health Systems (Community)	4
Health Systems (Hospital	4
General Medicine I	4
General Medicine II	4
Ambulatory Care I	4
Ambulatory Care II	4
Elective	4
Elective	4
Elective	4
Total	**36**

Fifth Professional Year

Fall Semester	**Sem. Hrs.**
FIN 5500 Finance	3
BUS XXXX Upper Level Business Elective (See list)	3
BUL 5321 Legal Issues and Environment	3
QMB 5555 Managerial Research Methods	3
GEB 5933 GEB III (GPD III)	2
MAN 5838 System Theory Design	3
Total	**17**

Spring Semester	**Sem. Hrs.**
FIN 5515 Investment Analysis/Portfolio Analysis	3
BUS XXXX Upper Level Business Elective (See list)	3
MAN 5721 Business Policy – Strategic Management	3
GEB 5934 GEB IV (GPD IV)	2
MAN 5511 Product and Operations Management	3
Total	**15**

Accepted Upper Level Business Electives

Certain additional prerequisites may apply; check with your advisor prior to enrolling.

ACG 5308 Accounting Planning and Control	3
FIN 5324 Commercial Bank Administration	3
FIN 5806 Theory of Finance	3
MAN 5616 World Resources	3
TRA 5723 Global Logistics	3
MAN 5549 Total Quality Management	3
MAR 5930 Adv. Topics in Consumer Behavior	3
MAR 5838 Strategic Brand Management	3
MAR 5465 Strategic Purchasing Supply Management	3
MAR 5336 Promotional Strategy	3
MAR 5158 International Marketing Management	3
MAR 5151 Global Economic Marketing Applications	3
MAR 5905 Directed Individual Study	variable
MAR 59XX Service Marketing (To be developed (COPPS + SBI)	

NOTE: The statements set forth in this section of the catalog are for information purposes only and should not be construed as the basis of a contract between a student and this institution. While the provisions of this section will ordinarily be applied as stated, the College of Pharmacy and Pharmaceutical Sciences and the School of Business and Industry reserve the right to change any provision listed in this section, including (but not limited to) academic requirements for graduation, without actual notice to individual students. Every effort will be made to keep students advised of any such changes. However, it is especially important that each student note that it is his or her responsibility to keep himself or herself appraised of current graduation requirements by regular consultation with his or her advisor. Students are alerted that Student Handbooks for the College of Pharmacy and Pharmaceutical Sciences and the School of Business and Industry are published annually and contain the details of the academic and matriculation policies of the respective academic units.

Master of Science/Doctor of Philosophy

The College of Pharmacy and Pharmaceutical Sciences at Florida A&M University offers comprehensive programs of course work and research leading to the Master of Science degree and Doctor of Philosophy degree in pharmaceutical sciences. Specializations are offered in pharmacology/toxicology, medicinal chemistry, environmental toxicology (Ph.D. degree only) pharmaceutics, and health outcomes research and pharmacoeconomics. Each program of study is under the direction of a supervisory committee which oversees development of each student's curriculum and general progress and monitors adherence to general degree requirements. Graduates of these programs will find a wide spectrum of employment opportunities in academic institutions, pharmaceutical industry, and government.

Minimum Requirements for Graduate Admission

For M.S. Programs

3.0 GPA in the last 60 semester hours
3 Applicants must submit a GRE (verbal and quantitative) score.
Foreign students must obtain a Test of English as a Foreign Language (TOEFL) score prior to admission.

For Ph.D. Programs

300 combined GRE score and 3.0 GPA or a Master's degree from an accredited institution and three (3) letters of recommendation.
International students must obtain a Test of English as a Foreign Language (TOEFL) score prior to application submission.

Requirements for the Master of Science Degree (M.S.)

Completion of at least thirty (30) semester hours of graduate level course work and research including:

a. a minimum of four semester hours of Research Seminar

(PHA 6938)
b. a minimum of six semester hours of Research and Thesis (PHA6975)

- A 3.0 cumulative grade point average must be maintained
- Participation in the instructional component of selected undergraduate laboratories as assigned
- One presentation at a national scientific meeting
- Presentation of one research article in a refereed scientific journal
- Satisfactory performance on final comprehensive written examinations
- Presentation and defense of an acceptable thesis based on original research.

Requirements for the Doctor of Philosophy Degree (Ph.D.)

Completion of at least ninety (90) semester hours of graduate level course work and research including:

a. a minimum of nine (9) hours of Research Seminar (PHA 6938)
b. a minimum of twelve (12) hours of Dissertation Research (PHA 7980)

A 3.0 cumulative grade point average must be maintained

- Participation in the instructional component of selected undergraduate courses including lectures and/or laboratories as assigned
- Submission and successful defense of the research protocol
- Successful completion of oral and written comprehensive examination
- Presentation of at least two manuscripts for publication in refereed scientific journals
- Submission of an acceptable dissertation based on scholarly and independent research
- Presentation and defense of an acceptable dissertation based on original laboratory research
- Two presentations at national scientific meetings

Seminar Policy
All graduate students, including those who have satisfied the minimum seminar requirement for either degree program, are expected to enroll and participate in Research Seminar every semester, except the semester in which the thesis or dissertation is defended.

Graduation Policy
Students must be registered at Florida A&M University in the semester in which they are awarded a degree (M.S. or Ph.D.).
The following graduate level courses are offered in the College of Pharmacy for fulfillment of the requirements of the M.S. and Ph.D. degree in pharmaceutical sciences. Additional graduate offerings may be obtained from the approved list of courses at nearby Florida State University (FSU) with the written permission of the supervisory committee.

Financial Aid
Support ranging from $8,500 to $16,200 per year may be available in the form of research or teaching assistantships and fellowships to qualified students. Work-study funds and tuition waivers may also be available on a limited basis

Courses	**Sem. Hrs.**
PHA 6105 Unit Operations in the Pharmaceutical Industry	2
PHA 6105L Unit Operations in the Pharmaceutical Industry Lab	1
PHA 6117 Adv Phys Pharmac	3
PHA 6121 Grad Pharmacokinetics	4
PHA 6175 Pharmaceutical Product formulation	3
PHA 6176 Drug Delivery	3
PHA 6180 Adv Pharmaceutics I	3
PHA 6181 Adv Pharmaceutics II	2
PHA 6182 Advanced Pharmaceutics III	2
PHA 6220 Economic Evaluation of Pharmaceuticals	3
PHA 6221 Overview of Managed Care	3
PHA 6256 Pharmacy in the Health Care	3
PHA 6257 Organization and Administration of U.S. Health Care	3
PHA 6258 Contemporary Issues in Long-Term Care	3
PHA 6259 Humanistic Outcomes of Pharmaceutical Programs	3
PHA 6260 Advanced Studies in Pharmacoeconomics	3
PHA 6353 Natural Product Chem	2
PHA 6433 Graduate Pharmacomed Chem I	2
PHA 6434 Graduate Pharmacomed Chem II	2
PHA 6441 Adv Medicinal Chem I	2
PHA 6442 Adv Medicinal Chem II	2
PHA 6446 Topics Med Chemistry	2
PHA 6447 Stab/Chem Kinetic Drug	3
PHA 6507 Adv Cardiovac Physiology	2
PHA 6513 Grad Pharmacology I	2
PHA 6514 Grad Pharmacology II	2
PHA 6519 Adv Cardiovas Pharmacology	2
PHA 6525 Pharmacological Techniques	3
PHA 6527 Anal Mtd Phar & Tox	2
PHA 6527L Analysis Mtd Pha & TOx-L	1
PHA 6532 HUM HLT & Env Tox	3
PHA 6533 Grad Toxicology	2
PHA 6534 Environ Toxicology	3
PHA 6535 Advanced Toxicology	3
PHA 6536 Hum Hlt & Env Tox II	3
PHA 6737 Drugs in Society	4
PHA 6538 Toxicokinetics	4
PHA 6539 Envir Tox II	3
PHA 6545 Neuropharmacology	3
PHA 6547 Endocrine Pharmacology	4
PHA 6553 Epid & Hum Risk Assessment	4
PHA 6570 Biotech & Mole Biology	3
PHA 6576 Molecular Pharmacology	3
PHA 6578 Biochemical Pharmacology	2
PHA 6582 Anal Meth Neuroscience	2
PHA 6582L Anal Meth Neuroscience Lab	2
PHA 6715 Biostat & Comp Methodology	3
PHA 6715L Biostat & Comp Mtd. Lab	1
PHA 6717 Research Design Methods & Analysis	3
PHA 6719 Res Dsgn Met & Analysis	3
PHA 6740 Proposal Prep & Grant Admin	2
PHA 6749 Col Tech Hlt Care Pro	2
PHA 6901 Intro Grad Stu Pharm	Var 01-05
PHA 6907 Spec Prob Pharm Sciences	Var 01-04
PHA 6916L Research Internship	Var 01-09
PHA 6916 Field Experience in Pharmacy Administration	2-6
PHA 6938 (2) Pharmacy Administration Seminar	1(x4)
PHA 6938 Research Seminar	1
PHA 6975 Research and Thesis	Var 01-09
PHA 7979 Advanced Research	Var 01-09
PHA 7980 Dissertation	1-12
PHA 8966 Comprehensive Examination, Master's	0
PHA 8968 Research Protocol	0
PHA 8969 Comprehensive Examination, Doctoral	0
PHA 8976 Thesis Defense	0
PHA 8985 Dissertation Defense	0

Specialization in Pharmacology/Toxicology

Core Curriculum for all Graduates	**Sem. Hrs.**
BCH 5045 Advanced Biochemistry	3
PHA 6513 Graduate Pharmacology	2
PHA 6514 Graduate Pharmacology II	2
PHA 6715 Biostatistics	3
PHA 6715L Biostatistics	1
PHA 6527 Analytical Methods	3

Core Curriculum for M.S. in Pharmacology/Toxicology	**Total=32 hrs.**
PHA 6545 Neuropharmacology	3
PHA 6547 Endocrine Pharmacology	4
PHA 6576 Molecular Pharmacology	3
PHA 6938 Seminar	4
PHA 6975 Research and Thesis	6
PHA 8966 Master of Science Comprehensive Examination	0
PHA 8976 Thesis Defense	0

Core Curriculum for Ph.D. in Pharmacology/Toxicology	**Total=90 Hrs.**
PHA 6519 Adv. Cardiovascular Pharmacology	2
PHA 6525 Pharmacological Techniques	3
PHA 6533 Graduate Toxicology	2
PHA 6535 Advanced Toxicology	3
PHA 6545 Neuropharmacology	3
PHA 6547 Endocrine Pharmacology	4
PHA 6576 Molecular Pharmacology	3
PHA 6578 Biochemical Pharmacology	2
PHA 6740 Proposal Prep & Grant Ad	2
PHA 6938 Seminar	9
PHA 7979 Advanced Research	12
PHA 7980 Dissertation	12
PHA 8968 Doctoral Research Protocol	0
PHA 8969 Doctoral Comprehensive Examination	0
PHA 8985 Doctoral Dissertation Defense	0
Electives	15

As prerequisites for these courses, all students will be required to have the following:

- Calculus
- Physiology
- Pathology
- Anatomy and Neuroscience

Electives can be selected from other graduate courses offered in the College of Pharmacy or relevant graduate courses offered at FAMU or FSU.

** Required only of non-pharmacy graduates. It is required that students concurrently register for PHA 3580 Human Structure and Function and PHA 3581 Pathophysiolog, if they have not previously completed this or an equivalent course in human medical physiology. These physiology courses are not available for graduate credit.

Specialization in Medicinal Chemistry

Core Curriculum for All Graduate Students (M.S. and Ph.D.)	**Sem. Hrs.**
BCH 5045 Advanced Biochemistry	3
PHA 6513 Graduate Pharmacology I	2
PHA 6514 Graduate Pharmacology II	2
PHA 6527 Analytical Methods	3
PHA 6715 Biostatistics	3
PHA 6715L Biostatistics Lab	1

Core Curriculum for M.S. in Medicinal Chemistry	**Total = 33 Hrs.**
CHM 5225 Advanced Organic Chemistry	3
CHM 5226 Advanced Organic Chemistry	3
PHA 6433 Graduate Pharmacomed Chem I	2
PHA 6434 Graduate Pharmacomed Chem II	2
PHA 6441 Advanced Medicinal Chemistry I	2
PHA 6576 Molecular Pharmacology	3
PHA 6938 SeminarPHA 6938 Seminar	4
PHA 6975 Research and Thesis	6
PHA 8966 Master of Science Comprehensive Examination	0
PHA 8976 Thesis Defense	0

Core Curriculum for Ph.D. in Medicinal Chemistry	**Total = 90 Hrs.**
CHM 5225 Advanced Organic Chemistry	3
CHM 5226 Advanced Organic Chemistry	3
CHM 5250 Advanced Organic Chemistry	3
PHA 6380 Special Topics in Medicinal Chemistry	2
PHA 6433 Graduate Pharmacomed Chem I	2
PHA 6434 Graduate Pharmacomed Chem II	2
PHA 6441 Advanced Medicinal Chemistry I	4
PHA 6442 Advanced Medicinal Chemistry II	4
PHA 6554 Natural Product Chemistry	2
PHA 6576 Molecular Pharmacology	3
PHA 6578 Biochemical Pharmacology	2
PHA 6740 Proposal Prep & Grant Ad	2
PHA 6938 Seminar	9
PHA 7979 Advanced Research	10
PHA 7980 Dissertation	12
PHA 8968 Doctoral Research Protocol	12
PHA 8969 Doctoral Comprehensive Examination	0
PHA 8985 Doctoral Dissertation Defense	0
Electives	15

Electives may be chosen from, but are not limited to all currently offered graduate courses in the College of Pharmacy:

CHM 4230-FAMU; CHM 4230-FSU Organic Qualitative Analysis
CHM 461 0-FAMU; CHM 461 0-FSU Inorganic Chemistry

* CHM 5240 Physical Organic Chemistry
* CHM 5506 and 5507 Macromolecules I and 11
* CHM 5150L Laboratory Methods in Biochemistry
* BCH 5425 Molecular Biology
* PCB 5026 Cellular and Molecular Biology
* CHM 5151 Optical Methods of Chemical Analysis
* BCH 5745 Chemical and Physical Characterization of Biopolymers

Notes
* Offered only by Florida State University
** Required only of non-pharmacy graduates. Students are required to concurrently register for Human Structure/ Function, Pathophysiology (PHA 3580,3581) if they have not previously completed this or an equivalent course in human medical physiology. These physiology courses are not available for graduate credit.
- Graduate Medicinal Chemistry I and II (PHA 6433 and 6434) are required of all non-pharmacy graduates.
* The following courses or their equivalent should be on the student's transcript or must be made up during the first year of graduate study:

Two semesters of calculus (MAC 2311 and 2312) or equivalent.
Two semesters of physical chemistry (CHM 4410 and 4411) or equivalent.

Specialization in Environmental Toxicology Core Courses for All Graduate Students	**Sem. Hrs.**
BCH 5045 Advanced Biochemistry	3
*PHA 6513 Graduate Pharmacology I	2
*PHA 6514 Graduate Pharmacology II	2
PHA 6527 Analytical Methods	3
PHA 6715 Biostatistics	3
PHA 6515L Biostatistics	1

Core Courses for Ph.D. with Specialization in Environmental Toxicology

ECH 5095 **Environmental Chemistry	3
EVS 5862 Regulatory Toxicology	3
PHA 6532 Human Health and Environmental Toxicants I	3
PHA 6533 Graduate Toxicology	2
PHA 6534 Environmental Toxicology I	3
PHA 6535 Advanced Toxicology	3
PHA 6536 Human Health and Environmental Toxicants II	3
PHA 6538 Toxicokinetics	4
PHA 6539 Environmental Toxicology II	3
PHA 6553 Enviro Epidemiology & Human Risk Assess	4
PHA 6740 Proposal Prep & Grants Ad	2
PHA 6916 Research Internship	6-10
PHA 6938 Seminar	9
PHA 7979 Advanced Research	6
PHA 7980 Dissertation	12
PHA 8969 Doctoral Comprehensive Examination	0
PHA 8968 Doctoral Research Protocol	0
PHA 8985 Doctoral Dissertation Defense	0
Electives	8-10
Total hours	**78-82**

Electives may be chosen from, but not limited to:

All currently offered graduate courses in the College of Pharmacy

EVS 5027 Environmental Microbiology (FAMU/SOE)
EVS 5604 Hazard Material Management (FAMU/SOE)
EVS 5606 Environmental Physiology and Nutrition
URP 5425 Methods of Environmental Impact (FSU)
URP 5427 Environmental Legislation and Policy (FSU)

Notes:
* Offered only by Florida State University
** Required only of non-pharmacy graduates. Students are required to concurrently register for PHA 3580 Human Structure/ Function and PHA 3581 Pathophysiology if they have not previously completed this or an equivalent course in human medical physiology. These physiology courses are not available for graduate credit.
* Environmental Chemistry and Regulatory Toxicology is offered by the Environmental Sciences Institute, Florida A&M University, at the graduate level.
* Students should check with the course instructor for the prerequisite for each course before registration.

Specialization in Health Outcomes Research and Pharmacoeconomics

Core Curriculum for M.S. in Health Outcomes Research and Pharmacoeconomics	**48 hrs)**
PHA 6717 Research Methods II	2
PHA 6710 Research Methods I	3
PHA 6715 Biostatistics and Computer Methodology	3
PHA 6712 Applied Statistics for Health Care Research II	2
PHA 6284 Introduction to Health Research Theory	3
PHA 6256 Pharmacy in the Health Care System	3
PHA 6977 Thesis Writing	1
PHA 6916 Internship	5
PHA 6938 Seminar	1(x4)
PHA 6975 Research and Thesis	22(8,8,6)
PHA 8966 M.S. Comprehensive Examination	0
PHA 8976 M.S. Thesis Defense	0

Minimum credit hours for the master's curriculum are 26 hours for course work, 22 hours for thesis research.

Core Curriculum for Ph.D. in Health Outcomes Research and Pharmacoeconomics	**(90 hrs)**
PHA 6715 Biostatistics and Computer Methodology	3
PHA 6256 Pharmacy Health Care Systems	3
PHS 6717 Research Methods II	2
PHA 6712 Applied Statistics for Health Care	2
PHA 6284 Introduction to Health Care Research Theory and Policy	3
PHA 6710 Research Methods I	3
PHA 6259 Measurement of Health Outcomes	3
PHA 6797 Scientific Communications	3
PHA 6292 Comparative Effectiveness Evaluation I	2
PHA 6293 Comparative Effectiveness Evaluation II	2
PHC 6000 Introduction to Epidemiology	3
PHA 6916L Research Internship	6
PHA 7979 Advanced Research	10
PHA 6938 Seminar	9
PHA 7980 Dissertation	22
Research Methods/Statistics Elective	3
Required Elective for Area of Concentration/Minor	12

Elective Courses

AEB 5555 Econometrics	3
ECO 5115 Microeconomic Theory I	3
ECO 5116 Microeconomic Theory II	3
ECO 5204 Macroeconomic Theory I	3
ECO 5207 Macroeconomic Theory II	3
EDA 6475 Qualitative Methods in Education Research	3
EDA 7415 Qualitative Research Design	3
EDA 7405 Quantitative Research Methods I	3
EDA 7406 Quantitative Research Methods II	3
HSA 5752 Health Care Statistics	3
HSA 6432 Economic Aspects of Health Care	3
HSA 6414 Social Dimensions and Issues of Health Care	3
HSA 6118 Organizational Theory and Behavior in Health Care Organizations	3
HSA 6735 Application of Research Methods in Health Services Management	3
HSA 6153 Current Issues in Health Policy and Politics	3
PHA 6220 Economic Evaluation of Pharmaceuticals	3
PHA 6260 Advanced Studies in Pharmacoeconomics	3
PHA 6297 Health Care Policy and Political Decision-Making	3
PHA 6298 Advanced Health Policy Analysis and Advocacy	3
PHA 6XXX Advanced Health Policy Development	3
PHA 6294 Patient Behavior in the Health Care System I	3
PHA 6295 Patient Behavior in the Health Care System II	3
PHC 6411 Principles of Social Marketing	3
PHC 6704 Applied Community-Based Research Methods	3
PHC 6003 Epidemiology of Chronic Diseases	3
PHC 6408 Principles of Behavioral Science and Health Education	3
PHC 6532 Current Issues in Women's Health	3
PHC 6441 Health Inequities in American Populations	3
PHC 6601 Introduction to Public Health Genomics	3
PHC 6763 Health Outcomes Research in Health Care	3
STA 5166 Statistics in Applications I	3
STA 5168 Statistics in Applications II	3
STA 5179 Survival Analysis	3
STA 5244 Clinical Trials	3
STA 5238 Applied Logistic Regression	3

Course Descriptions

PHA 6256 Pharmacy in the Health Care System (3) - This course covers administrative and professional principles, concepts and trends affecting the pharmacy profession in the health care system. It covers the U.S. health care system, including its development, current status and future. Students will be introduced to health care concepts and terminology, health care technology, provider and patient characteristics, methods of health financing, government

regulation and health care reform.
PHA 6259 Measurement of Health Outcomes (3) - This course focuses on the concepts, development, types, and applications of health outcomes measures.
PHA 6284 Introduction to Health Research Theory and Policy (3) - This course addresses the conceptual foundation of health care research and practice, including social-behavioral, economic, and health policy theories and models.
PHA 6517 General Concepts in Pharmacology I (3) – An introductory survey course in pharmacology designed for graduate students in medicinal chemistry, pharmaceutics, and environmental toxicology. Three lecture hours per week.
PHA 6518 General Concepts in Pharmacology II (3) – Continuation of PHA 6517. Three lecture hours per week.
PHA 6710 Research Methods I (3) - This is the first course in a two-course series to provide students an overview of methods for health services research. This course will provide students with the knowledge and skills to transform ideas into research.
PHA 6712 Applied Statistics for Health Care (2) - This course focuses on the application of several statistical techniques to health care research issues.
PHA 6715 Biostatistics and Computer Methodology (3) and Lab (1) - This course provides a basic introduction to the principles of biostatistics. It will introduce graduate students to the theory and practical applications of Biostatistical techniques to biomedical research. In addition, students will be introduced to the applications of statistical computer programs for practical data analysis using SAS. Topics covered include introduction, types of data, sampling methods, measures of central tendency and dispersion, probability and probability distributions, construction and understanding of confidence intervals, hypothesis testing, comparison of two means, analysis of variance, inference on proportions, contingency tables, correlation, and simple linear regression.
PHA 6717 Research Methods II (2) – This course covers a variety of research designs and methods used in health outcomes research.
PHA 6797 Scientific Communications (3) – This course covers principles and practice of producing scientific communications (e.g., articles for bio-medical journals, reports for regulatory agencies, biomedical thesis and dissertations, presentations at professional meetings, and grant proposals).
PHA 6292 Comparative Effectiveness Evaluation I (2) - This is the first of a two-course sequence that covers comparative effectiveness research as it applies to healthcare therapies, devices and procedures. Basic introduction of the methods and techniques utilized in comparative effectiveness research are covered.
PHA 6293 Comparative Effectiveness Evaluation II (2) - This is the second of a two-course sequence that covers comparative effectiveness research as it applies to healthcare therapies, devices and procedures. More advanced techniques and applications in the field are provided.
PHA 6294 Patient Behavior in the Health Care System I (3) – This course introduces theories of health behavior.
PHA 6295 Patient Behavior in the Health Care System II (3) - This course focuses on the application of theories of health behavior.
PHA 6297 Health Policy and Political Decision-Making (3) - This course covers key components of the health policy making process to include problem definition, policy design alternatives, and trade-offs. Criteria to evaluate healthcare policy alternatives and impact desired outcomes in the health and pharmaceutical care arena will be the focus.
PHA 6298 Advanced Health Care Policy Analysis and Advocacy (3) - This web enhanced course uses discussion, exploration, and adoption of a personal theory for policy development in a context of values and value formation. Students will develop the critical thinking skills necessary in order to use rhetoric to express values and incite policy action.
PHA 6XXX Advanced Health Care Policy Development (3) – In this course, students develop a policy proposal that approximates the professional practice of a health policy analyst. Students identify an appropriate policy position, synthesize and integrate knowledge acquired in policy development. Learning is facilitated by guided mentorship.
PHC 6000 Introduction to Epidemiology (3) - This course is designed to introduce participants to the theories, concepts, and tools of epidemiology. Specifically, the course will focus on the application of these theories and concepts to the practice of Public Health. Topics to be discussed include the evolution of the discipline, causal concepts in the natural history of disease, measurement of disease, epidemiologic study design, elements of screening for disease, criteria for evaluation of cause and effect relationships, and epidemics.
PHA 6916L Research Internship (1-9) - Prereq: Two semesters of graduate study. Supervised research experience in the pharmaceutical industry, in a well established research institute or selected health care establishment, or at a health-related government agency, or other appropriate facility approved by the student's advisory committee. Students will be exposed to modern state-of-the-art research activities, techniques, concepts and procedures.
PHA 6938 Seminar (1) - Each semester all graduate students are required to participate in a 1 hour seminar where current events and issues relating to pharmacy and health care are discussed.
PHA 6975 Research and Thesis (1-9) - Students will conduct individual research projects in area of their scientific interest under direction of graduate faculty member with subsequent submission of written thesis to student's graduate committee.
PHA 7979 Advanced Research (1-9) - Prereq: Acceptance to the Ph.D. degree program. Research for doctoral students before admission to candidacy. Designed for students with master's degree in the field of study or for students who have been accepted for a doctoral program.
PHA 7980 Research for Doctoral Dissertation (1-12) - Prereq: Admission to doctoral candidacy. Research for doctoral candidates for completion of the doctoral dissertation.
PHA 8966 M.S. Comprehensive Examination (0) - This course is designed for students who have successfully completed all core and specialty areas requirements for the M.S. degree. The examination's purpose is to test student's knowledge in core and specialty areas as well as test the ability to integrate and apply scientific concept in the chosen area of pharmaceutical sciences.
PHA 8968 Doctoral Research Protocol (0) - This course is designed for Ph.D. students qualified for dissertation research. Students enrolled are required to submit and present his/her doctoral research protocol to his/her Ph.D. advisory committee.
PHA 8969 Ph.D. Comprehensive Examination (0) - This course is designed for students who have successfully completed all course requirements for the Ph.D. degree. This examination is composed of a written and oral examination. The examination's purpose is to test student's knowledge in core content and specialty areas, as well as test the ability to integrate and apply scientific concepts in the area of choice.
PHA 8976 Master's Thesis Defense (0) - This course is designed for M.S. candidates who have completed all the required M.S. research and submitted a thesis in its final form.
PHA 8985 Doctoral Dissertation Defense (0) - This course is designed for Ph.D. candidates who have finished all required dissertation research and submitted a dissertation in its final form.

Specialization in Pharmaceutics

Core Curriculum for M.S. and Ph.D. Candidates	**Sem. Hrs.**
PHA 5045 Advanced Biochemistry	3
PHA 6513, 6514 Graduate Pharmacology I, II	4
PHA 6527 Analytic Methods	3
PHA 6517 Biostatistics & Lab	4
Core Curriculum for M.S. in Pharmaceutics	
PHA 6117 Advanced Physical Pharmacy	3
PHA 6176 Drug Delivery	3
PHA 6938 Seminar	2
PHA 6975 Research and Thesis	6
PHA 8966 Master of Science Comprehensive Examination	0
PHA 8976 Thesis Defense	0
Core Curriculum for Ph.D. in Pharmaceutics	**90 Sem. Hrs.**

PHA 6117 Advanced Physical Pharmacy	3
PHA 6121 Advanced Pharmacokinetics	4
PHA 6175 Pharmaceutical Product Formulation	3
PHA 6176 Drug Delivery	3
PHA 6180 *Advanced Pharmaceutics l	3
PHA 6181 *Advanced Pharmaceutics ll	2
PHA 6182 Advanced Pharmaceutics III	2
PHA 6447 Chemical Kinetics and Stability of Drugs	3
PHA 6570 Biotechnology & Molecular Biology	3
PHA 6740 Proposal Preparation and Grants Administration	2
PHA 6938 Seminar	9
PHA 7979 Advanced Research	12
PHA 7980 Dissertation	12
PHA 8969 Doctoral Comprehensive Examination	0
PHA 8968 Doctoral Research Protocol	0
PHA 8985 Doctoral Dissertation Defense	0

*Required only of non-pharmacy graduates.

Electives may be selected from, but are not limited to:

PHA 6105 Unit Operations in the Pharmaceutical Industry	3
PHA 6174 Sterile Dosage Forms	3
PHA 6175 Pharmaceutical Product Formulation	3
PHA 6907 Advanced Topics in Pharmaceutical Sciences	3

Specialization in Pharmacoeconomics

Core Curriculum for the M.S. in Pharmacoeconomics

STA 5207 Applied Regression Methods	3
STA 5707 Applied Multivariate Analysis	3
PHA 6220 Economic Evaluation of Pharmaceutics	3
PHA 6221 Overview of Managed Care	3
PHA 6256 Pharmacy in the Health Care Systems	3
PHA 6257 Organization and Administration of U.S. Health Care	3
PHA 6258 Contemporary Issues in Long- Term Care	3
PHA 6259 Humanistic Outcomes of Pharmaceutical Programs	3
PHA 6260 Advanced Studies in Pharmacoeconomics	6
PHA 6917 Research Design Methods and Analysis	3
PHA 6916 Field Experience in Pharmacy Administration	2-6
PHA 6938 Pharmacy Administration Seminar	1(4)
PHA 6975 Thesis	6
PHA 8966 Master of Science Comprehensive Examination	0
PHA 8976 Thesis Defense	0
Total	**38**

Graduate Course Descriptions

PHA 6105 Unit Operations in the Pharmaceutical Industry (2) This course deals with the study of the various unit operations involved in the manufacture of pharmaceuticals with particular emphasis on those used in the production of solid, liquid and semisolid dosage forms. Two (2) lectures per week.

PHA 6105 Unit Operations in the Pharmaceutical Industry Lab (1) Lab to accompany PHA 6105.

PHA 6117 Advanced Physical Pharmacy (3) Special topics of a physical-chemical nature applicable to pharmaceutical systems. Emphasis is given to chemical kinetics, stability of pharmaceuticals and principles of colloid and surface science. Applications to dosage form design and biological systems are considered. Three (3) lectures per week.

PHA 6121 Advanced Pharmacokinetics (4) Principles of pharmacokinetics parameters (absorption, distribution, metabolism, excretion) as they relate to dosage regimen of individual drugs and patient factors which affect drug therapy. Four (4) lectures per week.

PHA 6176 Drug Delivery (3) Emphasizes the theoretical basis of new drug delivery systems. The student should develop the ability to utilize and apply the properties of drug and carrier system to develop new dosage forms. Three (3) hours per week

PHA 6180 Advanced Pharmaceutics I (3) Prereq: CHM 3211, PHY 3005 The study of the pharmaceutical and physicochemical aspects affecting formulation of liquid dosage forms with emphasis on solutions and extractives, parenteral preparations, intravenous admixtures, opthalamic preparations and polyphasic systems. Three (3) hours per week.

PHA 6181 Advanced Pharmaceutics II (2) Prereq.: PHA 6180. A study of solid dosage forms such as powders, tablets and capsules as well as sustained release drug delivery systems. Topical applications, dissolution, aerosols radiopharmaceuticals, stability of pharmaceutical products and reaction kinetics incompatibility and complexation. Two (2) lecture hours per week.

PHA 6182 Advanced Pharmaceutics III (2) Prereq.: PHA 6181. Introduction to application of pharmacokinetic principles with special emphasis to be given to patient factors such as disease states, age, drug factors such as formulation in drug delivery and availability and formulation of a rational dosage regimen. Two (2) lecture hours per week.

PHA 6220 Economic Evaluation of Pharmaceuticals (3) Advanced course in the theory and principles of pharmaceutical economics. Primary course objective is to introduce students to conceptual and theoretical foundations of conducting pharmaceutical economic analysis and practical methodological issues an evaluator needs to resolve in undertaking an economic evaluation of a pharmaceutical program. This course is a prerequisite to Advanced Studies in Pharmacoeconomics which deals with the application of knowledge gained in present course.

PHA 6221 Overview of Managed Care (3) Introduction to key concepts of managing programs in the health care system. This course is designed for graduate students in health care programs. The first part of the course focuses on understanding the managed care system. The second part is an applied section for students to investigate different health care providers, consumers, and managed care organizations and their perspectives about managed care.

PHA 6256 Pharmacy in the Health Care System (3) An overview and appraisal of the pharmacy profession and health care system. Students will explore and critique the present role of pharmacists as health care providers and examine the evolving role of pharmacists as health care providers. Historical changes in professions of medicine, nursing, and law will also be explored and compared to that of pharmacy.

PHA 6257 Organization and Administration of U.S. Health Care (3) The overall goal of this course is to provide graduate students with a systematic understanding of the U.S. health care system-the arrangement and delivery of health care services in the U.S. The development of the U.S. medical care system, its current status and future trends will be discussed. The course will also cover the historical, social, political, and economic forces that influence the access, utilization, quality, and cost of health care services. Health care concepts and terminology, available technology and resources, provider characteristics, methods of financing, government regulation, and health care reform initiatives will be reviewed.

PHA 6258 Seminar on Contemporary Issues in Long-Term Care (3) This course covers changing contemporary topics in long-term care research. In addition to formal lectures by instructor, students will read, present and critique research for discussion during seminar.

PHA 6259 Humanistic Outcomes of Pharmaceutical Programs (3) This course is designed to present an understanding of the concepts, development, and types of humanistic outcomes measures used as pharmacoeconomic research tools.

PHA 6260 Advanced Studies in Pharmacoeconomics (3) Prereq: PHA 6259 and PHA 6220. Application of economic and humanistic outcome evaluations of health care. Primary objective of course is to expose students to the application of conceptual and theoretical foundations of pharmacoeconomic analysis in health care.

PHA 6353 Natural Product Chemistry (2) Prereq: PHA 4430, 4431. Biosynthesis, isolation, characterization, and the SAR of compounds isolated from plants, animals, and microbial organisms. Two (2) lecture hours per week.

PHA 6433 Graduate Medicinal Chemistry I (2) Synthesis of man-made drug moieties and extraction and purification of naturally occurring drugs. Three (3) lecture hours per week.

PHA 6434 Graduate Medicinal Chemistry II (2) Synthesis of man-made drug moieties and extraction and purification of naturally occurring drugs. Three (3) lecture hours per week.

PHA 6441 Advanced Medicinal Chemistry I (2) This course integrates principles and concepts of biochemistry physiology; physical, organic and computational chemistry in the design and synthesis of agents targeted to specific receptors in the body.

PHA 6442 Advanced Medicinal Chemistry II (2) This course integrates principles and concepts of biochemistry physiology; physical, organic and computational chemistry in the design and synthesis of agents targeted to specific receptors in the body.

PHA 6446 Topics in Medicinal Chemistry (2) Prereq: PHA 6433, 6434.Examination of pertinent topics in contemporary medicinal chemistry. Emphasis on drug discovery, rationale of drug design, and developmental process for new drugs. Two (2) lecture hours per week.

PHA 6447 Stability and Chemical Kinetics of Drugs (3) Prereq.: PHA 3111. This course deals with the study of kinetics and mechanisms of solution reactions as applied to pharmaceutical systems, including drug degradation and stabilization. Three (3) lecture hours per week.

PHA 6507 Advanced Cardiovascular Physiology (2) Analysis of cardiovascular physiology, including hemodynamics, cardiac mechanics, electrocardiophysiology, cardiac control, and history of cardiovascular physiology.

PHA 6513 Graduate Pharmacology I (2) Effects of drugs on the human body. Two (2) hours of lecture per week.

PHA 6514 Graduate Pharmacology II (2) Effects of drugs on the human body. Two (2) hours of lecture per week.

PHA 6519 Advanced Cardiovascular Pharmacology (2) Prereq.: PHA 6514. This course is designed to build on the basic concepts that were taught in the general and advanced pharmacology courses. To teach and analyze the established and experimental concepts related to cardiac mechanics, cardiacontrol, vascular control, hemodynamics, cardiametabolism cardia and vascular pathology and to interrelate the number and types of pharmacological agents that are used experimentally. Two (2) lecture hours per week.

PHA 6525 Pharmacological Techniques (3) Principles and applications of lab techniques used in evaluation of pharmacological agents. Screening drug activity of synthetic and natural compounds, utilizing modern recording equipment. Three (3) laboratory sessions per week.

PHA 6527 Analytical Methods in Pharmacology and Toxicology & Lab (2,1) Principles and application of lab techniques as they apply to detection and mechanism of action of drugs and detection of compounds in environmental and industrial toxicology. Use of modern lab analytical methods, including gas chromatography and mass spectrometry. Three (3) lecture hours per week.

PHA 6532 Human Health and Environmental Toxicants I (3) Prereq.: PHA 6514. Emphasizes description of principles important in understanding toxicologic events, types of injury produced in specific organs or systems by toxic agents and examples of agents which cause these effects. Toxic responses of various systems, i.e., liver, blood, immune system, kidney and pulmonary systems. Three (3) lecture hours per week.

PHA 6533 Graduate Toxicology (2) Clinical problems of drugs, environmental and industrial toxicities. Toxicological test procedures and case studies. Two (2) lecture hours per week.

PHA 6534 Environmental Toxicology (3) Prereq.: PHA 6514, 6533, 6535. This course is designed to discuss the pathophysiological, toxicological and functional disorders to human health resulted from exposure of various chemicals in the environment. In addition, the course will consider the various chemical agents in the air, water, food, pesticides and other environmental components that affect the public health. Three (3) lecture hours per week.

PHA 6535 Advanced Toxicology (2) Theoretical aspects of toxicology at the molecular level in regard to mechanisms and consequences of toxicology. Two (2) hours lecture per week.

PHA 6536 Human Health Environmental Toxicants II (3); Prereq. PHA 6514, 6535. Designed to describe principles important in understanding toxicologic events, types of injury produced in specific organs or systems by toxic agents and examples of agents which cause these effects. The toxics of various systems, i.e. cardiovascular, the skin central nervous system, reproductive system and developmental toxicology. Three (3) lecture hours per week.

PHA 6538 Toxicokinetics (4) Prereq.: PHA 6514, 6535. Study of time course of absorption, distribution, elimination, excretion of toxins. Toxins are accumulated in the body and their levels at site of action are related to their toxic intensity. Three (3) lecture hours per week.

PHA 6539 Environmental Toxicology II (3); Prereq PHA 6514, 6533, 6535, Designed to further discuss the qualitative and quantitative human pathophysiological, toxicological and functional disorders precipitated by biochemical and physical agents. Furthermore, the course will consider the various chemical and environmental agents in air, water, food, pesticides and other environmental sources which are of public health concern. Three (3) lecture hours per week.

PHA 6545 Neuropharmacology (3) Study of drugs and toxins affecting the central nervous system, drug addiction and abuse from the pharmacological point of view and autonomic and CNS drugs in relation to their neural properties and toxic side reactions. PHA 6547 Endocrine Pharmacology (4) Study of the physiology of the endocrine organs, their metabolic products and functions, consideration of therapeutic applications of the various hormones, and effects of drugs on endocrine function.

PHA 6553 Epidemiology and Human Risk Assessment (4); Prereq. PHA 6535, 6536. Course designed to describe basic knowledge on epidemiology. Elements of descriptive and analytical epidemiology with emphasis on environmental contaminations. An in-depth risk assessment analysis for human exposure to toxic substance will be discussed. Four (4) hour lecture per week.

PHA 6570 Biotechnology & Molecular Biology (3); Prereq.: Graduate student status or upper-class undergraduate with permission of the Dean. Will cover the basic concepts of molecular biology and will examine methods of DNA cloning, techniques and uses of molecular biology and biotechnology. Use of techniques to study disease and their application to drug development, production and mechanism elucidation will also be covered. Three (3) lecture hours.

PHA 6576 Molecular Pharmacology (3) Modern concepts of molecular structure and biochemistry form basis for discussing molecular theories of drug action. Emphasis on development of receptor concepts, techniques for studying drug-receptor interaction, and application of these concepts to interpretation of biological responses, therapeutic uses, and toxicity of drugs. Three (3) lecture hours per week.

PHA 6578 Biochemical Pharmacology (2) Interaction of drugs with biochemical processes. Emphasis on biotransformation of drugs and effects of drugs on metabolism of important cellular constituents and control mechanisms. Two (2) lecture hours per week.

PHA 6582 Analytical Methods in Neuroscience & Lab (2,2); Prereq.: PHA 3580, 3581, 4511. The application of principles and techniques of neuroscience. The central and the peripheral nervous system will be studied using pharmacological methods. Two (2) hours of lecture per week.

PHA 6715 Biostatistics and Computer Methodology (3) An introduction to methods of collection, tabulation, analysis, and application of biological data specifically related to various biomedical problems. Three (3) lecture hours per week.

PHA 6715L Biostatistics and Computer Methodology Laboratory. One (1) hour per week. Computer application to biostatistics.

PHA 6717 Research Design Methods & Analysis (3)This course will introduce students to research design, survey research sampling, measurements, data collection, confidence intervals, hypothesis testing, analysis of variance, correlation, and regression.

PHA 6719 Research Design, Methodology and Analysis (3) Various aspects of research designs, methodologies, and analyses in pharmaceutical sciences. Emphasis on applications and uses of appropriate statistics in research. Focus also on interpretation of

research data based on analysis, research findings, reporting and proposal writing. Three (3) lecture hours per week.

PHA 6737 Drugs and Society (4) Major aspects of drugs subject to misuse, including medical, social, and legal implications, consumer education, and user rehabilitation.

PHA 6740 Proposal Preparation and Grant Administration (2) Grant-proposal development, funding-source selection, and evaluation process for proposal approval and funding. Two (2) lecture hours per week.

PHA 6749 College Teaching for Health Professionals (2) College Teaching as the name implies will focus on the teaching role of college/university faculty with particular emphasis on instructional planning, designing of instructional materials, evaluating of student performance, teaching of higher-order thinking skills, technology and teaching, and planning of effective lectures.

PHA 6901 Introduction to Graduate Studies in Pharmaceutical Sciences (V 1-5); Prereq. Graduate Status. Students will receive special training in topics designed to provide support for graduate work in pharmaceutical sciences.

PHA 6907 Special Problems in the Pharmaceutical Sciences (4) Drug-related problems in the pre-clinical and clinical setting. Four (4) lecture hours per week.

PHA 6916 Field Experience in Economic, Social, and Administrative Sciences (2-6) This course will provide graduate students in the program practical experience in pharmacoeconomics. Students will complete a project in a selected health care institution (e,g., hospital pharmacy pharmaceutical company managed care organization, etc.,).

PHA 6916L Research Internship (1-9) Prereq: Two semesters of graduate study. Supervised research experience in a well-established research institution. Exposure to state-of-the-art research equipment, modern research activities, techniques.

PHA 6938 Research Seminar (1) Weekly discussion of current topics by students, faculty, and invited speakers. One (1) hour lecture per week.

PHA 6975 Research and Thesis (1-9) Students will conduct individual research projects in area of their scientific interest under direction of graduate faculty member with subsequent submission of written thesis to student's graduate committee.

PHA 7979 Advanced Research (1-9) Prereq: Acceptance to the Ph.D. degree program. Research for doctoral students before admission to candidacy. Designed for students with master's degree in the field of study or for students who have been accepted for a doctoral program.

PHA 7980 Research for Doctoral Dissertation (1-12) Prereq: Admission to doctoral candidacy. Research for doctoral candidates for completion of the doctoral dissertation.

PHA 8966 M.S. Comprehensive Examination (0) This course is designed for students who have successfully completed all core and specialty areas requirements for the M.S. degree. The examination's purpose is to test student's knowledge in core and specialty areas as well as test the ability to integrate and apply scientific concept in the chosen area of pharmaceutical sciences.

PHA 8968 Doctoral Research Protocol (0) This course is designed for Ph.D. students qualified for dissertation research. Students enrolled are required to submit and present his/her doctoral research protocol to his/her Ph.D. advisory committee.

PHA 8969 Ph.D. Comprehensive Examination (0) This course is designed for students who have successfully completed all course requirements for the Ph.D. degree. This examination is composed of a written and oral examination. The examination's purpose is to test student's knowledge in core content and specialty areas, as well as test the ability to integrate and apply scientific concepts in the area of choice.

PHA 8976 Master's Thesis Defense (0) This course is designed for Ph.D. candidates who completed all the required M.S. research and submitted thesis in its final format.

PHA 8985 Doctoral Dissertation Defense (0) This course is designed for M.S. candidates who have finished all of required dissertation research and submitted dissertation in its final form.

Public Health Graduate Programs

MPH Core Curriculum Requirements

Core Courses	**Course Title**	**Credits**
PHC 6100	Introduction to Public Health	3
PHC 6000	Introduction to Epidemiology	3
PHC 6357	Public Health Perspectives of Environmental and Occupational Health	3
PHC 6050	Biostatistics for Public Health	3
PHC 6050L	Practice Biostatistics Lab	1
PHC 6560	Principles of Behavioral Science and Health Education	3
PHC 6102	Principles of Health Policy and Management	3
PHC 6934	Topics in Public Health (Seminar)	3
PHC 6704	Applied Community-Based Research Methods	3
Total Core Course Hours		**25**
Track Courses		
(See Track Courses Below)		
Total Track Course Hours		**9**
Public Health Practice Course		
PHC 6945	Public Health Practice I (Rotation)	3
PHC 6910	Public Health Practice II (Special Research Project)	3
PHC 7911	Public Health Practice III (Independent Study)	2
PHC 6187	Professional Development in Public Health	1
Total Public Health Practice Hours		9
PHC 7946	Public Health Internship	6
PHC 7965	Comprehensive Exam	1
Total		**50**

Core Knowledge Area	**Course Number & Title**	**Credits**
Epidemiology and Biostatistics	PHC 6002 Infectious Disease Epidemiology PHC 6003 Chronic Disease Epidemiology	3 3
	PHC 6011 Advances in Epidemiology Methods	3
Environmental and Occupational Health	PHC 6005 Occupational Disease PHC 6018 Environmental Epidemiology	3 3
	PHC 6310 Environmental Toxicology for Health Professionals	3
	PHC 6317 Environmental Risk Communication	3
	PHC 6355 Topics In Occupational Health	3
	PHC 6011 Advances in Epidemiology Methods	3
Behavioral Science and Health Education	PHC 6444 Community Organizing and Public Health	3
	PHC 6587 Planning and Evaluation of Health Education	3
	PHC 6532 Current Issues in Women's Health	3
	PHC 6411 Principles of Social Marketing	3
	PHC 6416 Contemporary Urban Health	3
	PHC 6407 Understanding Individual Health Behaviors	3
	PHC 6627 Health Education for Underserved Populations	3

Health Policy and Management	PHC 6160 Economic Aspects of Health Care	3
	PHC 6761 Public Health Program Evaluation	3
	PHC 6705 Health Outcomes Research and Health Care	3

MPH Customized Program of Study (Track Courses)
Concentrated study in one of the five core areas are mandatory for the MPH. Students must complete nine (9) credit hours in one of the concentrations as part of the MPH degree requirements.

Core Knowledge Area	Course Number & Title	Credits
Epidemiology and Biostatistics	PHC 6002 Infectious Disease Epidemiology	3
	PHC 6003 Chronic Disease Epidemiology	3
	PHC 6011 Advances in Epidemiological Methods	3
Environmental and Occupational Health	PHC 6005 Occupational Disease	3
	PHC 6018 Environmental Epidemiology	3
	PHC 6310 Environmental Toxicology for Health Professionals	3
	PHC 6317 Environmental Risk Communication	3
	PHC 6355 Topics In Occupational Health	3
	PHC 6011 Advances in Epidemiology Methods	
Behavioral Science and Health Education	PHC 6444 Community Organizing and Public Health	3
	PHC 6587 Planning and Evaluation of Health Education	3
	PHC 6532 Current Issues in Women's Health	3
	PHC 6411 Principles of Social Marketing	3
	PHC 6416 Contemporary Urban Health	3
	PHC 6407 Understanding Individual Health Behaviors	3
	PHC 6627 Health Education for Underserved Populations	3
Health Policy and Management	PHC 6160 Economic Aspects of Health Care	3
	PHC 6761 Public Health Program Evaluation	3
	PHC 6705 Health Outcomes Research and Health Care	3

Public Health Rotation
Public Health Practice I (Rotation) is a 12-week (three four-week rotations) course required in the third semester of study, following the first two semesters of core courses. This course allows the student to rotate through the Florida Department of Health (FDOH) in divisions or bureaus in programmatic areas representative of the five core areas of public health in four week segments, under the supervision of personnel with expertise in the particular area. The purpose of the public health rotations is to give the student an opportunity to work in a formal public health setting. Initially, each student is provided a formal orientation of the FDOH programs and, based on a specific interest in each area, each student chooses a particular topic to study (e.g., chronic disease control, environmental health, family services, planning and evaluation, disaster preparedness, birth defects surveillance, health disparities and environmental health tracking). Each student is matched with a specific preceptor for each rotation, based on project interest. A variety of possible projects is made available to the student two months prior to the start of the rotation period. This timeframe allows the student the time to review the available projects in each specialty area and make a decision on the area of interest for that particular rotation. Once a decision is made, the student initiates contact with the respective preceptor to discuss the project, work hours, and expected deliverables. The rotation time is ten hours/week at the rotation site for a 12-week semester.

MPH Culminating Experience
The required culminating experience required for the MPH program is the Comprehensive
Examination (PHC 7965), Public Health Practice III (Independent Study), and the Public Health Internship (PHC 7946).

Comprehensive Exam: The Comprehensive Exam is taken in the first month of the last semester of study (Semester 5) and consists of a two-day written examination over the basic principles and concepts of the (five) core areas of public health (multiple choice) and, for the onsite traditional MPH program, a specific exam on the track courses taken by each respective student (short essay questions). There is an 80% pass requirement. Students have two opportunities to successfully pass all parts of the comprehensive exam and, if not successful, one additional time in the following semester. Failure to pass the comprehensive exam, in the following semester, will result in dismissal of the student from the FAMU Public Health Program.

Public Health Practice III (Independent Study): Each student is responsible for the development and conduct of an independent public health research project in their specialized program of study. Problem identification, project outline, methods and preliminary analysis, and results are required in Public Health Practice II (PHC 6910) at the conclusion of the fourth semester. Final data analysis is conducted during the fifth semester in Public Health Practice III. Each student must orally present their public health research project in a public forum and submit the written project at the conclusion of the semester. Each student is guided by his/her academic advisor during semesters four and five on their individual projects.

Public Health Internship: MPH students matriculate in PHC 7946 - Public Health Internship (6 credit hours) following the completion of all core and advanced course work. The internship is an integral part of the MPH curriculum. It is intended to broaden the student's public health perspectives and provide experience in applying information learned in the core courses by integrating practical experience in public health practice with theory and content learned in didactic courses. At the beginning of the fourth semester, MPH students meet with the Internship Coordinator, student advisor, and Director to determine the type and location of the internship. Prior to this interview, the student submits an updated resume and a completed internship information form. Each internship must be in the area of specialization declared by the student at the conclusion of the third semester. The duration of the internship is a minimum of 20 hours/week over the entire semester for a total of 240 hours. Thus, the MPH Program requires a total of 360 hours of field placement experience for the traditional (on-site) students. Each student is evaluated by each internship preceptor through the submission of a progress report and submission of a final product, respectively.

Course Descriptions
Core Courses
PHC 6100 - Introduction to Public Health (3) This course is designed to introduce participants to the principles, theories, concepts and methodologies involved in the study of public health at the community, state and national levels. The course will primarily provide a forum to discuss the history of public health, public health and disease, identification and analysis of community

assessment data and functions, tools, activities and results of public health practice. No prerequisites

PHC 6000 - Introduction to Epidemiology (3) This course is designed to introduce the theories and concepts of epidemiology. Specifically, the course will focus on the application of these theories and concepts to the practice of public health. Topics to be discussed include epidemiological terminology, measurement of disease, disability and health in population groups, vital statistics and reportable disease mechanisms, and procedures for infectious and chronic disease control. No prerequisites

PHC 6357 - Public Health Perspectives of Environmental and Occupational Health (3) The applied public health course will consider the public's viewpoint of environmental and occupational health effects, the role of state, local, and federal agencies in protecting public health, and the perception of risk. In addition, the roles of community groups and other organizations will be discussed, as will the issues surrounding environmental justice and environmental equity, and common terminology in environmental and occupational health. No prerequisites

PHC 6050 - Biostatistics for Public Health Practice (3) This course will introduce the participant to the theory fundamentals and practical applications of biostatistical techniques in the practice of public health. Topics to be discussed include the nature of data needs and practical uses of biostatistics to evaluate public health problems, sampling methods, probability, hypothesis testing, distributions, measures of central tendency, measure of dispersion, confidence estimation, simple statistical tests for comparison of means, comparison of proportions, and evaluations of measures of association. No prerequisites

PHC 6560 - Principles of Behavioral Science and Health Education (3) This course will introduce the student to the principles, theories, concepts, and methodologies involved in the study of health behavior and community health education. The course will primarily provide a forum to discuss the foundations of health behavior and health education, models of individual and interpersonal health behavior, community health and susceptible populations, community and group intervention models of health behavior change, and using theory in research and practice. No prerequisites

PHC 6102 - Principles of Health Policy and Management (3) This course will consider major aspects of American health care policy. The first half of the course will provide a comprehensive review of general principles underlying federal, state, and private reforms aimed at controlling costs, expanding access, protecting quality, and assuring the public's health. We will identify the forces, both internal and external to local, state, and federal governments, which influence health policy decisions. No prerequisites

PHC 6934 - Topics in Public Health (Seminar) (3) This course will introduce the student to current topics in public health. The course will primarily provide a forum for critical review of the current public health literature and the oral presentation of public health information. Presentations may cover such topics as asthma, rural health care policy, lead poisoning prevention, bioterrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases.

PHC 6934 - Topics in Public Health (Seminar) (3) This course will introduce the student to current topics in public health. The course will primarily provide a forum for critical review of the current public health literature and the oral presentation of public health information. Presentations may cover such topics as asthma, rural health care policy, lead poisoning prevention, bioterrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases.

Prerequisites: (1) PHC 6100, PHC 6000, PHC 6560, PHC 6102, PHC 6050, PHC 6050L, PHC 6357 AND (2) Student must pass PHC 6100 AND fail no more than one of the following courses: PHC 6000, PHC 6560, PHC 6102, PHC 6050, PHC 6050L, PHC 6357

PHC 6704 - Applied Community-Based Research Methods (3) This course will introduce students to the wide range of methods used in conducting community-based research. Throughout the semester, students will be provided with opportunities to design research questions, conduct a mini-study, and determine preliminary data results. The purpose of this course is to provide students with hands-on experience using various research methods that are most conducive to improving the health status of community residents.

Prerequisites: (1) PHC 6100, PHC 6000, PHC 6560, PHC 6102, PHC 6050, PHC 6050L, PHC 6357 AND (2) Student must pass PHC 6100 AND fail no more than one of the following courses: PHC 6000, PHC 6560, PHC 6102, PHC 6050, PHC 6050L, PHC 6357

Total 24

Public Health

PHC 6945 - Public Health Practice I (Rotation) On-site only (3) The purpose of this course is to orient the students to public health practice and applications in the areas of epidemiology/ biostatistics, environmental and occupational health, health policy and management, and chronic diseases/health education. Students are to be assigned to personnel in the Florida Department of Health and work in these areas for 10 hrs/week. Three semester credit hours will be granted upon the completion of this course. State health department personnel will provide input on the evaluation of students.

PHC 6910 Public Health Practice II (Special Research Project (3) The purpose of this course is to orient the students to public health practice and applications in the areas of epidemiology/ biostatistics, environmental and occupational health, health policy and management, and chronic diseases/health education. Students are to be assigned to personnel in the Florida Department of Health and work in these areas for 10 hrs/week. Three semester credit hours will be granted upon the completion of this course. State health department personnel will provide input on the evaluation of students.

Public Health Practice III (Independent Study) (2) This course is a continuation of PHC 6910 with intensive research on a specific public health project in a core public health area during the last semester of study. **Prerequisites PHC 6910**

PHC 7946 - Public Health Internship (6) This course is designed to provide intensive off-site public health practice opportunities, over a three-month period of time, in a local, state, or federal health agency of community-based organization. International public health opportunities are also considered**. The public health internship is required during the last semester of matriculation before conferring of the Master of Public Health degree.**

PHC 6187 – Professional Development

(On-site only) (1) The course will introduce the graduate student to concepts, principles, and procedures that influence professional and personal development of future public health professionals. Strong emphasis will be placed on personal attitude, values, and behaviors that serve as a foundation upon which professional contributions and recognition may be achieved.

Public Health Ethics (online only) (3) This course describes a distinction between public health ethics and medical ethics, examines the role of public health as a social justice issue, and provides tools for ethical decision-making in public health. The course will address issues pertaining to human rights, social justice, and racial disparities (in both research and practice domestically and internationally).

Public Health Seminar (online only) (1) This seminar course offers students an opportunity to engage with faculty and contemporaries, to consider topics for possible research or practicum opportunities, and to participate in interdisciplinary discussion around issues central to public health.

Total 15

MPH Comp.Exam

PHC 7965 - Comprehensive Exam (1) This course is designed to

test public health competencies in the core public health areas in designated specialized areas. It is offered during the last semester of matriculation before conferring of the Master of Public Health degree. **Prerequisites: Completion of all required courses excluding the following: PHC 7911 and PHC 7946**

Track Courses Behavioral Science and Health Education Concentration 6 hrs.

PHC 6444 - Community Organizing and Public Health (3) This course will introduce students to community organizing from an historical, healthcare, and health education perspective. Students will gain knowledge about basic community organizing, leadership development, building organizations, grassroots fundraising, prejudice and power, accountability, strategy, tactics, holding actions, and, identifying issues. This course is designed to teach students the knowledge and skills to assist communities in creating change and increase participation in being a healthy community. **Prerequisites: PHC 6560**

PHC 6506 - Planning and Evaluation of Health Education (3) This course will introduce the participant to the principles, concepts, and methodologies involved in planning and evaluation of health education programs. Participants in this course will learn and apply models of program planning, as well as models and methodologies of program evaluation as related to health education programming. **Prerequisites: PHC 6560**

Electives (3) hrs.)

PHC 6411 - Principles of Social Marketing (3) This course is designed to analyze the components and applications of social marketing for public health. Class sessions will combine presentations with group discussion and in-class exercises. Students are expected to read the assigned materials prior to class so that they are prepared to participate in discussions. **Prerequisites: PHC 6560**

PHC 6532 - Current Issues in Women's Health (3) This course will be an analysis of the historical, social and psychological aspects of women's health from a public health perspective. Special emphasis is placed on the life-cycle challenges and chronic conditions from under-served communities. **Prerequisites: PHC 6560**

PHC 6441 - Health Inequities in American Populations (3) This course will offer wide exposure to contemporary practice and research issues in the field of health disparities, allowing students to sample a number of topics. The class will concentrate on the identification of mechanisms underlying health disparities and evidence-based models to close the multitude of urban, rural and national health gaps. Gaps in health based on gender, race, ethnicity, age, socioeconomic status, sexual orientation and geographical location will be covered. **Prerequisites: PHC 6560**

Total 9

Track Courses – Epidemiology and Biostatistics

PHC 6011 - Advances in Epidemiological Methods (3) The course presents an in-depth examination of study design, analysis and interpretation of epidemiologic data. Included in this course is the study of advanced statistical methods as they apply to epidemiologic data (analysis of variance, correlation and regression and logistic regression). The course will consist of lectures, discussion and computer analysis. **Prerequisites: PHC 6000**

PHC 6003 - Chronic Disease Epidemiology (3) This course will focus on the presentation and discussion of three chronic diseases which differentially impact minority and economically disadvantaged populations: Cancer, Heart Disease and Diabetes. The course will be in seminar format with lectures by professionals working in the field and presentations by student participants. **Prerequisites: PHC 6000**

PHC 6002 - Infectious Disease Epidemiology (3) This course will focus on the epidemiology of selected infectious diseases, which are of current public health importance and differentially impact minority and socially disadvantaged populations. Potential topics include Sexually Transmitted Diseases, Tuberculosis, Hepatitis, and HIV/AIDS. In addition, new and emerging infections (i.e.) Ebola Hemorrhagic Fever and Hantavirus) will be discussed. This course will be in seminar format with lectures by professionals working in the field and presentations by student participants. **Prerequisites: PHC 6000**

Total 9

Track Courses – Environmental and Occupational Health

PHC 6018 - Environmental Epidemiology (3) This course explores the use of epidemiological principles to the study of occupational and general environmental exposures to contaminants. Information on the types of exposures and outcomes will be covered, as well as epidemiological topics such as sources of data, sampling strategies, tracing and follow-up procedures, data management, and monitoring and surveillance**. Prerequisites: PHC 6000, PHC 6357**

PHC 6317 - Environmental Risk Communication (3) This course focuses on the improvement of communication skills and explores the problems of effectively communicating environmental risk information. It also teaches the student how to place environmental risk information in perspective and motivate individuals to take protective actions. . **Prerequisites: PHC 6357**

PHC 6005 - Occupational Diseases (3) This course discusses occupational disease etiology, natural history, surveillance and treatment. Students will learn about diseases such as pneumoconiosis, airway disease, musculoskeletal problems, cardiovascular, neoplastic, neurological and renal disorders and reproductive disorders, among other diseases. **Prerequisites: PHC 6357**

PHC 6310 - Environmental Toxicology (3) This course provides information on environmental factors, which have the potential to cause adverse health effects. It provides information on the mechanism of action in exposures and the effect on living organisms. **Prerequisites: PHC 6357**

PHC 6355 - Topics in Occupational Health (3) This course provides students with a basic understanding of the field of occupational hygiene, which entails the recognition, evaluation, and control of occupational exposures. The course also discusses selected, contemporary topics in occupational health. Much of the course focuses on specific chemicals and physical agents that affect large numbers of workers in the US and worldwide. Important OSHA standards are also discussed. **Prerequisites: PHC 6357**

Total 9

Online Master of Public Health Program
Fall Semester

Track Courses Health Policy and Management

PHC 6160-Economic Aspects of Health Care (3) This course emphasizes how problems in the pricing and distribution of health care servies affect public and private financing of health services in the United States. Topics that will be covered include public and private investments in producing health services, hospital and physician models, markets and competitiojnin health care, and regulation and financing of hospital and primarycare servies. Special emphasis will be placed on examining the relationships between principles of health care economics and the development and organization of managed care delivery systems. **Prerequisites: PHC 6102**

PHC 6761 Public Health Programs Evaluation (3) This course will introduce a range of research methods and techniques used in designing and conducting health services research with a special emhasis on program evaluation. Topics include formulation of the evaluation question; research design; sampling techniques; data collection methods; data interpretation; and ethical, logistical and political considerations in c onducting evaluation studies. Special attention will be paid to conducting health services and program evaluation in community based public health programs. This course will also examine the role of evaluation in health

care decision making, including the application of qualitative and quantitative research methods. **Prerequisites: PHC 6102**

PHC 6705 Health Outcomes Research and Health Care (3) Health care outcomes as a field of study is of critical importance to health care research. Not only do we judge wellness in part by health care outcomes, but we also set (in many cases) the standard(s) for delivering effective medical care when positive outcomes are achieved. Positive health care outcomes are very much a function of effective disease management practice. This course of study will provide students with the conceptual tools for assessing health care outcomes and health care.

Fall Semester

Core Courses (10)		**Sem. Hrs.**
PHC 6100	Introduction to Public Health	3
PHC 6050	Biostatistics for Public Health Practice I	3
PHC 6050L	Biostatistics for Public Health Practice Lab	1
PHC 6357	Public Health Perspectives of Environmental and Occupational Health	3

Spring Semester Core Courses/Seminar (9)

PHC 6000	Introduction to Epidemiology	3
PHC 6560	Principles of Behavioral Science and Health Education	3
PHC 6102	Principles of Health Policy and Management	3

Summer Semester
Practice/Research Methods Courses (10)

PHC 6934 Topics in Public Health	3
PHC 6704 Applied Community-Based Research Methods	3
PHC 6605 Public Health Ethics for Health Professionals	3
PHC 6931 Public Health Seminar	1

Fall Semester
Track and Practice Courses (12)

PHC 6936	Public Health Practice for Health Professionals I	3
PHC 6003	Chronic Disease Epidemiology	3
PHC 6310	Environmental Toxicology for Health Science Professionals	3
PHC 6506	Planning and Evaluation of Health Education	3
PHC 6160	Economic Aspects of Health Care	3

Spring Semester
Culminating Experience (9)

PHC 7937	Public Health Practice for Health Professionals II	2
PHC 7946	Public Health Internship	6
PHC 7965	Comprehensive Exam	1

DrPH Curriculum Requirements

Behavioral Science & Health Education - Doctor of Public Health Curriculum
78-Hour Curriculum

Public Health Core (22 Credits)

PHC 6100	Introduction to Public Health	3
PHC 6050	Biostatistics for Public Health Practice-I	3
PHC 6050L	Biostatistics	1
PHC 6357	Public Health Perspectives of Environmental and Occupational Health	3
PHC 6000	Introduction to Epidemiology	3
PHC 6560	Principles of Behavioral Science and Health Education	3
PHC 6102	Principles of Health Policy and Management	3
PHC 6934	Topics in Public Health	3
	TOTAL	**22**

BS/HE Core Courses (9 Credits)

PHC 6506	Planning & Evaluation of Health Ed Programs	3
PHC 6444	Community Organizing & Public Health	3
PHC 7504	Advanced Theory in Health Education	3
TOTAL		**9**

Health Education Concentration (15 Credits)

PHC 7750	Advanced Health Program Evaluation	3
PHC 7714	Health Education Seminar	3
PHC 7715	Plan & Admin of Health Education Program	3
PHC 6441	Health Inequities in American Populations	3
PHC 6419	Principles of Global Health	3

Electives (3 Credits)

PHC 6532	Current Issues in Women's Health	3
PHC 6411	Principles of Social Marketing	3
PHC 7530	Maternal and Child Health Epidemiology	3
PHC 6601	Introduction to Public Health Genomics	3
PHC xxxx	Health Communication	3
	See "Additional Electives"	
		18

Research Methods Core (9 Credits)

PHC 6704	Applied Community-Based Research	3
PHC 6051	Advanced Biostatistics for Public Health	3
PHC or PHA	Additional biostatistics or epi research course	3
TOTAL		**9**

Research and Practicum (21 credits)

PHC 7981	Doctoral Research in Public Health	3 (minimum)
PHC 7945	Practicum in Public Health	4 (minimum)
PHC 8981	Doctoral Research Protocol	1
PHC 8966	Comprehensive Examination	1
PHC 7980	Doctoral Dissertatio (3x4 credits)	12 hour (minimum)
PHC 8983	Dissertation Defense	1
		21
TOTAL		***78**

* Includes registered hours for comprehensive exam, proposal defense, dissertation defense (2-3 hours)

60-Hour Curriculum
Behavioral Science & Health Education - Doctor of Public Health Curriculum

BS/HE Core Courses (9 Credits)

PHC 6506	Planning & Evaluation of Health Ed Programs	3
PHC 6444	Community Organizing & Public Health	3
PHC 7504	Advanced Theory in Health Education	3
TOTAL		**9**

Health Education Concentration (15 Credits)

PHC 7750	Advanced Health Program Evaluation	3
PHC 7714	Health Education Seminar	3
PHC 7715	Plan & Admin of Health Education Program	3
PHC 6441	Health Inequities in American Populations	3
PHC 6419	Principles of Global Health	3

Electives		**6**
PHC 6532	Current Issues in Women's Health	3
PHC 6411	Principles of Social Marketing	3
PHC 7530	Maternal and Child Health Epidemiology	3
PHC xxxx	Health Communication Research	3
PHC 6601	Introduction to Public Health Genomics	3
	Additional electives may be chosen with advisor	

		21

Research Methods Core (9 credits)

PHC 6704	Applied Community-Based Research Methods	3
PHC 6051	Advanced Biostatistics for Public Health Practice	
PHC or PHA	Additional Biostatistics	3
TOTAL		**6**

Research and Practicum (21 credits)

PHC 7981	Doctoral Research in Public Health	3 (minimum)
PHC 7945	Practicum in Public Health	4 (minimum)
PHC 8981	Doctoral Research Protocol	1
PHC 8966	Comprehensive Examination	1
PHC 7980	Doctoral Dissertation (3x4 credits)	12 (minimum)
PHC 8983	Dissertation Defense	1
		21

TOTAL HOURS*60 hours

* Includes registered hours for comprehensive exam, proposal defense, dissertation defense (2-3 hours)

PUBLIC HEALTH CORE

PHC 6100 Introduction to Public Health: This course is designed to introduce participants to the principles, theories, concepts methodologies involved in the study of public health at the community, state, and national levels. The course will primarily provide a forum to discuss the history of public health, public health and disease, identification and analysis of community assessment data, and functions, tools, activities and results of public health practice.

PHC 6050 and PHC 6050L Biostatistics for Public Health Practice I and Lab: This course covers basic statistical techniques that are important for analyzing data arising from public health, environmental health, epidemiology, biomedical and pharmaceutical research. Applications of biostatistical methods to real data are stressed. Understanding of basic concepts will be emphasized through problem solving and examples using real-data sets. Major topics include elements of sampling design, descriptive statistics, graphical data presentation, rates and standardization, life tables, probability, sampling distributions, estimation and hypothesis testing, tests of significance, comparison of two means and proportions, confidence intervals, measures of association, relative risk, odds ratio, Mantel-Haenszel. The computer is used throughout the course, and the student will gain familiarity with SAS. There will be computer lab sessions each week.

Prerequisite: Basic knowledge of mathematics and familiarity with computers.

PHC 6000 Epidemiology-I (Introduction to Epidemiology): This course is designed to introduce participants to the theories, concepts, and tools of Epidemiology. Specifically, the course will focus on the application of these theories and concepts to the practice of Public Health. Topics to be discussed include epidemiological and statistical terminology, quantification of disease, disability and health in population groups, vital statistics and reportable disease mechanisms, procedures for infectious and chronic disease control.

Prerequisite: Permission of the Instructor

PHC 6357 Public Health Perspectives of Environmental and Occupational Health: The APPLIED public health course will consider the public's viewpoint of environmental and occupational effects, the role of state, local and federal agencies in protecting public health, and the perception of risk. In addition, the roles of community groups and other organizations will be discussed, as will the issues surrounding environmental justice and environmental equity, and common terminology in environmental and occupational health.

PHC 6560 Principles of Behavioral Science and Health Education: This course will introduce students to the principles, theories, concepts, and methodologies involved in the study of health behavior and community education. The course will primarily provide a forum to discuss the foundations of health behavior and health education, models of individual and interpersonal health behavior, community health and susceptible populations, community and group intervention models of health behavior

PHC 6102 Principles of Health Policy and Management: This course will consider major aspects of American health care policy. The first half of the course will provide a comprehensive review of general principles underlying federal, state, and private reforms aimed at controlling costs, expanding access, protecting quality and assuring the public's health. We will identify the forces, both internal and external to local, State, and federal governments, which influence health policy decisions.

PHC 6934 Topics in Public Health: This course will introduce the student to current topics in public health. The course will primarily provide a forum for critical review of the current public health literature and the oral presentation of public health information. Presentations may cover such topics as asthma, rural health care policy, lead poisoning prevention, bio-terrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases

CORE COURSES IN BEHAVIORAL SCIENCE & HEALTH EDUCATION

PHC 6506 Planning and Evaluation of Health Education Programs: This course will introduce the participant to the principles, concepts, and methodologies involved in planning and evaluation of health education programs. Participants in this course will learn and apply models of program planning, as well as models and methodologies of program evaluation as related to health education programming.

PHC 6444 Community Organizing and Public Health: This course will introduce students to community organizing from an historical, healthcare, and health education perspective. Students will gain knowledge about basic community organizing, leadership development, building organizations, grassroots fundraising, prejudice and power, accountability, strategy, tactics, holding actions, and, identifying issues. This course is designed to teach students the knowledge and skills to assist communities in creating change and increase participation in being a healthy community.

PHC 7504 Advanced Theory in Health Education: This course is designed to introduce students to models used for behavioral science and the development of health promotion programs. Students will be taught and asked to apply the theories to develop behavior change programs for individuals, organizations and systems. Students will be encouraged to combine theories to address the particular populations.

BEHAVIORAL SCIENCE AND HEALTH EDUCATION CONCENTRATION COURSES

PHC 7750 Advanced Health Program Evaluation: Theory and applications of original behavioral research: hypothesis generation, specifications of study aims and population, selection of measurement, data collection, design and analytical techniques, and preparation of evaluation research report.

PHC 7714 Health Education Seminar Series: This Seminar serves as a vehicle for doctoral students to present and discuss conference papers, current research and research proposals.

PHC 7715 Planning and Administration of Health Education and Promotion Programs: Examines administration of health education and promotion programs in schools, communities, and worksites; goals, advantages, and special concerns of working in each of these settings.

PHC 6441 Health Inequities in American Populations: This

course will offer wide exposure to contemporary practice and research issues in the field of health disparities, allowing students to sample a number of topics. The class will concentrate on the identification of mechanisms underlying health disparities and evidence-based models to close the multitude of urban rural and national health gaps. Gaps in health based on gender, race, ethnicity, age, socioeconomic status, sexual orientation and geographical location will be covered.

PHC 6419 Principles of Global Health: This course introduces students to the global context of public health, to major concepts and methods in global health and to dimensions of public health particular to international setting; Examines major themes and policies in global health; and analyzes health problems and varying responses n different parts of the world, particularly in resource-poor societies. This course also examines the historical.

ELECTIVES

PHC 6532 Current Issues in Women's Health: This course will be an analysis of the historical, social and psychological aspects of women's health from a public health perspective. Special emphasis is placed on the lifecycle challenges and chronic conditions from underserved communities. The course focuses on the presentation and discussion of chronic diseases which differentially impact minority and economically disadvantaged populations; i.e. Cancer, Heart Disease, Diabetes, Stroke, Accidents. The course will be in seminar format with lectures by professionals working in the field, presentations by student participants. Course readings will be assigned by the instructor.

PHC 6411 Principles of Social Marketing: Focuses on changing the voluntary behaviors of a society (e.g., smoking, diet, exercise habits). Students learn how to apply marketing techniques and concepts to societal contexts like preventive health, education and politics.

PHC 7530 Maternal and Child Health Epidemiology: Reading, Analyzing and Interpreting the Public Health and Medical Literature: This course provides the opportunity to analyze, interpret and critique original research articles. Assignments consist of oral and written reviews of recently published papers. A literature review paper on a topic chosen by the student is also required. Student presentations are supplemented by didactic instruction on topics critical to evaluating study validity (e.g. subject selection, bias, confounding, laboratory methods, results presentation, quality control, and statistical analyses). Library search skills and bibliographic database development will also be covered. Upon completion, students will have learned how to critically analyze and interpret research findings and how to present for publication. Class will be limited to 10. Familiarity with basic epidemiology methods, including study design and statistical analyses will be assumed.

PHC 6601 Introduction to Public Health Genomics: This course will introduce the participant to basic genetics and the relevance of genomics to such key public health issues as ethnic health disparities, environmental health, health policy and law, research ethics, maternal and child health, clinical preventive medicine, health behavior, health economics, and communicable disease control.

Consult with your advisor for additional electives

RESEARCH METHODS CORE

PHC 6704 Applied Community-Based Research Methods: Research Methods in Public Health focuses on the design and analysis of sample surveys. A brief introduction to questionnaire design and evaluation will be followed by a discussion of sample design techniques. Estimation methods, including calculation and use of sampling weights, and variance estimation methods. Quantitative and qualitative methods that are relevant for data collection analysis of important problems in public health will be covered. **Prerequisite: Biostatistics for Public Health Practice-I, Introduction to Epidemiology**

PHC 6051 Biostatistics for Public Health Practice II: This course is the second part of biostatistics. Emphasis is given to applied biostatistical methods to health data and concepts and methods will be illustrated using examples. Major topics include nonparametric methods, regression analysis, analysis of variance, logistic regression, and survival analysis. The computer is used throughout the course, and the student will gain familiarity with STATA. **Prerequisite: Biostatistics for Public Health Practice-I**

PHC XXXX Research Methods in Public Health: Research Methods in Public Health focuses on the design and analysis of sample surveys. A brief introduction to questionnaire design and evaluation will be followed by a discussion of sample design techniques. Estimation methods, including calculation and use of sampling weights, and variance estimation methods. Quantitative and qualitative methods that are relevant for data collection analysis of important problems in public health will be covered. Prerequisite: Biostatistics for Public Health Practice-I, Introduction to Epidemiology

Research and Practicum

PHC 7981 Advanced Research in Public Health Practice: The student will pursue supervised research under the guidance of his/her research advisor with ongoing assessment of progress by research advisor. The student will be expected to develop expertise in techniques and the theories related to their research that will be used in the preparation, conduct and completion of the doctoral dissertation. The student will demonstrate a strong foundation by presenting their research findings at scientific meetings. Also, the student will be supervised in the development of bibliographic development and manuscript and grant writing skills.

PHC 8966 Comprehensive Examination

PHC 7945 Doctoral Practicum in Public Health: The goal of the doctoral practicum is to provide students with opportunities to interact with other health care professionals in a setting that will enhance their knowledge and skills in the subject area of their dissertation.

PHC 8981 Doctoral Research Protocol: This course satisfies the requirement for doctoral students to conceptualize, write, propose, present, and defend the proposal for the dissertation research. This course is the same as PHA 8968.

PHC 7980 Dissertation Research: Research for doctoral candidates for completion of the doctoral dissertation. The student will complete a supervised original research project and write a scholarly dissertation based on the completed research. The student will demonstrate mastery of the field and expertise in the research by a successful open defense of the dissertation.

PHC 8983 Dissertation Defense

78-Hour Curriculum
Epidemiology and Biostatistics Doctor of Public Health Curriculum

Public Health Core (22 Credits)		**Credit Hrs.**
PHC 6100	Introduction to Public Health	3
PHC 6050	Biostatistics for Public Health Practice-I	3
PHC 6050L	Biostatistics Lab	1
PHC 6357	Public Health Perspectives of Environmental and Occupational Health	3
PHC 6000	Introduction to Epidemiology	3
PHC 6560	Principles of Behavioral Science and Health Education	3
PHC 6102	Principles of Health Policy and Management	3
PHC 6934	Topics in Public Health	3
TOTAL		**22**

Epidemiology Core Courses (9 Credits)		
PHC 6011	Advanced Epidemiology Methods	3
PHC 6003	Epidemiology of Chronic Disease	3
PHC 6002	Epidemiology of Infectious Disease	3
TOTAL		**9**

Biostatistics Core Courses (12 Credits Minimum)

PHC 6051	Biostatistics for Public Health Practice-II	3
PHC 6709	Statistics and Computer Methods in Public Health	3
PHC 6059	Applied Regression Analysis	3 hours
PHC 6708	Methods for Categorical Data Analysis	3
PHC 7711	Applied Survival Analysis	3
PHC 3536	Techniques of Demographic Analysis	3

Epidemiology Concentration (15 credits Minimum)

PHC 7902	Directed Readings in Epidemiology	3
PHC 6902	Directed Readings in Biostatistics	3
PHC 7020	Design, Conduct and Analysis of Clinical Trials	3
PHC 7021	Clinical Epidemiology	3
PHC 6194	Geographical Information Systems	3
PHC 7076	Cancer Epidemiology	3
PHC 7077	Cardiovascular Disease Epidemiology	3
PHC 7xxx	Epidemiology of STDs and HIV/AIDS	3
PHC 7xxx	Epidemiology of Emerging & Re-emerging Diseases	3
PHC 7530	Maternal and Child Health Epidemiology	3

Research and Practicum (21 credits Minimum)

PHC 7981	Doctoral Research in Public Health	3 (minimum)
PHC 7945	Practicum in Public Health	4 (minimum)
PHC 8981	Doctoral Research Protocol	1
PHC 8966	Comprehensive Examination	1 hour
PHC 7980	Doctoral Dissertation (3x4 credits)	12 (minimum)
PHC 8983	Dissertation Defense	1
TOTAL	*	**78**

* Includes registered hours for practicum, comprehensive exam, proposal defense, dissertation defense (6 hours)

60-Hour Curriculum

Epidemiology and Biostatistics
Doctor of Public Health Curriculum

Public Health Core (3 Credits)

PHC 6934	Topics in Public Health	3

Epidemiology Core Courses (9 Credits)

PHC 6011	Advanced Epidemiology Methods	3
PHC 6003	Epidemiology of Chronic Disease	3
PHC 6002	Epidemiology of Infectious Disease	3
		9 hours

Biostatistics Core Courses (12 Credits Minimum)

PHC 6051	Biostatistics for Public Health Practice-II	3
PHC 6709	Statistics and Computer Methods in Public Health	3
PHC 6059	Applied Regression Analysis	3
PHC 6708	Methods for Categorical Data Analysis	3
PHC 7711	Applied Survival Analysis 3 hours	
PHC 3536	Techniques of Demographic Analysis	3

Epidemiology Concentration (15 credits Minimum)

PHC 7902	Directed Readings in Epidemiology	3
PHC 6902	Directed Readings in Biostatistics	3
PHC 7020	Design, Conduct and Analysis of Clinical Trials	3
PHC 7021	Clinical Epidemiology	3
PHC 6194	Geographical Information Systems	3
PHC 7076	Cancer Epidemiology	3
PHC 7077	Cardiovascular Disease Epidemiology	3
PHC 7xxx	Epidemiology of STDs and HIV/AIDS	3
PHC 7xxx	Epidemiology of Emerging & Re-emerging Diseases	3
PHC 7530	Maternal and Child Health Epidemiology	3

Research and Practicum (21 credits minimum)

PHC 7981	Doctoral Research in Public Health	3 (minimum)
PHC 7945	Practicum in Public Health	4 (minimum)
PHC 8981	Doctoral Research Protocol	1
PHC 8966	Comprehensive Examination	1
PHC 7980	Doctoral Dissertation (3x4 credits)	12 (minimum)
PHC 8983	Dissertation Defense	1

TOTAL HOURS* 60 hours

* Includes registered hours for practicum, comprehensive exam, proposal defense, dissertation defense (6 hours)

PUBLIC HEALTH CORE

PHC 6100 Introduction to Public Health: This course is designed to introduce participants to the principles, theories, concepts methodologies involved in the study of public health at the community, state, and national levels. The course will primarily provide a forum to discuss the history of public health, public health and disease, identification and analysis of community assessment data, and functions, tools, activities and results of public health practice.

PHC 6050 and PHC 6050L Biostatistics for Public Health Practice I: This course covers basic statistical techniques that are important for analyzing data arising from public health, environmental health, epidemiology, biomedical and pharmaceutical research. Applications of biostatistical methods to real data are stressed. Understanding of basic concepts will be emphasized through problem solving and examples using real-data sets. Major topics include elements of sampling design, descriptive statistics, graphical data presentation, rates and standardization, life tables, probability, sampling distributions, estimation and hypothesis testing, tests of significance, comparison of two means and proportions, confidence intervals, measures of association, relative risk, odds ratio, Mantel-Haenszel. The computer is used throughout the course, and the student will gain familiarity with SAS. There will be computer lab sessions each week. Prerequisite: Basic knowledge of mathematics and familiarity with computers.

PHC 6000 Epidemiology-I (Introduction to Epidemiology): This course is designed to introduce participants to the theories, concepts, and tools of Epidemiology. Specifically, the course will focus on the application of these theories and concepts to the practice of Public Health. Topics to be discussed include epidemiological and statistical terminology, quantification of disease, disability and health in population groups, vital statistics and reportable disease mechanisms, procedures for infectious and chronic disease control.

Prerequisite: Permission of the Instructor

PHC 6357 Public Health Perspectives of Environmental and Occupational Health:

The APPLIED public health course will consider the public's viewpoint of environmental and occupational effects, the role of state, local and federal agencies in protecting public health, and the perception of risk. In addition, the roles of community groups and other organizations will be discussed, as will the issues surrounding environmental justice and environmental equity, and common terminology in environmental and occupational health.

PHC 6560 Principles of Behavioral Science and Health Education: This course will introduce students to the principles, theories, concepts, and methodologies involved in the study of health behavior and community education. The course will primarily provide a forum to discuss the foundations of

health behavior and health education, models of individual and interpersonal health behavior, community health and susceptible populations, community and group intervention models of health behavior

PHC 6102 Principles of Health Policy and Management: This course will consider major aspects of American health care policy. The first half of the course will provide a comprehensive review of general principles underlying federal, state, and private reforms aimed at controlling costs, expanding access, protecting quality and assuring the public's health. We will identify the forces, both internal and external to local, State, and federal governments, which influence health policy decisions.

PHC 6934 Topics in Public Health: This course will introduce the student to current topics in public health. The course will primarily provide a forum for critical review f the current public health literature and the oral presentation of public health information. Presentations may cover such topics as asthma, rural health care policy, lead poisoning prevention, bio-terrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases

CORE COURSES IN EPIDEMIOLOGY

PHC 6011 Epidemiology-II (Advanced Epidemiology): The advanced Epidemiology Course focuses on in-depth examinations of study design, analysis, and interpretation of epidemiologic data. Included in this course is the study of advanced statistical methods as they apply to epidemiologic data (analysis of variance, correlation and regression, and logistic regression). This course will consist of lecture, discussion and computer assignments. **Prerequisite: Epidemiology-I, Biostatistics for Public Health Practice-I**

PHC 6003 Epidemiology of Chronic Disease: The course focuses on the presentation and discussion of chronic diseases which differentially impact minority and economically disadvantaged populations; i.e. Cancer, Heart Disease, Diabetes, Stroke, Accidents. The course will be in seminar format with lectures by professionals working in the field, presentations by student participants. Course readings will be assigned by the instructor.

PHC 6002 Epidemiology of Infectious Disease: This course will focus on the epidemiology of selected infectious diseases which are: (1) of public health importance today, (2) differentially impact minority and disadvantaged populations and (3) are emerging and are of potential public health importance. Topics include Sexually Transmitted Diseases, arthropod-borne infections, HIV/AIDS, Tuberculosis, Enteric Diseases, transmission patterns, and mathematical models. This course will be in seminar format with lectures by professionals working in the field and presentations by student participants. Additional course readings will be assigned by the instructor.

CORE COURSES IN BIOSTATISTICS

PHC 6051 Biostatistics for Public Health Practice – II (3 credits): This course is the second part of biostatistics. Emphasis is given to applied biostatistical methods to health data and concepts and methods will be illustrated using examples. Major topics include nonparametric methods, regression analysis, analysis of variance, logistic regression, and survival analysis. The computer is used throughout the course, and the student will gain familiarity with STATA.Prerequisite: Biostatistics for Public Health Practice-I

PHC 6709 Statistical and Computer Methods in Health Data (3 credits): This course will introduce course participants to the processes of data management in the field of Epidemiology and Biostatistics. Specifically, participants will learn to utilize a variety of currently available software packages for data management. These include SAS, SPSS, Microsoft Excel, and Microsoft Access. **Prerequisite: Biostatistics-I, facility with microcomputers**

PHC 7059 Applied Survival Analysis (3 credits): This course covers commonly used statistical methods for the analysis of lifetime data in the biomedical, behavioral, and social sciences. Basic concepts associated with survival analysis such as censoring, hazard functions, and survivorship functions will be reviewed. Common analytical approaches such as Kaplan-Meier estimation, log-rank tests and proportional hazards regression will also be reviewed and covered in more depth. Additional topics include parametric survival distributions, accelerated failure time modeling, competing risks, duration modeling, quality-of-life-adjusted survival analysis, and design considerations. Computational approaches using statistical software will be emphasized. **Prerequisites: Biostatistics for Public Health Practice I, II**

PHC 6708 Modern Methods for Categorical Data Analysis (3 credits):This course covers both theory and methods for drawing inference from discrete categorical data. Topics to be covered include contingency tables, measures of association, goodness-of-fit, loglinear models, model mis-specification, and special experimental design structures such as repeated measures and matched pairs. **Prerequisite: Biostatistics for Public Health Practice I, II**

PHC 6059 Applied Regression Analysis (3 credits): This course will present a unified treatment of modern regression models for discrete and continuous data focusing on practical applications to medical and health data. Topics include multiple linear and nonlinear regression for continuous response data, model diagnostics, analysis of variance and covariance, logistic regression, Poisson regression for count data, and Cox regression for censored survival data. **Prerequisite:** Biostatistics for Public Health Practice I, II

PHC 6712 Techniques of Demographic Analysis: This course covers procedures and techniques for the collection, evaluation, and analysis of demographic data; census and vital registration systems, surveillance systems, and population surveys. It investigates both direct and indirect method of estimation. It introduces measures of population and composition and of fertility, morality, morbidity and migration; construction of life tables, population estimates, and projections. The Census data and statistical software will be used to demonstrate the concepts and various techniques.

Prerequisite: Biostatistics for Public Health Practice I, II

EPIDEMIOLOGY CONCENTRATION

PHC 7902 Directed Readings in Epidemiology and Biostatistics: Reading, Analyzing and Interpreting the Public Health and Medical Literature: This course provides the opportunity to analyze, interpret and critique original research articles. Assignments consist of oral and written reviews of recently published papers. A literature review paper on a topic chosen by the student is also required. Student presentations are supplemented by didactic instruction on topics critical to evaluating study validity (e.g. subject selection, bias, confounding, laboratory methods, results presentation, quality control, and statistical analyses). Library search skills and bibliographic database development will also be covered. Upon completion, students will have learned how to critically analyze and interpret research findings and how to present for publication. Familiarity with basic epidemiology methods, including study design and statistical analyses will be assumed.

PHC 7021 Introduction to Clinical Epidemiology: This course will help students learn or refine the skills of Clinical Epidemiology, defined as the study and management of illness in individuals as well as populations using methods. Individual and group sessions will develop techniques of constructive critical appraisal of the medical literature, illustrated by examples from general health, cardiovascular disease and diabetes. Students will learn how to assess studies of prognosis or outcomes of illness, treatments, diagnostic tests and screening programs, as well as the basic requirements for randomized clinical trials.

Epidemiology of HIV/STDs: This course provides in-depth discussion of bacterial and viral sexually transmitted disease syndromes of importance in developed and developing countries. Control and prevention strategies are emphasized. This course is also designed to provide students with the knowledge and

skills to manage complex methodologic issues involved in the epidemiology of HIV/AIDS. The epidemiology of HIV/AIDS encompasses clinical, behavioral, political, ethical and methodologic components that are also relevant to other diseases found in both chronic and infectious disease epidemiology.

PHC 7709 Cancer Epidemiology: The objectives of this course are to familiarize students with central topics in cancer epidemiology and prevention, including cancer biology, research methods, and applied cancer control; provide students with an opportunity to develop an in-depth understanding of an etiology-specific cancer process; provide students with hands-on experience in conducting cancer epidemiology and prevention research; familiarize students with various facets of funding, including grant writing and reviewing. Nutritional etiology is covered.

PHC 7530 Maternal and Child Health Epidemiology: Reading, Analyzing and Interpreting the Public Health and Medical Literature: This course provides the opportunity to analyze, interpret and critique original research articles. Assignments consist of oral and written reviews of recently published papers. A literature review paper on a topic chosen by the student is also required. Student presentations are supplemented by didactic instruction on topics critical to evaluating study validity (e.g. subject selection, bias, confounding, laboratory methods, results presentation, quality control, and statistical analyses). Library search skills and bibliographic database development will also be covered. Upon completion, students will have learned how to critically analyze and interpret research findings and how to present for publication. Class will be limited to 10. Familiarity with basic epidemiology methods, including study design and statistical analyses will be assumed.

PHC 7077 Cardiovascular Disease Epidemiology: Reviews current concepts of the etiology of cardiovascular diseases, including heart disease, stroke, and peripheral vascular diseases. The emphasis is on the interrelationship between epidemiology and current concepts of pathophysiology. Critiquing of articles will be included in most sessions.

PHC 6194 Geographical Information Systems (2 Credits): The Introduction to GIS course will cover the input, storage, management, transformation, analysis and graphical output of Geographical Information Systems and how GIS is applied to a variety of spatial geographical problems in public health and epidemiology. The lectures will cover general theories, methodologies and applications of GIS while the exercises will be based on using and implementing one of many GIS packages currently available, ArcGIS, developed by one of the leading professional GIS companies, ESRI (Environmental Systems Research Institute). The lectures and exercises will provide the student background to design his/her own independent project and how to implement a GIS for your own dissertation work.

Research and Practicum

PHC 7981 – Advanced Research in Public Health Practice: The student will pursue supervised research under the guidance of his/her research advisor with ongoing assessment of progress by research advisor. The student will be expected to develop expertise in techniques and the theories related to their research that will be used in the preparation, conduct and completion of the doctoral dissertation. The student will demonstrate a strong foundation by presenting their research findings at scientific meetings. Also, the student will be supervised in the development of bibliographic development and manuscript and grant writing skills.

PHC 8966 – Comprehensive Examination

PHC 7945 – Doctoral Practicum in Public Health: The goal of the doctoral practicum is to provide students with opportunities to interact with other health care professionals in a setting that will enhance their knowledge and skills in the subject area of their dissertation.

PHC 8981 – Doctoral Research Protocol: This course satisfies the requirement for doctoral students to conceptualize, write, propose, present, and defend the proposal for the dissertation research. This course is the same as PHA 8968.

PHC 7980 - Dissertation Research: Research for doctoral candidates for completion of the doctoral dissertation. The student will complete a supervised original research project and write a scholarly dissertation based on the completed research. The student will demonstrate mastery of the field and expertise in the research by a successful open defense of the dissertation.

PHC 8983 – Dissertation Defense

Additional Courses in Public Health

Research Methods in Public Health: Research Methods in Public Health focuses on the design and analysis of sample surveys. A brief introduction to questionnaire design and evaluation will be followed by a discussion of sample design techniques. Estimation methods, including calculation and use of sampling weights, and variance estimation methods. Quantitative and qualitative methods that are relevant for data collection analysis of important problems in public health will be covered. **Prerequisite:** Biostatistics for Public Health Practice-I, Introduction to Epidemiology

PHC 6317 Environmental Health Risk (3 credits): This course provides students with a comprehensive understanding of the environmental factors impacting human health, including the consequences of natural and human-made disasters. The relative contribution of individual consumer choice, political economy and government policies to local, national and global environmental health will be explored. Issue areas to be covered include: exposure assessment, burden of disease, toxicology risk assessment, communication and risk management.

PHC 6018 Environmental Epidemiology

The purpose of this course is to review and present epidemiologic principles and concepts that apply to the methodology, analysis and interpretation of studies on adverse health effects due to environmental exposure that impact communities. It will concentrate on the study of the effect on human health of the physical, biologic and chemical factors in the external environment, broadly conceived from the epidemiologic point of view. This course will prepare students to function effectively as environmental epidemiologists in the environmental/public health arena. The knowledge base and skills that are the focus of this course, are fundamental to the scope of work expected of individuals working in environmental epidemiology and in particular the community health assessment process. The course focuses on epidemiologic approaches to activities that are a routine part of the investigation of adverse human health effects in community settings.

College of Science and Technology

On July 1, 2012, Florida A&M University's (FAMU) College of Arts and Sciences formally divided into the College of Science and Technology and the College of Social Sciences, Arts and Humanities. The primary mission of the College of Science and Technology is to deliver outstanding innovative instruction, conduct high-quality research, and provide impactful service. To accomplish this mission, the college provides opportunities for qualified students (1) to acquire the fundamentals of a liberal education, (2) to acquire a mastery of basic competencies and skills, (3) to obtain excellent preparation for professional and graduate study, and (4) to concentrate in several fields offered in the College of Science and Technology.

The college is organized into five (5) degree-granting departments in the fields of biology, chemistry, computer and information sciences, mathematics and physics. The college offers 15 separate majors leading to the Bachelor of Science degree. It also offers master's-level programs in biology, chemistry, computer science and physics; and the doctorate in physics.

Students enrolled in the College of Science and Technology have several curricula to choose from that are offered by the college. They may also take courses offered in other colleges and schools of the University, which, with the approval of the department chairperson, may be included in the degree program, used as a minor field of concentration, or used as electives. In order to graduate, undergraduate students are required to maintain a minimum cumulative GPA of 2.0 and a grade of "C" or above in all major and minor courses; graduate students must have a minimum cumulative GPA of 3.0. Some programs may have requirements for graduation that are above the minimum. All directed individual study (DIS) courses must be approved by the supervising professor, the chairperson and the dean. Prior approval by the dean is required for all transient credit.

Admission Requirements

Prospective applicants for admission to the College of Science and Technology are encouraged to review the admission requirements of the University as stated elsewhere in this catalog.

Requirements for Bachelor of Science Degree

I. Completion of minimum of 120 semester hours, including the following courses:

A. ENC 1101, 1102 Freshman Communicative Skills	(6)
B. Math (See individual departmental requirements)	(6)
C. Science (see individual departmental requirements)	(6)
D. Humanities (see individual departmental requirements)	(6)
E. Completion of AMH 2091 or any AFA prefix course, and one course from the approved social sciences course list	(6)
F. Free or Discipline Electives	(4-6)

II. Completion of major (see departmental requirements).

Requirements for Major

Each candidate for the B.S. degree must complete a major of thirty (30) semester hours (except in areas which specify more) in one of the disciplines in the departments listed below:

1. Biology
2. Chemistry
3. Computer and Information Sciences
4. Mathematics
5. Physics

Requirements for Minor

In consultation with his or her advisor, candidates for the B.S. degree may complete a minor area of concentration in which a minimum of eighteen (18) semester hours are earned.

Requirements for a Second Major

A student seeking a second major should consult with the chairperson of the department in which the second major is offered. To earn a degree in a second discipline, all requirements for the discipline must be met. For example, a mathematics major who selects political science as a second major must complete all of the required political science courses, as well as required cognate courses, such as improving writing, speech, principles of economics and others. A separate application for graduation must be approved and submitted by the appropriate department chairperson for each degree sought.

College of Science and Technology Administration

Dean: Dr. Maurice Edington
Associate Dean: Dr. Sonya Stephens
Assistant Dean: Dr. Lewis Johnson
Coordinator, Academic Programs: Ms. Edna Cofield
A**dministrative Assistant:** Ms. Gail Garrett
Office Manager: Ms. Lakeysha Footman
College Recruiter: Dr. Cynthia Jones

Department of Biological Sciences

Concentration in Molecular & Cellular Biology
Concentration in Pre-Medicine/Pre-Dentistry
Concentration in Biology

Course Descriptions

The Department of Biology's mission is to provide training for students in two important and growing career fields: Healthcare and STEM. Students will become highly qualified individuals to lead the changing economical and societal landscape of the 21st century.

The department is dedicated to providing contemporary quality undergraduate and graduate education. The structure of the program affords students an opportunity to gain a wide breadth of exposure in the field of biology. Students develop competency in the use of modern biological techniques, critical thinking, analysis, interpretation and presentation of data.

Part of the mission is to create opportunities for students to conduct research. Students are well prepared to enter the workforce or continue with graduate or professional schools; such as medical, dental, or pharmacy. The department serves non-majors, as well, such as contributing to the development of nursing and allied health majors. It exposes other students to biological concepts that impact their lives. The faculty and staff of the Department of Biology strive to always provide "Excellence with Caring."

Faculty

Professors: Latinwo, Lekan; Adams, James; Hacisalihoglu, Gokan
Associate Professors: Gottschalk,Virginia;Long,Richard;Odewumi, Caroline
Assistant Professors: Gibbon, Bryan; Humann, Jessica; Katam, Ramesh; Khalil, Rafaat; McCollum, Adrian; Reneau, Paulette; Sawicki, Thomas; Thomas, LeeShawn; Thornton, Michael
Instructor: Elhag, Rashid
Graduate Coordinator: Reis, Olayinka
Academic Advisor: Banks, Letina
Office Manager: Jean-Funny, Attania

Bachelor of Science in Biology
(Concentration in Molecular & Cellular Biology)

Freshman Year

Fall Semester	**Sem. Hrs.**
BSC 1010 General Biology I Lecture	3
BSC 1010L General Biology Lab I	1
BSC 3926 Professional Development for Biology	2
MAC 1105 College Algebra	3
ENC 1101 Freshman Communication Skills I	3
CHM 1045 General Chemistry I Lecture	3
CHM 1045L General Chemistry I Lab	1
Total	**16**

Freshman Year

Spring Semester	**Sem. Hrs.**
BSC 1011 General Biology II Lecture	2
BSC 1011L General Biology II Lab	2
CHM 1046 General Chemistry II Lecture	3
CHM 1046 L General Chemistry II Lab	1
ENC 1102 Freshman Communications Skills II	3
MAC 1114 Trigonometric Functions	3
Total	**14**

Sophomore Year

Fall Semester	**Sem. Hrs.**
PCB 2033 Ecology	3
Humanities Elective	3
MAC 2311 Calculus I	4
CHM 2210 Organic Chemistry I Lecture	3
CHM 2210L Organic Chemistry I Lab	1
Total	**14**

Sophomore Year

Spring Semester	**Sem. Hrs**.
BSC 2093 Anatomy Physiology I Lecture	3
BSC 2093L Anatomy Physiology I Lab	1
CHM 2211 Organic Chemistry II Lecture	3
CHM 2211L Organic Chemistry II Lab	1
Humanities Elective	3
Social Science Elective	3
Total	**14**

Sophomore Year

Summer Semester	**Sem. Hrs.**
STA 2023 Statistics	3
AMH 2091 Introduction to African American History or AFA 3104 The African American Experience	3
Total	**6**

Junior Year

Fall Semester	**Sem. Hrs.**
PCB 3063C Genetics	4
Biology Elective	3
BCH 4033 Biochemistry I Lecture	3
BCH 4033L Biochemistry I Lab	1
PHY 2048 General Physics I	4
PHY 2048L General Physics I Lab	1
Total	**16**

Junior Year

Spring Semester	**Sem. Hrs.**
BOT 2313 Plant Anatomy OR 3303 Plant Morphology	3
MCB 3020C Microbiology	4
BCH 4034 Biochemistry II Lecture	3
BCH 4034L Biochemistry II Lab	1
PHY 2049 General Physics II	4
PHY 2049L General Physics II Lab	1
Total	**16**

Senior Year

Fall Semester	**Sem. Hrs.**
PCB 4233 Immunology	3
Biology Elective	3
PCB 4023 Molecular Cell Biology	4
Free Elective (2000 level or above)	3
Total	**13**

Senior Year

Spring Semester	**Sem. Hrs.**
PCB 3723 Vertebrate Physiology Lecture	3
PCB 3723 Vertebrate Physiology Lab	1
PCB 4024C Advanced Molecular Cell Biology	3
Biology Elective	3
BSC 4930 Professional Seminar	1
Total	**11**
TOTAL	**120**

Bachelor of Science in Biology
(Concentration in Pre-Medicine/Pre-Dentistry)

Freshman Year

Fall Semester	**Sem. Hrs.**
BSC 1010 General Biology I Lecture	3
BSC 1010L General Biology I Lab	1
CHM 1045 General Chemistry I Lecture	3
CHM 1045L General Chemistry I Lab	1
MAC 1105 College Algebra	3
BSC 3926 Professional Development for Biology	2
ENC 1101 Freshman Communication Skills I	3
Total	**16**

Freshman Year	
Spring Semester	**Sem. Hrs.**
BSC 1011 General Biology II Lecture	2
BSC 1011L General Biology II Lab	2
CHM 1046 General Chemistry II Lecture	3
CHM 1046L General Chemistry II Lab	1
ENC 1102 Freshman Communication Skills II	3
MAC 1114 Trigonometric Functions	3
Total	**14**

Sophomore Year	
Fall Semester	**Sem. Hrs.**
PCB 2033 Ecology	3
CHM 2210 Organic Chemistry I Lecture	3
CHM 2210L Organic Chemistry I Lab	1
Humanities Elective	3
MAC 2311Calculus I	4
Total	**14**

Sophomore Year	
Spring Semester	**Sem. Hrs.**
BSC 2093 Anatomy Physiology I Lecture	3
BSC 2093L Anatomy Physiology I Lab	1
CHM 2211 Organic Chemistry II Lecture	3
CHM 2211L Organic Chemistry II Lab	1
Humanities Elective	3
PSY 2012 Psychology	3
Total	**14**

Sophomore Year	
Summer Semester	**Sem. Hrs.**
STA 2023 Statistics	3
AMH 2091 Introduction to African American History or AFA 3104 The African American Experience	3
Total	**6**

Junior Year	
Fall Semester	**Sem. Hrs.**
PCB 3063C Genetics	4
MCB 3020C Microbiology	4
BCH 4033 Biochemistry I Lecture	3
BCH 4033L Biochemistry I Lab	1
PHY 2048 General Physics I	4
PHY 2048L General Physics I Lab	1
Total	**17**

Junior Year	
Spring Semester	**Sem. Hrs.**
BOT 2313 Plant Anatomy OR 3303 Plant Morphology	3
BSC 2094 Anatomy Physiology II Lecture	3
BSC 2094L Anatomy Physiology II Lab	1
BCH 4034 Biochemistry II Lecture	3
BCH 4034L Biochemistry II Lab	1
PHY 2049 General Physics II	4
PHY 2049L General Physics II Lab	1
Total	**16**

Senior Year	
Fall Semester	**Sem. Hrs.**
BSC 4930 Professional Seminar	1
ZOO 3653 Developmental Anatomy	3
PCB 4233 Immunology	3
Free Elective (above 2000 level)	3
Total	**10**

Senior Year	
Spring Semester	**Sem. Hrs.**
Biology Elective	3
Biology Elective	3
PCB 4023 Molecular Cell Biology Lecture	3
PCB 4023L Molecular Cell Biology Lab	1
Free Elective (above 2000 level)	3
Total	**13**
TOTAL	**120**

Bachelor of Science in Biology

Freshman Year	
Fall Semester	**Sem. Hrs.**
BSC 1010 General Biology I Lecture	3
BSC 1010L General Biology I Lab	1
MAC 1105 College Algebra	3
ENC 1101 Freshman Communication Skills I	3
CHM 1045 General Chemistry I Lecture	3
CHM 1045L General Chemistry I Lab	1
BSC 3926 Professional Dev for Biology	2
Total	**16**

Freshman Year	
Spring Semester	**Sem. Hrs.**
BSC 1011 General Biology II Lecture	2
BSC 1011L General Biology II Lab	2
CHM 1046 General Chemistry II Lecture	3
CHM 1046L General Chemistry II Lab	1
ENC 1102 Freshman Communication Skills II	3
MAC 1114 Trigonometric Functions	3
Total	**14**

Sophomore Year	
Fall Semester	**Sem. Hrs.**
Humanities Elective	3
CHM 2210 Organic Chemistry I Lecture	3
CHM 2210L Organic Chemistry I Lab	1
Social Science Elective	3
MAC 2311 Calculus I	4
Total	**14**

Sophomore Year	
Spring Semester	**Sem. Hrs.**
BSC 2093 Anatomy Physiology I Lecture	3

BSC 2093 Anatomy Physiology I Lab	1
CHM 2211 Organic Chemistry II Lecture	3
CHM 2211L Organic Chemistry II Lab	1
Humanities Elective	3
PCB 2033 Ecology	3
Total	**14**

Sophomore Year

Summer Semester	**Sem. Hrs.**
STA 2023 Statistics	3
AMH 2091 Introduction to African American History or AFA 3104 The African American Experience	3
Total	**6**

Junior Year

Fall Semester	**Sem. Hrs.**
PCB 3063C Genetics	4
MCB 3020C Microbiology	4
BCH 4033 Biochemistry I Lecture	3
BCH 4033L Biochemistry I Lab	1
PHY 2048 General Physics I	4
PHY 2048L General Physics I Lab	1
Total	**17**

Junior Year

Spring Semester	**Sem. Hrs.**
BOT 2313 Plant Anatomy OR 3303 Plant Morphology	3
BCH 4034 Biochemistry II Lecture	3
BCH 4034 Biochemistry II Lab	1
PCB 4674 Evolutionary Biology	3
PHY 2049 General Physics II	4
PHY 2049L General Physics II Lab	1
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
ZOO 4513 Animal Behavior	3
Biology Elective	3
PCB 4023 Molecular Cell Biology	4
Free Elective (2000 level or above)	3
Total	**13**

Senior Year

Spring Semester	**Sem. Hrs.**
PCB 3723 Vertebrate Physiology Lecture	3
PCB 3723 Vertebrate Physiology Lab	1
Biology Electives	6
BSC 4930 Professional Seminar	1
Total	**11**
TOTAL	**120**

Course Descriptions

BOT 2313C Plant Anatomy and Development (3) Prereq: BSC 1010 and 1011. Structure and development of higher plants in relationship to functions. Lecture and lab.

BOT 3303 Plant Morphology (3) Prereq: BSC 1010 and 1011. Plant forms, their habitat, general features, means of reproduction, and plant evolution. Lecture/Lab.

BSC 1005 Biological Science (3) Study of basic biological principles. Topics include cell structure, genetics, diversity of organisms, physiology and ecology. Lectures/lab for non-majors.

BSC 1005L Biological Science (1) Study of basic biological principles. Topics include cell structure, genetics, diversity of organisms, physiology and ecology. Laboratory for non-majors.

BSC 1010 General Biology I (3) General biological principles and cell function for biology and other health science majors. Must earn a "C" Grade to advance. Lecture.

BSC 1010L General Biology I (1) General biological principles and cell function for biology and other health science majors. Must earn a "C" Grade to advance. Lab.

BSC 1011 General Biology II (2) Prereq: BSC 1010. Deals with protists, fungi plant and animal biology for biology and other health science majors. Must earn a "C" grade to advance. Lecture.

BSC 1011L General Biology II (2) Prereq: BSC 1010. Deals with protists, fungi plant and animal biology for biology and other health science majors. Must earn a "C" grade to advance. Lab.

BSC 2093 Anatomy and Physiology (3) Prereq: BSC 1005C or BSC 1010, CHM 1020 or CHM 1045. Normal structure and physiology of the skeleton, muscle, and nervous systems. Lecture.

BSC 2093L Anatomy and Physiology I Lab (1) Prereq BSC 1010L Systems of cat as a mammalian model including muscles, bones.

BSC 2094 Anatomy and Physiology II (3) Prereq: BSC 2093. Continuation of BSC 2093 with emphasis on the cardiovascular, respiratory, excretory, digestive, endocrine, reproductive and special senses systems. Lecture

BSC 2094L Anatomy and Physiology II Lab (1) Prereq: BSC 2093L. Continuation of BSC 2093 and deals with cardiovascular, digestive, renal, and reproductive systems (non-majors).

BSC 3926 Professional Development for Biology (2) A course designed for biology majors to participate in seminars given by scientists and to engage in activities for professional development.

BSC 4434 Bioinformatics (3) Prereq: STA 2023 and PCB 4023C

BSC 4930 Biology Pro-seminar I (1) Techniques of scientific research writing, preparation, and presentation of paper in area of biological science.

BSC 4931 Biology Pro-seminar II (1) Prereq: BSC 4930. Continuation of preparation and presentation of paper in area of biological science.

BSC 4936 Special Topics in Biological Sciences (variable 1-4).

MCB 3005C Microbiology (4) Prereq: BSC 1005 and CHM 1030. An introductory microbiology course for nursing and other majors. Lecture and lab.

MCB 3020C Microbiology (4) Prereq: BSC 1011 and CHM 1046. Biology of microorganisms and viruses including taxonomy and pathogenic relationships. Lecture and lab.

PCB 2033C Introduction to Ecology (3) Prereq: BSC 1011 and CHM 1045. Emphasis of fundamental concepts of ecology such as ecosystems, energy relations, primary and secondary production, nutrient cycling species, population, communities succession, terrestrial and aquatic ecosystems, population and human ecology. Lecture and lab.

PCB 3063C Principles of Genetics (4) Prereq: BSC 1011. Basic principles which control transmission of hereditary characters and factors which cause mutation. Life cycles of representative organisms are also discussed. Lecture and lab.

PCB 3723 Vertebrate Physiology (3) Prereq: BSC 1010, BSC

1010L, BSC 1011, BSC 1011L, CHM 1045, CHM 1045L, CHM 1046, CHM 1046L, CHM 2210, CHM 2210L, CHM 2211, CHM 2211L, PCB 3063C, PHY 2053, PHY 2053L and PHY 2054 or currently enrolled. Course deals with body fluids and functions of cells, tissues and organ systems. Lecture.

PCB 3723L Vertebrate Physiology Lab (1) Experimental demonstration of cardiovascular, muscular, respiratory, nervous, excretory and reproductive physiology.

PCB 4023C Molecular/Cell Biology (4) Prereq: BSC 1010, BSC 1010L, BSC 1011, BSC 1011L and BCH 4033. Fractionation, structure and function of subcellular organelles. Macromolecular organization of the cell, information transfer and protein synthesis. Lecture and Lab.

PCB 4024C Advanced Molecular Biology (3) Prereq: BSC 1011, BCH 4033 and PCB 3063C. Structure of DNA in organisms, duplication, protein synthesis, analysis of DNA, and genetic engineering. Lecture and Lab.

PCB 4044 Ecological Processes (3) Prereq: PCB 2033L Ecology. Environment, energy transformation by plants and animals, population ecology, communities, species and adaptations to new environments.

PCB 4233 Immunology (3) Prereq: MCB 3020. Introduction to the immune system, Ag/Ab reactions, development of vaccines and the applications.

PCB 4364C Physiological Ecology (3) Prereq: PCB 2033C, CHM 1046. Physiological adaptation of animal species to the environment they inhabit and strategies for homeostasis in changing environments. Systems dealt with are metabolism, osmoregulation, endocrine, biorhythms, sense organs, nervous regulation and reproduction.

PCB 4455 Statistical Procedures (3) Prereq: STA 2023 Statistics. Experimental design, collection of data, measurement of data, estimation and testing. Analysis of variance, least squares, linear regression and correlation, multivariate statistics.

PCB 4674 Evolutionary Biology (3) Prereq: PCB 2033C and PCB 3063. Theories of origin of life, theories of evolution, evidences, sources of variation, natural selection, populations, isolating mechanisms, evolution above species level. A synthesis of biological concepts.

ZOO 2203 Invertebrate Zoology (2) Prereq: BSC 1011. Advanced study of taxonomy, physiology, life history, and ecology of invertebrates. Porifera through the protochordata covered. Lecture.

ZOO 2203L Invertebrate Zoology Lab (1) A lab course that surveys taxonomy and structure of invertebrate.

ZOO 3653C Developmental Anatomy (Embryology) (3) Prereq: BSC 1011 and BSC 1011L. Comparative development of vertebrate embryos with special emphasis on the chicken and frog; developmental genetics and cellular differentiation. Lecture and Lab.

ZOO 3713C Comparative Vertebrate Anatomy (4) Prereq: BSC 1011, BSC 1011L and ZOO 3653. Comparative study of organ systems of vertebrates. Laboratory dissections of selected types. Lecture/Lab.

ZOO 3753C Histology (4) Prereq: ZOO 3653 and ZOO 3713. Microscopic anatomy and ultrastructure of normal cells, tissues and organs. Tissue preparation and staining techniques. Lecture and lab.

ZOO 4233 Parasitology (2) Prereq: ZOO 3653 and ZOO 3713. Study of animal parasitology with emphasis on medical and veterinary forms. Taxonomy, structure and host-parasite interactions considered. Lecture.

ZOO 4233L Parasitology Lab (1) A survey of the parasitic animals, life histories and their economic importance.

ZOO 4513 Animal Behavior (3) Prereq: BSC 1010 and BSC 1011. The behavior of animals. Modern perspectives.

Biology Master of Science

A program of study leading to a Master of Science in Biology is offered by the Department of Biological Sciences in the College of Science and Technology. This program is designed to develop competency in the field of biology at the graduate level and also competency in research methods essential for pursuing doctoral studies.

The program offers three areas of specialization: Cell and Molecular Biology, Physiology and Ecology. After completing the core courses, the student may choose one of the three curricula and also a topic for thesis research. If the prerequisites for any of the courses have not been completed, the student must make up the deficiencies prior to taking the required courses. The details of the program are given below.

Faculty

Professors: Latinwo, Lekan; Adams, James; Hacisalihoglu, Gokan

Associate Professors: Gottschalk, Virginia; Long, Richard; Odewumi, Caroline

Assistant Professors: Gibbon, Bryan; Humann, Jessica; Katam, Ramesh; Khali, Rafaat; McCollum, Adrian; Reneau, Paulette; Sawicki, Thomas; Thomas, LeeShawn; Thornton, Michael

Instructor: Elhag, Rashid

Graduate Coordinator: Reis, Olayinka

Academic Advisor: Banks, Letina

Office Manager: Jean-Funny, Attania

ADMISSION REQUIREMENTS
(Thesis and Non-Thesis Option)

A candidate must meet the university-level admission requirements for graduate school.

ACADEMIC REQUIREMENTS
(Thesis and Non-Thesis Option)

The Department of Biological Sciences offers degree programs for three specialty tracks, Molecular and Cell Biology, Physiology, and Ecology. The information contained in this curriculum guide has been especially prepared for students who wish to obtain a MS degree in any of the three tracks.

The program offers a Thesis based degree with emphasis on development of research and a Non-thesis based degree with an emphasis on coursework. All students admitted into the program must declare the thesis or non-thesis option tract by the end of their first semester. A declaration form can be obtained from and submitted to the Biology Graduate Coordinator.

A. General Information (Thesis Option)

i. Master's degree requirements should be met in four to six semesters.

ii. A student must complete 31 credit hours of graduate credit courses, which consist of the core courses and 15 graduate elective credits in their chosen track.

iii. Graduate courses are designated as 5000-level and above.

iv. At the discretion of a student's supervisory committee, 4000-level courses (offered in another department) may be considered toward the graduate credit requirement.

v. A thesis student must register each semester in BSC 5971 (Master's Thesis), for a minimum of one (1) credit hour until the degree is awarded.

vi. A thesis student must take a minimum of 6 semester hours of thesis credit.

vii. A thesis student must enroll in BSC 5935 (Graduate Seminar) each semester of residence.

viii. If the prerequisites for any of the courses have not been completed, the student must make up the deficiencies prior to taking the required courses.

ix. A thesis student must submit a satisfactory master's prospectus*.

x. Thesis students must complete an acceptable research thesis*.

xi. All students in the program must pass their comprehensive examination*.

xii. Thesis students must conduct a successful oral defense of their thesis*.

xiii. Thesis students are required to demonstrate teaching experience in at least one biology laboratory course recommended by the student's supervisory committee.

* As determined by the Thesis supervisory committee.

B. General Information (Non-Thesis Option)

i. Master's degree requirements should be met in four to six semesters.

ii. Non-thesis students are required to successfully complete forty-two (42) semester hours.

iii. Non-thesis students must satisfactorily complete the core courses, at least fifteen (15) credit hours in their respective concentration and twelve (12) elective graduate credit hours in any biological sciences area.

iv. Graduate courses are designated as 5000-level and above.

v. At the discretion of a student's supervisory committee, 4000-level courses (offered in another department) may be considered toward the graduate credit requirement.

vi. A non-thesis student must enroll in BSC 5935 (Graduate Seminar) each semester of residence.

vii. A non-thesis students must take the comprehensive exam upon completion of their coursework.

viii. If the prerequisites for any of the courses have not been completed, the student must make up the deficiencies prior to taking the required courses.

ix. A non-thesis student must submit and defend a satisfactory special research project.*

x. A non-thesis student is required to demonstrate teaching experience in at least one biology laboratory course recommended by the student's supervisor committee.

* As determined by the Thesis supervisory committee.

C. Change of Track Between Thesis And Non-Thesis

i. Students who have declared the thesis track must remain in the thesis track unless approved to switch to the non-thesis track. The request to switch must be presented in writing to their supervisory committee through the Biology Graduate Coordinator. The committee will review the request and include their recommendation to the biology graduate committee for final decision, which will be forwarded to the Department Chair.

ii. Students who have declared the non-thesis track may switch to the thesis track by submitting a written request to their supervisory committee through the Biology Graduate Coordinator. The committee will review the request and include their recommendation to the biology graduate committee for final decision, which will be forwarded to the Department Chair.

iii. Track changes must be requested and approved within the first two semesters of residence.

III. COURSES
Core Courses (Thesis and Non-Thesis)

Courses	**Sem. Hrs.**
PCB 5455 Statistical Procedures	3
PCB 5205C Cell Structure and Function	3
BSC 5935 Graduate Seminar	*1
BSC 7912 Graduate Directed Research	1-4
BSC 5971 Thesis	6-12
BSC 6935 Special Topics in Biology (Non-Thesis Student only)	4
BSC 8976 Master's Comprehensive Exam	0
Total	**18-27**

* Students must enroll in graduate seminar each semester of residence*

Elective Courses (Thesis and Non-Thesis)
Molecular and Cell Biology (15 credit hours of electives)

Courses	Sem. Hrs.
PCB 6524 Molecular Biology	4
PCB 5235 Immunology	4
PCB 6525 Molecular Genetics	4
PCB 5595 Principles of Gene Manipulation	4
PCB 5025 Molecular Cell Biology	4

Physiology (15 credit hours of electives)

Courses	Sem. Hrs.
PCB 5204 Cell Physiology	4
PCB 5727 Comparative Animal Physiology	4
PCB 5786 Membrane Physiology	4
PCB 5806 Endocrine Physiology	4
PCH 6835 Neurophysiology	4
ZOO 5890 Developmental Biology	3

Ecology (15 credit hours of electives)

Courses	Sem. Hrs.
PCB 5325 Terrestrial Ecology	4
PCB 5314 Marine Biology	4
PCB 5045 Environmental Biology	3
PCB 5365 Physiological Ecology	4
BSC 6600 Microbial Ecology	4

BSC 5935 Graduate Seminar (1-2) Oral presentations on selected topics in the field of specializations.

BSC 5971 Thesis (1-6) may be accumulated up to a maximum of 15 hours.

BSC 6600 Microbial Ecology (4) Prereq: MCB 3020 Microbiology. Microbes in terrestrial and aquatic habitats, structure of communities, population interactions, abiotic factors, select habitats and ecology, role of microbes in space biology and biotechnology.

BSC 6935 Special Topics in Biology (1-4)

BSC 7912 Graduate Directed Research (1-4)

BSC 8970 Master's Comprehensive Examination (0) Is used to assess the scientific potential of a M. S. Degree aspirant. The written exam is to be taken a) after all didactic coursework is completed, or b) when the student has prepared a formal research proposal which meets the approval of his/her Committee.

PCB 5025 Molecular and Cellular Biology (4) Prereq: PCB 3063 Genetics. Cell structure, role of genes, DNA replication, genetic recombination and regulation of genetic expression.

PCB 5045 Environmental Ecology (3) Global environment, global warming, air pollution, acid rain, ozone layer, species populations, environments, and pathological effects of pollutants on organisms.

PCB 5046 Ecological Processes (3) Prereq: PCB 3033. Population ecology, communities, and ecosystem junction. Emphasis on regulatory processes in the holistic function of ecosystems.

PCB 5205C Cell Structure and Function (3) Prereq: BSC 1011 and BSC 1011L. Subcellular structures as related to their biochemical and physiological role.

PCB 5235 Immunology (4) Prereq: BCH 4034 Biochemistry. Natural and acquired immunity, theories of antigen-antibody formation, humoral and cell-mediated systems, nature of antibodies, monoclonal antibodies and practical applications.

PCB 5307 Limnology (4) Prereq: PCB 3033 Ecology. Lotic and lentic systems, limiting factors, producers, primary production, food webs, total production, populations, species niches, holistic function, freshwater marshes, alternations of systems.

PCB 5314 Marine Ecology (4) Prereq: PCB 3033. Ocean environment and subdivisions, characteristics and subdivisions and ecology of communities, interspecific relationships and regulatory processes.

PCB 5325 Terrestrial Ecology (4) Prereq: PCB 3033 Ecology. Types of terrestrial systems, soils, vegetation formation, species ordination, biomes species distributions, ecological succession, colonization, stability, and preservation.

PCB 5365 Physiological Ecology (4) Prereq: PBC 3033 Ecology, Comparative Physiology. Terrestrial environment, plant adaptations, freshwater animals and activities, marine organisms and physiology, esturine adaptations, desert organisms and response to stress.

PCB 5455 Statistical Procedures (3) Prereq: STA 3053. Experimental design, data collection, measurement, estimation and testing. Analysis of variance, regression and correlation and multivariate statistics.

PCB 5595 Principles of Gene Manipulation (4) Prereq: PCP 4024 Molecular Biology. Maintenance of E. coli molecular cloning with Lambda phage vectors, cloning with plasmids, cloning with M13 vectors, and sequencing of DNA and RNA genetic probes.

PCB 5665 Human Genetics (2) Prereq: PCB 3063C and BCH 4033. Basic principles and mechanisms of human genetics. Several hereditary disorders will be discussed and impact of genetic counseling examined.

PCB 5674 Evolutionary Biology (3) Prereq: PCB 3063C. The theories of origin of life. Processes of evolution at population and phyletic levels, sources of variation, and detailed discussion of evidence. A synthesis of biological concepts.

PCB 5727 Comparative Animal Physiology (4) Prereq: PCB 3743. Vertebrate Physiology. Environment, adaptation. Thermal regulation, osmoregulation, renal physiology, respiration, circulation, sensory perception, and endocrine function.

PCB 5786 Membrane Physiology and Biophysics (4) Prereq: PCB 4023 Cell Biology. Cell membrane, permeation, active transport, bulk transport, action potentials, propagation of action potentials, and contractility.

PCB 5806 Endocrine Physiology (4) The emphasis is on vertebrate hormones. Types and chemistry of hormones; actions of pituitary, thyroid, parathyroid, thymus, adrenal hormones, control of reproductive cycles and hormones in development; and mechanisms of hormone action and regulation of function.

PCB 6524 Molecular Biology (4) Prereq: PCB 4023 Cell Biology. Classes of macromolecules, nucleic acids, DNA technology, proteins, DNA replication, mutagenesis and mutations, protein synthesis, regulation of gene activity, and recombinant DNA and genetic engineering.

PCB 6525 Molecular Genetics (4) Prereq: PCB 3063. Genetics, gene structure, chromatin, DNA replication, transcription, protein synthesis, gene expression and regulation, oncogenes, DNA cloning, and genetic engineering.

PCB 6835 Neurophysiology (4) Prereq: PCB 3743 Vertebrate Physiology. Divisions of the nervous system, membrane potentials, propagation of action potentials, synapses and nerve conduction, nerve tracts and ganglia functions, brain, spinal cord, and autonomic nervous system.

ZOO 5215 Advanced Invertebrate Biology (4) Prereq: ZOO

3203. Discussions of physiology, ecology and evolution of invertebrate animals.
ZOO 5690 Developmental Biology (4) Prereq: ZOO 3653. Developmental Anatomy. Fundamental concepts, gametogenesis, fertilization, gastrulation, differentiation, and organogenesis.

Chemistry: Bachelor of Science

The Mission of the Department of Chemistry is to provide students with a strong background in the concepts and theories of chemistry, and to equip them with problem-solving and critical thinking skills in preparation for pursuing advanced degrees and careers in chemistry and chemistry-related areas.

The department is approved by the American Chemical Society (ACS) and every program is certified by the ACS. The chemistry faculty has developed a program to meet the needs of undergraduate students who desire to pursue research careers, graduate studies in chemistry or studies toward careers in medicine or dentistry.

The Bachelor of Science (Chemistry) is designed to prepare students for immediate employment or graduate training. The Bachelor of Science (Pre-Medicine/Pre-Dentistry) is designed for students who plan careers in medicine or dentistry. The Bachelor of Science (Biochemistry) is designed to prepare students for careers in biochemistry, biotechnology, dentistry, medicine or graduate training.

No chemistry course with a grade below "C" will be accepted as credit toward a major or minor in chemistry.

Requirements for the Minor in Chemistry - A minor in chemistry requires completion of the following chemistry courses with a grade of "C" or better: CHM 1045-1046, CHM 1045L-1046L, CHM 2210-2211, CHM 2210L-2211L plus an additional four (4) semester hours of chemistry courses approved by the department.

Faculty
Professors: Edington, Maurice; Edwards, Jesse; Ikediobi, Christopher O.; Turner, Ralph W.; Ugochukwu, Ngozi H.
Associate Professors: Bouyer, James; Mateeva, Nelly; Musa, Musiliyu; Onyeozili, Edith
Assistant Professors: Mochona, Bereket; Nag, Anita; Senevirathne, Keerthi
Office Manager: Simmons, Marlon

Undergraduate Program Course Requirements
Bachelor of Science Degree in Chemistry
(Chemistry, Code: A4201)

Freshman Year	**Sem. Hrs.**
ENC 1101/1102 Freshman Communication Skills I, II	6
*CHM 1045/1046 General Chemistry I, II	6
*CHM 1045L/1046L General Chemistry I and II Labs	2
CHM 1901/1902 Freshman Special Topics	2
*MAC 2311/2312 Calculus I and II	8
BSC 1010/1011 General Biology I, II w/ Labs	8
Total	**32**

Sophomore Year	**Sem. Hrs.**
CHM 2903/2904 Sophomore Special Topics	2
CHM 3120/3120L Analytical Chemistry w/Lab	4
*CHM 2210/2211 Organic Chemistry I, II	6
*CHM 2210L/2211L Organic Chemistry I, II Lab	2
CHM 3610 Intermediate Inorganic Chemistry	3
*PHY 2048/2049 General Physics I, II w/Labs	10
Approved Humanities Elective	3
Total	**30**

Junior Year	**Sem. Hrs.**
BCH 4033/4034 Biochemistry I, II w/Labs	8
CHM 4410/4411 Physical Chemistry I, II w/Lab	8
AMH 2091 African American History	3
Approved Computer Science Elective	3
Approved Humanities Elective	3
Approved Social Science Elective	3
CHM 3905, 3906 Junior Special Topics I, II	2
Total	**30**

Senior Year	**Sem. Hrs.**
CHM 4220 Advanced Organic Chemistry	3
CHM 4130/4130L Instrumental Analysis w/Lab	4
CHM 4930 Chemistry Seminar	1
BCH 4042 Proteins	3
Approved Chemistry Elective	3
Approved Science Electives	11
CHM 4900 Short Courses in Chemistry	3
Total	**28**
	120

* This is a State Common Prerequisite. Substitutions indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science Degree in Chemistry
(Biochemistry, Code: A4204)

Freshman Year	**Sem. Hrs.**
ENC 1101/1102 Freshman Communication Skills I, II	6
*CHM 1045/1046 General Chemistry I, II	6
*CHM 1045L/1046L General Chemistry I and II Labs	2
CHM 1901/1902 Freshman Special Topics	2
*MAC 2311/2312 Calculus I and II	8
Approved Humanities Electives	6
Total	**30**

Sophomore Year	**Sem. Hrs.**
CHM 2903/2904 Sophomore Special Topics	2
*CHM 2210/2211 Organic Chemistry I, II	6
*CHM 2210L/2211L Organic Chemistry I, II Labs	2
CHM 3610 Intermediate Inorganic Chemistry	3
*PHY 2048/2049 General Physics I, II w/Labs	10
BSC 1010/1011 General Biology I, II w/ Labs	8
Total	**31**

Junior Year	**Sem. Hrs.**
CHM 3905/3906 Junior Special Topics	2
BCH 4033/4034 Biochemistry I, II w/Labs	8

CHM 4400/4401 Physical Chemistry for Life Science I, II	6
CHM 4402L Physical Characterization of Biomolecules	2
AMH 2091 African American History	3
Approved Biology Elective	8
Total	**29**

Senior Year	**Sem. Hrs**
CHM 4220 Advanced Organic Chemistry	3
BCH 4042 Proteins	3
BCH 4044 Nucleic Acids	3
CHM 3120/3120L Analytical Chemistry w/Lab	4
CHM 4130/4130L Instrumental Analysis w/Lab	4
CHM 4930 Chemistry Seminar	1
Approved Computer Science Elective	3
Approved Social Science Elective	3
Approved Biology Elective	4
Approved Electives	2
Total	**30**
TOTAL	**120**

* This is a State Common Prerequisite. Substitutions indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science Degree in Chemistry
(Pre-Medicine/Pre-Dentistry, Code: A4203)

Freshman Year	**Sem. Hrs.**
ENC 1101/1102 Freshman Communication Skills I, II	6
*CHM 1045/1046 General Chemistry I, II	6
*CHM 1045L/1046L General Chemistry I and II Labs	2
CHM 1901/1902 Freshman Special Topics	2
Approved Humanities Electives	6
MAC 2311/2312 Calculus I, II	8
Total	**30**

Sophomore Year	**Sem. Hrs.**
CHM 2903/2904 Sophomore Special Topics	2
*CHM 2210/2211 Organic Chemistry I, II	6
*CHM 2210L/2211L Organic Chemistry I, II Labs	2
CHM 3610 Intermediate Inorganic Chemistry	3
*PHY 2048/2049 General Physics I, II w/Labs	10
BSC 1010/1011 General Biology I, II w/ Labs	8
Total	**31**

Junior Year	**Sem. Hrs.**
CHM 3905/3906 Junior Special Topics	2
BCH 4033/4034 Biochemistry I, II w/Lab	8
CHM 4400/4401 Physical Chemistry for Life Science I, II	6
CHM 4402L Physical Characterization of Biomolecules	2
AMH 2091 African American History	3
Approved Biology Electives	8
Total	**29**

Senior Year	**Sem. Hrs.**
CHM 4220 Advanced Organic Chemistry	3
BCH 4042 Proteins	3
BCH 4044 Nucleic Acids	3
CHM 3120/3120L Analytical Chemistry w/Lab	4
CHM 4130/4130L Instrumental Analysis w/Lab	4
CHM 4930 Chemistry Seminar	1
Approved Computer Science Elective	3
Approved Electives	2
Approved Biology Elective	4
Approved Social Science Elective	3
Total	**30**
TOTAL	**120**

* This is a State Common Prerequisite. Substitutions indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Course Descriptions

BCH 4033 Biochemistry I (3) Prereq: CHM 2211 and BSC 1011 with passing grades. Chemistry of biomolecules; amino acids, proteins, carbohydrates and lipids, membranes, enzymes, coenzymes, enzyme kinetics, intermediary metabolism and bioenergetics.

BCH 4033L Biochemistry I Lab (1) Prereq: CHM 2211, CHM 2211L, BSC 1011 and BSC 1011L with passing grades; Co-req: BCH 4033.Experiments on the chemistry of proteins; buffer preparation, organelle separation, chromatography, electrophoresis and protein quantitation.

BCH 4034 Biochemistry II (3) Prereq: BCH 4033 with a passing grade. Continuation of BCH 4033; photosynthesis, replication, transcription, translation, biochemistry of specialized tissues, immunochemistry, gene expression and genetic engineering.

BCH 4034L Biochemistry II Lab (1) Prereq: BCH 4033 and 4033L with passing grades; Co-req: BCH 4034. Experiments on the chemistry of nucleic acids; isolation and manipulation of DNA.

BCH 4042 Proteins (3) Prereq: BCH 4034. Protein structure, function, diversity and the methods used to examine protein structure and function.

BCH 4044 Nucleic Acids (3) Prereq: BCH 4034. Nucleic acid structure, function, diversity and the methods used to examine nucleic acid structure and function.

BCH 4047L Biochemical Research Methods I (1-3) Introduction to protein isolation and characterization; literature review, protein production, extract preparation and screening, spectroscopic characterization of proteins.

BCH 4048L Biochemical Research Methods II (1-3) Introduction to nucleic acid isolation and characterization; literature review, nucleic acid production, site-directed mutagenesis, mutant gene analysis.

CHM 1020 Fundamentals of Chemistry (3) For students not prepared for CHM 1045 as determined by departmental qualifying exam, including SAT/ACT scores. Teaches fundamental skills necessary for problem solving, emphasizing dimensional analysis. Covers basic concepts of chemistry to prepare students for CHM 1045. Includes recitation sessions for individualized student help.

CHM 1025 Introduction to General Chemistry (4) Preparation for taking General Chemistry series; an introduction to the elementary principles of modern chemistry.

CHM 1030 Introductory Chemistry for Non-Science Majors (3) Basic principles of general chemistry including systems of measurement, bonding, nomenclature, mole concept, balanced equations and stoichiometry, solutions, kinetics, and equilibrium emphasizing acid-base behavior.

CHM 1030L Introductory Chemistry for Non-Science Major Laboratory (1) Co-req: CHM 1030. Introduction to basic chemical techniques. Experiments involve simple chemical reactions,

determination of density, and qualitative tests for the determination of inorganic ions in biological fluids.

CHM 1031 Organic Chemistry for Non-Science Major (3) Prereq: CHM 1030 with passing grade. Introduction to organic chemistry. Study of major classes of organic compounds emphasizing carbohydrates, nucleic acids, lipids, amino acids, proteins, and enzymes.

CHM 1031L Organic Chemistry for Non-Science Major Laboratory (1) Prereq: CHM 1030L with passing grade or with department consent. Co-req: CHM 1031. Experiments include basic chemical reactions of alkanes, alkenes, carbohydrates and proteins; chromatography and synthesis of organic compounds.

CHM 1045 General Chemistry I (3) Prereq: CHM 1020/1021 or CHM 1025. Fundamental laws, theories and principles of chemistry are introduced. Topics include properties of matter, nomenclature, reactions, including redox reactions, stoichiometry, gases, thermochemistry, modern atomic theory, bonding and structure, aqueous solutions, and periodic relationships.

CHM 1045L General Chemistry Laboratory I (1) Co-req: CHM 1045. Laboratory course to accompany and provide a deeper and more concrete understanding of topics in CHM 1045. Students are given the opportunity to observe phenomena and obtain practical skills in using various types of laboratory equipment. Emphasis is on following standard safety practice, making careful observations and measurements, and critically analyzing observations and data.

CHM 1046 General Chemistry II (3) Prereq: CHM 1045 with passing grade. This course is a continuation of CHM 1045. Topics include thermodynamics of chemical reactions and changes of state, equilibrium, acid-base theories, chemical kinetics, electrochemistry and descriptive chemistry of main-group and transition elements and their compounds.

CHM 1046L General Chemistry Laboratory II (1) Prereq: CHM 1045/1045L with a passing grade; Co-req: CHM 1046. A laboratory course to accompany CHM 1046. This course is a continuation of CHM 1045L. Students are given opportunities to extend their skills and make careful observations and measurements using various types of laboratory equipment such as burets, pH meters and spectrophotometers. Emphasis is on following standard safety practice and critically analyzing observations and data.

CHM 1901 Freshman Special Topics I (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 1902 Freshman Special Topics II (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 2210 Organic Chemistry I (3) Prereq: CHM 1046 with passing grade. Study of nomenclature and fundamental physical and chemical properties of acyclic and cyclic aliphatic hydrocarbons, alkyl halides, and alcohols, with special emphasis on the relationship of structure to physical and chemical properties; special consideration given to mechanism and stereochemical effects.

CHM 2210L Organic Chemistry I Laboratory (1) Prereq: CHM 1046/1046L with passing grade. Co-req: CHM 2210. Exposes the student to elementary aliphatic syntheses and basic organic chemistry laboratory separation techniques, including distillation, crystallization, extraction, and chromatography; requires written laboratory reports which includes stoichiometric calculations.

CHM 2211 Organic Chemistry II (3) Prereq: CHM 2210 with passing grade. Study of nomenclature and fundamental chemistry of aromatic compounds and aliphatic hydrocarbon derivatives other than halides. Cursory coverage of biomolecules: fats, carbohydrates, amino acids and proteins, including introductory IR and NMR theory and practice in compound identification.

CHM 2211L Organic Chemistry II Laboratory (1) Prereq: CHM 2210/2210L with passing grade. Co-req: CHM 2211. A continuation of CHM 2210L with emphasis on aromatic syntheses and spectroscopic identification of compounds by IR, NMR, polarimetry, and refractometry; requires written laboratory reports.

CHM 2903 Sophomore Special Topics I (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 2904 Sophomore Special Topics II (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 3120 Analytical Chemistry (2) Prereq: CHM 1046 with a passing grade. Topics include a review of stoichiometry, acid-base equilibria, statistical treatment of data, and an introduction to volumetric, gravimetric, potentiometric, and photometric methods of analysis. Chemical equilibria are treated mathematically.

CHM 3120L Analytical Chemistry Laboratory (2) Prereq: CHM 1046 with a passing grade, Co-req: CHM 3120. Titrimetric, gravimetric, photometric, and potentiometric analyses. Emphasis is placed on accuracy and precision in carrying out experimental procedures.

CHM 3610 Intermediate Inorganic Chemistry (3) Prereq: CHM 1046 with passing grade. Basic theory with applications to electronic structure of atoms. Introduction to group theory. Descriptive chemistry. Properties of compounds, including acid-base theories, oxidation-reduction chemistry, and stability. Structure and properties of compounds of transition elements.

CHM 3905 Junior Special Topics I (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 3906 Junior Special Topics II (1) Department consent required. Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies.

CHM 4130 Instrumental Analysis (3) Prereq: CHM 3120. Topics to be covered include: Introductory electronics, optical methods, laboratory computers, and selected instrumental methods including atomic, nuclear magnetic resonance, and infrared spectroscopy.

CHM 4130L Instrumental Analysis Laboratory (1) Prereq: CHM 3120/3120L; Co-req: 4130. Experiments designed to familiarize students with the following: electronic circuits, computer interfacing, infrared spectrophotometry, nuclear magnetic resonance, mass spectrometry, and atomic spectroscopy.

CHM 4220 Advanced Organic Chemistry (3) Prereq: CHM 2211 with passing grade. Molecular orbital theory of covalent

bonding; an in-depth study of free radicals, electrophilic, nucleophilic and elimination reactions; neighboring group participation and different molecular rearrangements. Role of carbocations and carbanions in syntheses, with emphasis on kinetics and cycloadditions; a survey of modern organic reactions including mechanisms.
CHM 4400 Physical Chemistry for Life Science I (3) Prereq: CHM 1046, MAC 2312 amd PHY 2048 with passing grades. Introduction to thermodynamics, chemical equilibria and electrochemistry and their importance in understanding biomolecular structure and function.
CHM 4401 Physical Chemistry for Life Science II (3) Prereq: CHM 4400. Introduction to quantum mechanics, spectroscopy and kinetics, and their importance in understanding biomolecular structure and function.
CHM 4013L Physical Characterization of Biomolecules (2) Prereq: MAC 2312 and PHY 2048 with passing grades; Co-req: CHM 4400/4401. Introduction to the methods used to examine the physical basis of biomolecules and acquaint students with the instruments used.
CHM 4410 Physical Chemistry (3) Prereq: CHM 1046, MAC 2312 and PHY 2048 with passing grade. Quantitative, theoretical approach to basic physiochemical problems with special emphasis on solids, liquids, gases, chemical thermodynamics, equilibria, bioenergetics, solutions, spectroscopy, and kinetics.
CHM 4410L Physical Chemistry I Laboratory (1) Prereq: CHM 1046, MAC 2312 and PHY 2048. Experiments are designed to test theoretical physical chemical principles by examining colligative, thermodynamics and spectroscopic properties of molecules. A research oriented approach toward experimentation will be taken. The use of computer programming and software will be used in conjunction with data analysis.
CHM 4411 Physical Chemistry II (3) Prereq: CHM 4410 and PHY 2049 with passing grade. Detailed emphasis given to transport properties, electrical conduction, macromolecules, electrochemical cells, quantum mechanisms, atomic structure, statistical mechanics, symmetry, and point groups.
CHM 4411L Physical Chemistry II Laboratory (1) Prereq: CHM 4410 and CHM 4410L with passing grade. The approach and emphasis of CHM 4410L will be continued. Computer software for molecular model building and mathematical modeling of experiments will be used. The study of biological molecules will be emphasized.
CHM 4900 Short Courses in Chemistry (1-4) Prereq: Consent of the department. Research course working with faculty.
CHM 4930 Chemistry Seminar (1) Prereq: Consent of the department. Weekly discussions/ presentations of current chemical topics by students, faculty, and invited speakers. Each student is required to prepare a scientific paper on a chemistry topic and present an oral seminar to faculty and peers.

Chemistry: Master of Science
The Department of Chemistry offers both a thesis and a non-thesis option leading to the Master of Science degree in Chemistry. The thesis option is designed to provide students with advanced course work and experience in chemical research. This option is desirable for students to engage in chemical research or continue graduate studies toward the Ph.D. degree.

Admissions: All candidates for admission to the chemistry department for the M.S. degree must possess a bachelor's degree in chemistry from an accredited institution of higher learning. They must earn a grade point average of 3.0 or better over the junior and senior years of undergraduate study. Applicants must also take the Graduate Record Examination (GRE).

Faculty and Staff
Professors: Edington, Maurice; Edwards, Jesse; Ikediobi, Christopher O.; Turner, Ralph W.; Ugochukwu, Ngozi H.
Associate Professors: Bouyer, James; Mateeva, Nelly; Musa, Musiliyu; Onyeozili, Edith
Assistant Professors: Mochona, Bereket; Nag, Anita; Senevirathne, Keerthi
Office Manager: Simmons, Marlon

ADMISSION REQUIREMENTS

A candidate must meet the university-level admission requirements for graduate school.

Course Requirements: All students pursuing the M.S. Degree in Chemistry are required to complete a minimum of thirty-one (31) semester hours. Each student must complete sixteen semester hours of core courses as listed below:

Core Courses	**Hrs.**
BCH 5041 Protein Biochemistry	3
CHM 5155 Chemical Separations Methods	3
CHM 5225 Advanced Organic Chemistry	3
CHM 5460 Chemical and Statistical Thermodynamics	3
CHM 5620 Inorganic Chemistry Principles	3
CHM 6935 Graduate Chemistry Seminar	1

Students following the thesis track must complete, in addition to the core courses,

- Three (3) hours of elective courses,
- Twelve (12) hours of thesis research. Upon consultation with the major professor up to six (6) of these hours may be substituted with elective courses.
- A successful oral presentation and defense of an acceptable thesis based on original laboratory research.
- Students following the non-thesis option must complete, in addition to the core courses, nine (9) hours of electives and an approved project for three (3) semester hours. A written report, acceptable to the department, should be submitted at the end of the project.

Elective Courses	**Hrs.**
BCH 5043 Enzymology	3
BCH 5045 Nucleic Acids	3
BCH 5046 Physical Biochemistry	3
BCH 5049 Metabolism	3
BCH 5055 Cell Biochemistry	3
BCH 5275 Membranes	3
BCH 5280 Bioenergetics	3
CHM 5142 Electronic Instrumentation for Chemical Analysis	3
CHM 5150 Advanced Analytical Chemistry	3

CHM 5151 Spectrochemical Analysis Methods	3
CHM 5152 Optical Spectroscopy for Chemical Analysi	3
CHM 5262 Physical Organic Chemistry	3
CHM 5301 Bio-Organic Chemistry	3
CHM 5380 Topics in Organic Synthesis	3
CHM 5440 Chemical Kinetics	3
CHM 5480 Quantum Chemistry	3
CHM 5490 Chemical Spectroscopy	3
CHM 5513 X-Ray Crystallography	3
CHM 5540 Chemical Applications of Group Theory	3
CHM 5650 Structural Methods in Inorganic Chemistry	3
CHM 5931 Special Topics in Chemistry	2-5
CHM 5971 Graduate Thesis in Chemistry	Varies

All students must satisfy the following additional requirements:
1. Maintain a cumulative GPA of at least 3.0 on a 4.0 scale.
2. Achieve a passing grade (70%) on a written comprehensive examination.

Graduate Course Descriptions

BCH 5041 Protein Biochemistry (3) Principles underlying protein structure and diversity and the methods used to examine protein function; amino acids, peptides, polypeptides, three-dimensional structure, functional diversity, protein dynamics, transport mechanisms; fibrous structures, global structures, protein characterization.

BCH 5043 Enzymology (3) Reactions catalyzed by enzymes and the mechanisms used to break and make chemical bonds; aqueous solutions, thermodynamic principles, amino acids, techniques of enzyme purification, covalent structures, three-dimensional structures, enzyme active sites, allosteric sites, enzyme regulation, reaction rates and catalytic mechanisms.

B**CH 5045 Nucleic Acids** (3) Principles of DNA structure, replication, transcription and translation; nucleic acid structure, nucleoproteins, DNA replication, DNA repair, DNA manipulation, RNA synthesis and processing, protein synthesis, protein targeting, protein turnover and regulation of gene expression in prokaryotes and eukaryotes.

BCH 5046 Physical Biochemistry (3) Principles of thermodynamics, kinetics and quantum mechanics and their relationship to biochemical processes; biological macromolecules, molecular thermodynamics, separation methods, spectroscopy, linear and circular dichroism, emission spectroscopy, nuclear magnetic resonance, x-ray diffraction, chemical equilibria, solutions and transport processes.

BCH 5049 Metabolism (3) Principles of carbohydrate, lipid, nucleic and amino acid metabolism; metabolic strategies, glycolysis, gluconeogenesis, pentose phosphate pathway, tricarboxylic acid cycle, electron transport pathway, oxidative phosphorylation, photosynthesis, nitrogen fixation, amino a3cid metabolism, nucleotide metabolism and integration3 of metabolism.

BCH 5055 Cell Biochemistry (3) Cellular interaction of biomolecules and the biochemical processes and systems that depend upon them.

BCH 5275 Membranes (3) Structure and function of biological membranes and their biochemical processes.

BCH Bioenergetics (3) Energy consumption and production in biochemical systems.

CHM 5142 Electronic Instrumentation for Chemical Analysis (3) Review of Basic circuits for AC and DC signals. Amplifiers, operational amplifiers, and other circuits used for analog signal processing. Modulation and demodulation techniques. Introduction to digital electronics, A-D/D-A converters. Microprocessors and introduction to computer control of chemical instrumentation. S/N enhancement methods.

CHM 5150 Advanced Analytical Chemistry (3) A study of complete analytical process including sample handling, separations, the analysis step and the statistical interpretation of data; emphasis placed on separations and statistics.

CHM 5151 Spectrochemical Analysis Methods (3) Fundamentals of optics, spectroscopic instrumentation, spectroscopic techniques for chemical analysis including atomic emission and absorption spectroscopy, molecular absorption and luminescence, infrared and raman spectroscopy.

CHM 5152 Optical Spectroscopy for Chemical Analysis (3) Instrumentation and quantitative measurements are emphasized; topics covered include optical instrumentation, fourier transform techniques, detectors, multi-channel measurements, and atomic, molecular, fluorescence and raman spectroscopy.

CHM 5155 Chemical Separation Methods (3) Modern filtration technology, distillation and extraction instrumentation and methods, and chromatographic instrumentation and methods including gas liquid, thin layer column, high performance liquid chromatography, and mass spectrometry.

CHM 5225 Advanced Organic Chemistry (3) A survey of the major areas of contemporary organic chemistry to include reaction mechanisms, reactive intermediates, molecular rearrangements, conformation analysis, and exercises in the synthesis of complex organic molecules.

CHM 5262 Physical Organic Chemistry (3) An intensive examination of molecular orbital theory and orbital symmetry; thermochemistry and thermochemical kinetics relations, to the study of reaction mechanisms; solvent and substituent effects on rates and equilibria; localized and delocalized bonding.

CHM 5301 Bio-Organic Chemistry (3) An advanced discussion of the use of chemically synthesized molecular models to explain biological/biochemical processes and reactions.

CHM 5380 Topics in Organic Synthesis (3) Discussion and application of modern synthetic methodology relating to natural products and other complex organic molecules, blocking groups and selective functional group interconversions.

CHM 5440 Chemical Kinetics (3) Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms in the gas and liquid phases.

CHM 5460 Chemical and Statistical Thermodynamics (3) The purpose of the course is to extend the student's knowledge of chemical and statistical thermodynamics first introduced in an undergraduate physical chemistry course. The student should obtain a grasp of the underlying dynamical and statistical nature of thermodynamics. The main emphasis will be in equilibrium thermodynamics; but non-equilibrium thermodynamics will also be presented.

CHM 5480 Quantum Chemistry (3) The purpose of the course is to develop in the student an understanding of the fundamentals of quantum mechanics and to use those fundamentals as the basis for understanding the electronic structure of atoms and molecules and, in particular, the bonding structure of molecules. A level of mathematics rigor including the use of differential equations and

vector analysis will be required for dealing with the material.
CHM 5490 Chemical Spectroscopy (3) An introduction to the relationships among quantum mechanical formulations, experimentally determinable quantities obtained via spectroscopic methods and physical parameters related to the structure of molecular systems. The main scope of the course will be devoted to an in-depth development of relations for elementary systems.
CHM 5531 X-Ray Crystallography (3) An introductory treatment of the principles and basic laws of crystallography. These laws and principles will be used to solve molecular structures from x-ray diffraction data.
CHM 5540 Chemical Application of Group Theory (3) A detailed treatment of the principles of group theory and their applications to quantum mechanics and spectra of molecules.
CHM 5620 Inorganic Chemistry Principles (3) Atomic structure, term symbols, modern bonding theories, acid-base chemistry, coordination chemistry, chemical reactions and mechanisms.
CHM 5650 Structural Methods in Inorganic Chemistry (3) A brief introductory treatment of group theory; presentation of modern structural techniques applicable to elucidation of inorganic molecules as revealed through spectroscopic methods.
CHM 5931 Special Topics in Chemistry (2-5) Coverage of selected topics, concepts and theoretical principles at the graduate level of organic chemistry, biochemistry, physical chemistry, analytical chemistry and/or inorganic chemistry. Coverage of subject matter is tailored to the needs and interests of the graduate student.
CHM 5971 Graduate Thesis in Chemistry (Var) Students will conduct individual research investigations in the area of their specific interest under the direction and supervision of a graduate faculty member. Upon completion of the research investigation, each student must submit a thesis in the acceptable format to his or her graduate committee and successfully defend the thesis in an oral presentation.
CHM 6935 Graduate Chemistry Seminar (1) Oral presentations on selected topics in the field of chemistry. Each graduate student is required to present one seminar outside his or her area of specialization according to departmental standards.

Department of Computer and Information Sciences

The Department of Computer and Information Sciences (CIS) offers three Bachelor of Science degrees and three minors in Computer Science, Computer Information Systems, and Information Technology. The bachelor degree programs are project oriented. Students are required to carry out all phases of the software lifecycle, including systems analysis, design and development. Graduates earning the Bachelor of Science degree will be equipped to make immediate contributions as professional programmers and systems analysts or IT specialists. Students are encouraged to participate in internships and cooperative education experiences. Finally, students may select elective courses which, in conjunction with required courses, will prepare them for graduate study in computing related fields. A brief description of each Bachelor of Science degree program follows.

Computer Science: This major is designed for students who plan to apply their computing knowledge in scientific or engineering environments including software engineering. This major is also designed for students who plan to seek advanced degrees in computer science or a related discipline.
Computer Information Systems: This major is designed for students who plan to apply their computing knowledge in business environment as applications programmers and system analysts. This major is also designed for students who plan to seek advanced degrees in business administration, management, or management information systems.

Information Technology: The goal of the undergraduate IT program is to prepare students to use and support the appropriate use of computer technology to meet diverse needs of business, government, education and other organizations. IT graduates will possess the skills and knowledge to assume appropriate entry-level professional positions, and to grow into leadership positions or pursue graduate study.

Computer Science, Computer Information Systems and Information Technology are demanding programs that require academic preparation, personal discipline and academic progression while demonstrating a high level of technical proficiency. All CIS students are subject to a uniform set of academic and proficiency requirements established to ensure that CIS graduates receive a quality education.

Faculty
Professors: Harmon, Marion; Jones, Edward
Associate Professors: Allen, Clement; Chi, Hongmei; Evans, Deidre; Granville, Bobby; Prasad, Bhanu; Riggs, Ken
Instructor: McQueen, Arlisha
Office Manager: Gurley, Myra

Course Prerequisites Policy
It is the student's responsibility to be aware of the prerequisites of a CIS course prior to enrollment in that course. A student may contact his or her advisor or the department chair for additional information concerning course prerequisites and this policy. Failure to fulfill course prerequisites may result in the administrative cancellation of enrollment in the course at any time during the semester with no refund of tuition or fees.

Computer Science Curriculum
Freshman Year

Fall Semester	**Sem. Hrs.**
BSC 1005 Biological Science w/Lab	4
ENC 1101 Freshman Communicative Skills I (or ENC 1121)	3
MAC 2311 Calculus I	4
SPC 2600 Public Speaking	3
General Elective	3
Total	**17**

Freshman Year

Spring Semester	**Sem. Hrs.**
AFA 3104 The Afro-American Experience or AMH 2091	3
ENC 1102 Freshman Communicative Skills II (or ENC 1122)	3
COP 3014C Fundamentals of Programming	4
MAC 2312 Calculus II	4
General Elective	2
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
COP 3330 Intro. to Object-Oriented Programming	3
COT 3100 Discrete Structures I	3
MAC 3313 Calculus III	5
Social Science Elective	3
Total	**14**

Sophomore Year

Spring Semester	**Sem. Hrs.**
COP 3530 Program, File and Data Structures	3
COT 3101 Discrete Structures II	3
General Elective	3
Humanities Elective	3
General Elective	3
Total	**15**

Junior Year

Fall Semester	**Sem. Hrs.**
CDA 3101 Computer Concepts and Organization	3
CIS 4250 Computer Ethics and Professional Responsibility	3
COT 4210 Foundations of Computer Science	3
PHY 2048 General Physics I	4
PHY 2048 General Physics 1 Lab	1
Departmental Approved Math Course	3
Total	**17**

Junior Year

Spring Semester	**Sem. Hrs.**
CDA 4102 Computer Architecture	3
CDA 4504 Data Comm. and Organizational Networks	3
COP 3710 Database Management Systems	3
PHY 2049 General Physics II	4
PHY 2049 General Physics Lab II	1
Humanities Electives	3
Total	**17**

Senior Year

Fall Semester	**Sem. Hrs.**
COP 3060 Concepts in Advanced Application Development	3
CIS 4301 Information Systems Design and Development	3
COP 4020 Programming Languages	3
*Major Elective	3
Total	**12**

Senior Year

Fall Semester	**Sem. Hrs.**
CIS 4910 Information Systems Development Project	3
COP 3610 Operating Systems	3
Departmental Approved Math Course	3
Major Elective	3
	12
TOTAL	**120**

Departmental Approved Math Courses for Computer Science Curriculum

MAD 3401 Numerical Analysis	3
MAS 3105 Linear Algebra	3
STA 2023 Probability and Statistics	3

Computer Information Systems Curriculum

Freshman Year

Fall Semester	**Sem. Hrs.**
General Elective	3
ENC 1101 Freshman Communicative Skills I (or ENC 1121)	3
PSC 1121 Physical Science with Lab	4
MAC 2233 Business Calculus	3
CIS 1920 Professional Development I	2
Total	**15**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communicative Skills II (or ENC 1122)	3
COP 3014C Fundamentals of Programming	4
COP 3828 Web Programming & Design	3
AFA 3104 The African American Experience or AMH 2091	3
General Elective	3
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
ECO 2013 Principles of Economics I	3
COT 2104 Mathematics for Computing	3
SPC 2608 Public Speaking	3
COP 3330 Introduction to Object-Oriented Programming	3
Humanities Elective	3
Total	**15**

Sophomore Year

Spring Semester	**Sem. Hrs.**
BSC 1005 Biological Science with Lab	4
CDA 3101C Computer Concepts and Organization	3
COP 3530 Program, File and Data Structures	3
ECO 2023 Principles of Economics II	3
Humanities Elective	3
Total	**16**

Junior Year

Fall Semester	**Sem. Hrs.**
ACG 2021 Financial Accounting Principles	3
CIS 3040 Information Systems in Organizations	3
ENC 3243 Technical Writing	3
MAN 3025 Principles of Management	3
CIS 4250 Computer Ethics and Professional Responsibility	3
Total	**15**

Junior Year

Spring Semester	**Sem. Hrs.**
ACG 2071 Managerial Accounting Principles	3
COP 3710 Database Management Systems	3
CNT 4504 Data Comm. & Organizational Network	3
MAR 3023 Principles of Marketing	3
General Elective	3
Total	**15**

Junior Year

Summer Term	**Sem. Hrs.**
General Electives (Internship recommended)	4

Senior Year

Fall Semester	**Sem. Hrs.**
CIS 4301 Information Systems Design and Development	3
COP 3060 Concepts in Advanced Application Dev.	3
STA 2023 Intro to Probability and Statistics	3
Major Elective	3
Total	**12**

Senior Year

Spring Semester	**Sem. Hrs.**
CIS 4910 Information Systems Development Project	3
COP 4365 Advanced C# Programming	3
Major Elective	3
General Elective	3
	12
TOTAL	**120**

Information Technology Curriculum

Freshman Year

Fall Semester	**Sem. Hrs.**
SPC 2608 Public Speaking	3
ENC 1101 Freshman Communicative Skills I (or ENC 1121)	3
COP 3828 Web Programming & Design	3
MAC 1147 Pre-Calculus Mathematics	4
CIS 1920 Professional Development I	2
Total	**15**

Freshman Year

Spring Semester	**Sem. Hrs.**
CNT 2000 Computer Systems and Network Fundamentals	3
ENC 1102 Freshman Communicative Skills II (or ENC 1122)	3
COP 3014C Fundamentals of Programming	4
STA 2023 Probability and Statistics I	3
General Elective	2
Total	**15**

Sophomore Year

Fall Semester	**Sem. Hrs.**
Humanities Elective	3
General Elective	3
COP 3710 Database Management System	3
PSC 1121 Physical Science w/Lab	4
COP 3366 Intro. to C# Programming	3
Total	**16**

Sophomore Year

Spring Semester	**Sem. Hrs.**
COT 2104 Mathematics for Computing	3
CIS 4920 Professional Development	3
CIS 4360 Intro. to Computer Security	3
BSC 1005C Biological Science w/Lab	4
Humanities Elective	3
Total	**16**

Sophomore Year

Summer Semester	**Sem. Hrs.**
General Elective (Internship recommended)	2

Junior Year

Fall Semester	**Sem. Hrs.**
AFA 3104 The African-American Experience or AMH 2091	3
ECO 2013 Principles of Economics I	3
ENC 3243 Technical Writing	3
CNT 4504 Data Comm. & Organizational Network	3
Concentration Core A	3
Total	**15**

Junior Year

Spring Semester	**Sem. Hrs.**
PSY 2012 Intro to Psychology	3
CIS 4250 Computer Ethics and Professional Responsibility	3
CNT 4603 Computer & Network System Administration	3
Concentration Core A	3
Concentration Core B	3
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
CIS 4517 Needs Assessment & Technology Transfer	3
CEN 4721 Concepts & Principles of HCI	3
Concentration Core A	3
Concentration Core B	3
General Elective	2
Total	**14**

Senior Year

Fall Semester	**Sem. Hrs.**
CIS 4945 IT Capstone Project	3
Concentration Core B	3
Major Elective	3
General Elective	3
	12
TOTAL	**121**

Information Technology Core Concentrations

Each concentration is composed of three to four courses. IT majors must take two concentrations, at least one of which must be within the CIS Department. These IT courses equip students from all disciplines. Students must select three courses within the same concentration core. The following concentrations are currently recognized:

Information Assurance and Security (IAS):

Students will learn fundamental topics of Information Assurance and Security.

- CIS 4361 Applied Security
- CIS 4385C Digital Forensics
- CNT 4406 Network Security

Data Mining (DM):

Students will learn fundamental concepts and skills of database and data mining.

- CIS 3040 Information Systems in Organizations
- COP 4710 Advanced Database Management Systems
- CAP 3770 Introduction to Data Mining

Mobile Computing (MC):

Students will learn concepts and challenges of mobile computing, handheld, and embedded computing will be introduced.

- COP 4656 Introduction to Mobile Computing

- CEN 4213 Embedded Systems Programming
- CAP 4106 Ubiquitous and Handheld Programming

Web Design (WD):
Students will learn the fundamental topics of designing and implementing web applications on the Internet.

- COP 3060 Concepts in Advanced Application Dev.
- CAP 4064 Network-Based Multimedia
- COP 4814 Web Services

***Health Informatics (HI):**
Allied Health Sciences concentration for IT students.

- HIM 3016 Legal Aspect of Health Information
- HIM 4465 Healthcare Informatics
- HIM 4656 Health Information Systems

*Inter-disciplinary concentration (Additional inter-disciplinary concentrations forthcoming)

Major Electives

A major elective must be an upper division CIS Department course that is not required by the degree program and does not have the CGS prefix. Consult with the CIS academic advisor or department chair for additional information concerning major electives.

Internships and Cooperative Education

Internships and cooperative education assignments provide valuable "real world" work experiences. Professional Development courses (CIS 1920 and CIS 4920) help prepare students for these work experiences. Students gain credit for internships by enrolling in CIS 2942 or CIS 4942 and cooperative education by enrolling in CIS 2949 or CIS 4949.

Work experiences in the field of computing greatly enhance a student's employment prospects. Therefore, the department encourages internships and cooperative education work experiences for its majors. Major corporations, federal agencies, and state agencies actively recruit CIS majors for paid summer internships (8-12 weeks), and for semester-long co-ops. Student work experiences, however, must be planned in advance, recognizing that internships or co-ops that occur during the school year may delay completion of the CIS degree.

Outside Minors and Concentrations

A number of minors are possible and compatible with the CIS majors. In many cases, course work already required for the major can be credited toward such a minor. In addition to the business minor, students in the Information Systems major may minor in Health Information Management. Students in the Computer Science major may minor in Mathematics (See math minor requirements); a minor in Physics is also possible with this major. Students may also minor in Computer Education by taking an additional 21 hours of education courses leading to Florida teacher certification in computer science, grades K-12.

For further information on these or other minors, including specific course requirements, consult the University General Catalog, or contact the chair of the applicable department.

Minor in Computer Science

Pursuit of a minor in Computer Science requires the approval of the CIS Department chair and completion of the following courses with a grade of "C" or better:

Course	Sem. Hrs.
COT 3100 Discrete Structures I	3
COP 3014C Fundamentals of Programming	4
COP3330 Introduction to Object Oriented Programming	3

Choose three courses from the following list:

Course	Sem. Hrs.
CDA 3101C Computer Concepts and Organization	3
CDA 4102 Computer Architecture	3
CNT 4504 Data Communication & Organizational Networks	3
COP 3530 Program, File, and Data Structures	3
COP 3060 Concepts in Advanced Application Development	3
COP 3610 Operating Systems	3
COP 3710 Database Management Systems	3
COP 4720 Advanced Database Management Systems	3
CIS 4301 Information Systems Design and Development	3
COT 3101 Discrete Structures II	3
COT 4210 Foundations of Computer Science	3
CIS 4360 Introduction to Computer Security	3
CIS 4361 Applied Security	3
CNT 4406 Network Security & Cryptography	3

Minor in Computer Information Systems
Pursuit of a minor in Information Systems requires the approval of the CIS Department chair and completion of the following courses with a grade of "C" or better:

Course	Sem. Hrs.
COT 2104 Mathematics for Computing	3
COP 3014C Fundamentals of Programming	4
COP3330 Introduction to Object Oriented Programming	3
CIS 3040 Information Systems in Organizations	3
COP 3710 Database Management Systems	3
CIS 4301 Information Systems Design and Development	3

Minor in Information Technology
Pursuit of a minor in Information Technology requires the approval of the CIS Department chair and completion of the following courses with a grade of "C" or better:

Course	Sem. Hrs.
COP 3828 Web Programming and Design	3
COP 3014C Fundamentals of Programming	4
CNT 2000 Computer Systems and Network Fundamentals	3
CIS 4360 Intro to Computer Security	3
COP 3366 Intro to C# Programming	3
COP 3710 Database Management Systems	3

Course Descriptions

Computer Applications

CAP 3770 Introduction to Data Mining (3) This course covers data mining application, data preparation, data reduction and various data mining techniques such as association, clustering, classification, and anomaly detection. This course will develop an understanding of the fundamental principles of data mining, and then apply these concepts to real data. Students gain a working knowledge of data mining techniques in the real world.
CAP 4064 Network-Based Multimedia (3) Fundamental topics of designing and implementing multimedia on the Internet. Each topic is presented along with the underlying computer technology and hands-on projects incorporating the concepts. Current practice in preparing multimedia for cross-platform delivery to the growing audience of Internet users. Using the capabilities of current web browser client and http server technology, students will implement interactive multimedia for a variety of applications.
CAP 4106 Ubiquitous and Handheld Programming (3) Prereq: COP 4656. Ubiquitous and pervasive computing embody platforms and paradigms for anywhere, anyhow services and information systems. This course touches upon areas such as wireless and sensor networks, mobile computing, and agent technologies. Issues of application architectures, privacy, infrastructure, and human-computer interfaces.
CAP 4620 Artificial Intelligence (3) Prereq: COP 3710. Problem solving and representation, control strategies, searching strategies, predicate calculus and rule-based deductions, knowledge-based systems, and robotics.

Computer Design and Architecture
CDA 3101C Computer Concepts and Organization (3) Prereq: COP 3014C, and either COT 2104 or COT 3100. Fundamental concepts and terminology associated with computer hardware architecture and operating systems. Introduction to assembly language and digital logic design.
CDA 4102 Computer Architecture (3) Prereq: CDA 3101C. Instruction sets, CPU design, arithmetic algorithms, I/O communication techniques, memory hierarchy, memory management, RISC architectures, pipeline and vector processing.

Computer Software Engineering
CEN 4072 Software Testing (3) Prereq: COP 3330 or COP 3366. This course builds the skills necessary to perform software testing at the function, class and application level. Students will be taught concepts of black-box (functional and boundary) and white-box (coverage) testing, and will apply these concepts to small programs, components and applications. Students will also be taught evaluative techniques such as coverage and mutation testing.
CEN 4213 Embedded Systems Programming (3) Prereq: COP 4656. Software issues in the design of embedded systems. Microcontroller architectures and peripherals, embedded operating systems and device drivers, compilers and debuggers, timer and interrupt systems, interfacing of devices, communications and networking. Emphasis on practical application of development platforms.
CEN 4721 Concepts and Principles of Human Computer Interaction (3) Prereq: COP 3014C. A project based course focused on the principles and theories of usable computer interfaces. The course will cover the usability engineering process, including analysis, design, prototyping and testing. Additional topics include: what is usability, heuristic evaluation, usability goal setting, interaction design and styles, assessment methods and international user interfaces. Team projects are required.

Computer General Studies
CGS 2060C Introduction to Microcomputer Applications (3). Survey of the field of computing. Discusses historical development of hardware and software. Experience using selected microcomputer applications.
CGS 3036 Computer Technology and Social Issues (3). This course explores the benefits and pitfalls of social computing, and identifies opportunities to exploit social computing in the workplace. Issues such as privacy, crime, gender inequality, electronic voting and "big brother.

Computer Science and Information Systems
CIS 1920 Professional Development I (2), Prereq: CIS Major. Structured activities and workshops designed to introduce freshman and sophomore CIS majors to computer applications in society at large and in selected corporations and to assist these students in acquiring knowledge, skills, and etiquette required for success as computer information systems professionals.
CIS 2900/4900 Directed Independent Study (1-4) Prereq: To Be Specified. Individualized study and research under faculty supervision. The topic of study or research project must have been decided upon by the student and approved by the instructor prior to registration.
CIS 2942/4942 Information Systems Internship (1-12) Prereq: CIS 1920 or CIS 3920. Structured work assignment for freshman or sophomore (CIS 2942) or junior or senior (CIS 4942) CIS majors in an information systems or systems software development unit of a corporation or governmental agency. Requires seminar participation, reports, and evaluations.
CIS 2949/4949 Cooperative Education Assignment (1-12). Structured work assignment for sophomore (CIS 2949) or junior or senior (CIS 4949) CIS majors in an information systems or systems software development unit of a corporation or governmental agency. The work assignment involves alternating semesters of off-campus work and on-campus study. Requires seminar participation, reports, and evaluations.
CIS 3040 Information Systems in Organizations (3) Prereq: Junior standing and COP 3014C. Basic management and organization theory; general systems approach to solving problems; tools of systems planning, analysis, design, and implementation; fundamentals of computer data processing, database, and communications; management information, decision support, and office automation systems. Utilizes case studies.
CIS 4250 Computer Ethics and Professional Responsibility (3) Prereq: Computer programming course or instructor's consent. This course is dedicated to exploring the social, political, philosophy, constitutional, legal, and economic issues related to computers. In addition to the ethical issues related to computing, those that apply to all aspects of life – honesty, responsibility, fairness are discussed. The special issues that spring from these topics will be explored – "Applied Ethics" and the common codes and professional practices of the CS and IT fields.
CIS 4301 Information Systems Design and Development (3) Prereq: COP 3710. Development life cycle. Management and planning of systems development projects. Emphasis on information requirements analysis, logical specification, logical design, and detailed design. Case studies are utilized. Should be taken in semester just prior to taking CIS 4910.

CIS 4360 Introduction to Computer Security (3): Prereq: COP 3014C or instuctor's consent. Introduction to the various technical and administrative aspects of information security and assurance. This course provides the foundation for understanding the key issues associated with protecting information assets, determining the levels of protection and response to security incidents, and designing a consistent, reasonable information security system, with appropriate intrusion detection and reporting features.

CIS 4361 Applied Security (3) Prereq: CIS 4360. Introduction to issues of information security. We will address the fundamental theories of security policy, security vulnerability and protection. The material will relate to current issues that affect day to day computing.

CIS 4385C Digital Forensics (3) Prereq: CIS 4360. Technical issues in acquiring computer evidence and popular file systems are examined. Reporting issues in the legal system, digital evidence collection and evaluation, and legal issues involved in network forensics.

CIS 4517 Needs Assessment and Technology Transfer (3) Prereq: COP 3710. Complex problems in modern organizations require an information technologist to systematically analyze problem areas to determine the most effective and cost-efficient solutions. This course builds student skills in two different yet interacting areas: needs assessment (requirements analysis) and group problem solving. Students use interviewing and problem-solving techniques to uncover the constraints that surround problem areas. Students learn the questions to ask during needs assessment, and develop the interpersonal skills to conduct these meetings. Emphasis is on the steps in creative problem solving, the basics of meeting planning to maximize group effectiveness and helping a client to focus concerns into a clearly defined problem.

CIS 4910 Information Systems Development Project (3) Prereq: CIS 4301 and COP 3060. Second course in the capstone sequence. A team project requiring development or enhancement of a computer system specified and designed in CIS 4301.

CIS 4920 Professional Development (3) This course is designed to help students develop the career competencies and strategies that will prepare them to enter the job market as entry level IT professionals. Structured activities and workshops designed to prepare juniors and seniors for the professional life during internship or initial career placement.

CIS 4932 Special Topics (3) Prereq: To Be Specified. A course offered on some topic that is of special interest and may be the subject of a future regular course.

CIS 4945 IT Capstone Project (3) Prereq: CIS 4517. Capstone course of the IT program. This course presents students with an ERP system project to put all of their IT skills to the test as students work with "real-world" clients. Experiencing the opportunity to "bridge the gap between theory and practice" is one of our goals. Team projects are requiring development or enhancement of an application.

Computer Networks

CNT 2000 Computer Systems and Network Fundamentals (3) Fundamentals of hardware and software and how they integrate to form essential components of IT systems. This course prepares students for fundamental skills in server, network and hardware installation, troubleshooting and maintenance.

CNT 4406 Network Security and Cryptography (3) Prereq: CIS 4360. Issues of network security from authentication to non-repudiation. Fundamental theories of network security including public and private key cryptographic techniques. Other topics include network defenses such as firewalls and intrusion detection systems, as well as Public Key Infrastructures and other security enabling technologies.

CNT 4504 Data Communications and Organizational Networks (3) Prereq: COT 2104 or COT 3100. Communication systems components, networks, LANs, common carrier services, network architectures, and distributed information systems.

CNT 4603 Computer & Network System Administration (3) Prereq: CNT 2000. Practical grounding in the principles of system administration highlighting why IT departments do the things they do, such as imposing limitations on users. Various major operating system families will be used to demonstrate the universal principles that apply to all platforms. Other issues such as user account management, interoperability, capacity planning, load balancing, security, and disaster preparedness will be discussed. Through hands-on assignments, students deal with challenges designed to help them create, customize, and grow their own IT toolbox.

Computer Programming

COP 2221C C Programming (3) Prereq: MAC 1147 or MAC 2311. An in-depth study of the programming language C. Includes programming instructions, file handling techniques, array processing with selected advanced functions. Requires the design and development of C programs.

COP 3014C Fundamentals of Programming (4) Prereq: MAC 1105. An introduction to computer programming in a high-level programming language. Covers the evolution of hardware and software, problem solving and algorithm development, program data types and structures, program control constructs, and program development methods and style.

COP 3060 Concepts in Advanced Application Development (3) Prereq: COP 3530 or instructor's consent. Explore concepts in developing advanced computer applications. Will use Java programming language to implement advanced application, but will also include topics in HTML and CGI programming.

COP 3330 Object-Oriented Programming (3) Prereq: COP 3014C. Introduction to the object oriented programming (OOP) paradigm using C: classes, objects, inheritance, and polymorphism, templates; introduction to data structures and container classes.

COP 3366 Intro to C# Programming (3) Prereq: COP 3014C. An introduction to programming in the C# programming language using the Microsoft .NET environment. Emphasis will be on creating programs that use a graphic user interface. Hands-on programming projects will be an integral part of the course.

COP 3530 Program, File, and Data Structures (3) Prereq: COP 3330. Advanced programming, file organization and accessing, and data structures with emphasis on software engineering principles related to good program design, documentation, and coding techniques.

COP 3610 Operating Systems (3) Prereq: COP 3530 and CDA 3101C. Operating systems concepts including process management, concurrent processing, resource allocation and deadlock, memory management, job and processor scheduling, secondary storage management, and security.

COP 3710 Database Management Systems (3) Prereq: COP 3014C. Database concepts and environment, database development process, data modeling (entity-relationship, object-oriented,

and relational) and logical database design, and SQL.
COP 3828 Web Programming and Design (3) Introduction to the concepts needed to design professional quality web pages using HTML/XHTML, cascading style sheets, and dynamic HTML using JavaScript and document object model (DOM).
COP 4020 Programming Languages (3) Prereq: COP 3530. Central concepts of programming languages involving programming paradigms, syntax, semantics, pragmatics, and implementation and the application of these concepts to a variety of languages.
COP 4365 Advanced C# Programming (3) Prereq: COP 3366 or COP 3330. This course extends C#/.NET programming to include additional language and IDE features and tools (e.g., debugger) for supporting net architecture; web services and applications; windows applications; mobile applications; and interoperability of .NET applications.
COP 4656 Introduction to Mobile Programming (3) Prereq: COP 3330 or COP 3366 The development of applications for mobile computing devices. Mobile devices range from consumer electronics such as cell phones to off-the-shelf robotics to data acquisition devices. Application topics to be considered will include the application development cycle, mobile devices in a client-server or peer-to-peer relationship, wireless networking, user interfacing, mapping, GPS, and graphics.
COP 4710 Advanced Database Management Systems (3) Prereq: COP 3710. Physical database design, advanced SQL, QBE and graphical interfaces, data base administration (concurrency control, security, recovery), client/server and distributed database, future trends.
COP 4814 Web Services (3) Prereq: COP 3710. Introduction to the concept of web services as a programming model for dynamic application interaction over the web. The class will cover how to program web services using standard JAVA APIs, and how to implement, describe, register, discover, invoke, and deploy web services using web services standards such as SOAP, WSDL, and UDDI.

Computing Theory
COT 2104 Mathematics for Computing (3) Prereq: MAC 1105. This course builds basic mathematical logic skills and foundations of computing. Students will know and understand the basic concepts of mathematics as they apply to computing, and have developed an appreciation of the way that discrete mathematics can assist their own problem solving and implementation of solutions.
COT 3100 Discrete Structures I (3) Prereq: MAC 2311. Purpose is to ensure the necessary logical, mathematical, and analytical skills and basic theoretical foundation for success in subsequent CIS courses. To this end, logic, sets, functions, algorithms, binary arithmetic, recursion, methods of proof, and proofs of program correctness are studied.
COT 3101 Discrete Structures II (3) Prereq: COT 3100. Sequel to COT 3100. Covers counting techniques, relations, graphs, and trees and the application of these topics to computer science.
COT 4210 Foundations of Computer Science (3) Prereq: COT 3101 and COP 3530. Theoretical foundations of computer science including regular expressions; regular, context-free, and context sensitive grammars; finite and pushdown automata; Turing machines; and unsolvability.
COT 4400 Design and Analysis of Algorithms (3) Prereq: COT 3100 and COP 3530. Problem solving strategies, principles of algorithm design, metrics for evaluating designs, space and time complexity, iterative and recursive algorithms, structured and object-oriented paradigms.

Information Systems Management
ISM 4400 Decision Support Systems (3) Prereq: CIS 3040. The design, development, implementation, management, and use of decision support systems including concepts of data management, modeling decision support systems, and decision-making.

Master of Science in Software Engineering

The Florida A&M University Department of Computer and Information Sciences (CIS) offers a Master of Science degree in Software Engineering Science (MSES). This degree is designed to teach principles in engineering, computer science, and information engineering. This degree may be a terminal degree for software engineering professionals or preparation for receipt of a Ph.D. in an advanced computing discipline.

Graduate Faculty

Professors: Harmon, Marion; Jones, Edward
Associate Professors: Allen, Clement; Chi, Hongmei; Evans, Deidre; Granville, Bobby; Prasad, Bhanu; Riggs, Ken

Admission Requirements
A candidate must meet the university-level admission requirements for graduate school and have at least the equivalent of a minor in computer science or a related field.
Degree Requirements
The MSES degree program requirements consist of course work and a master's thesis. Students must:

1. maintain a grade of 3.0 (out of 4.0) in all courses in the curriculum,
2. select an area of research study, thesis advisor, and thesis committee during the second year of study,
3. submit a thesis accepted by the thesis advisor and thesis committee, and
4. complete 33 hours of classroom courses.

A recommended schedule of courses is listed below.

Year One

Fall Semester	**Sem. Hrs.**
CIS5025 Programming Languages	3
CEN5075 Software Systems Engineering	3
COT5310 Theory of Formal Languages and Automata	3

Spring Term

CEN5016 Formal Methods	3
CEN5064 Advanced Systems Design	3
Elective	3

Year Two

Fall Semester	**Sem. Hrs.**
CEN5015 Software Development and Maintenance	3
COP5614 Operating Systems	3
Elective	3
Spring Term	**Sem. Hrs.**

CEN5055 Software Project Management	3
CEN5070 Software Verification and validation	3
CIS5970 Thesis	3

Master of Science in Computer Science

The CIS Department also offers a Master of Science degree in Computer Science (MSCS). This program will provide breadth and rigor in computer science while providing an opportunity for depth in one or more of the diverse research areas of the current departmental faculty. The program provides the flexibility to respond to a range of student and professional needs, and to support emerging areas of computing including computational science, social computing and intelligent computing.

Admission Requirements

A candidate must meet the university-level admission requirements for graduate school and have at least the equivalent of a minor in computer science or a related field.

Degree Requirements

The MSCS degree program requirements consist of course work and a master's thesis. Students must:

1. maintain a grade of 3.0 (out of 4.0) in all courses in the curriculum,
2. select an area of research study, thesis advisor, and thesis committee during the second year of study,
3. submit a thesis accepted by the thesis advisor and thesis committee,
4. complete 27 hours of classroom courses.

A recommended schedule of courses is listed below.

Year One

Fall Semester	**Sem. Hrs.**
CIS5025 Programming Languages	3
CEN5075 Intro. Software Engineering	3
COP5614 Operating Systems	3
Spring Term	
CIS 5935 Introduction to Research	3
COT 5405 Design & Analysis of Algorithms	3
Concentration course	3

Year Two

Fall Semester	**Sem. Hrs.**
Concentration course	3
Concentration course	3
CIS 5970 Thesis	3
Spring Term	
Elective	3
CIS5970 Thesis	6

Course Descriptions

Computer Applications

CAP 5107 Pervasive Computing (3): Pervasive computing creates a ubiquitous environment that combines processors and sensors with network technologies (wireless and otherwise) and intelligent software to create an immersive environment to improve life. Pervasive computing is in a unique position to facilitate human-computer interaction, to integrate software with hardware, and to spin off new human-centric applications.

CAP 5510 Computational Medical Informatics (3): Covers problems, methods and directions in health information management; Provides a background in health informatics concerns, standards and processes; key computational techniques in these are studied in depth.

CAP 5626 Artificial Intelligence (3): Theory and practice of artificial intelligence and knowledge-based expert systems. Topics include knowledge representation and inference, heuristic and genetic algorithms, machine learning and neural/fuzzy computing. Implementation of algorithms applied to robotics, machine vision, intelligent agents, and natural language processing.

CAP 5661 Introduction to Robotics (3): Models and methods for the design and development of robotic applications to accomplish prescribed tasks with minimal human intervention; Projects include implementing a robot application.

CAP 5765 Data Mining (3): This course is an overview of technologies for intelligent information analysis for diverse application areas. The course gives a broad overview of online analytical processing, data warehousing, data mining, information filtering and recommender systems, and information retrieval.

CAP 5766 Knowledge Management and Data Engineering (3): Advanced topics in database and knowledge-based systems: data mining and warehousing; declarative and visual query languages, multimedia tool; unstructured data sources; client-server and heterogeneous systems.

CAP 5837 Computer Simulation and Modeling (3): This course covers discrete event system modeling and simulation. It includes basic systems modeling concepts and techniques of modeling real world event through probability and logic.

Computer Software Engineering

CEN 5015 Software Development and Maintenance (3): Prereq: CEN 5075. Covers design, implementation, and maintenance (changing) of software. Various methods and languages are used in these activities.

CEN 5016 Formal Methods of Software Engineering (3): Exposes students to the use of specifications that have well defined semantics. Covers classes of specification models, including algebraic, state machines and model-theoretic approaches. Reviews verification methods such as weakest pre-condition and functional correctness.

CEN 5055 Software Project Management (3): Teaches process considerations in software engineering. Provides advanced material in software project planning, monitoring and controlling mechanisms, and leadership and team building.

CEN 5064 Advanced Systems Design Principles (3): Prereq: CEN 5075. Provides a course of theoretical principles of software design and teaches advanced concepts, models and algorithms valuable to systems designers. Topics are comparison of design methods and techniques and the principles of network communications database, security, real-time and graphical design issues.

CEN 5070 Software Verification and Validation (3): Prereq: CEN 5075. Covers theory and practice of insuring high quality software products. Topics include evaluation of software for efficiency, performance, reliability, and correctness. Specific skills

of program proving, code inspection, unit level testing, and system level analysis are included.

CEN 5075 Software Systems Engineering (3): Prereq: Exposes students to development of software systems at a high level. Introduces systems aspect of development and related trade-offs. Exposes students to requirements analysis and techniques to develop a system from requirements.

CEN 5082 Introduction to High Performance Computing (3): This course covers fundamental principles and applications of high performance computing and parallel programming using OPENMP, MPI, Globus Toolkit, web services, and other tools.

CEN 5086 Cloud and Internet Programming (3): This course presents approaches to building large enterprise systems to be deployed on the World Wide Web and Cloud. Examples include, but are not limited to: classical multi-tiered, client-server, service-oriented, grid computing, cloud computing, software as a service, smart clients, and web services. A comprehensive software development project is used to apply covered concepts.

CEN 5215 Embedded Systems Programming (3): Programming of embedded computer systems—computing devices that are parts of a larger installation, from watches and cell phones, to embedded medical devices, cars and space vehicles. Software design principles, specific implementation constructs, and operating system kernels will be taught, supported by software development tools.

Computer Science and Information Systems

CIS 5370 Computer Security (3): Covers threats and attacks (such as computer viruses and Trojan horses), access control, entity authentication, covert channels, inference and database security, secure operating systems, network security, legal and ethics aspects, administering security, physical security, and TEMPEST.

CIS 5371 Cryptography (3): Various cryptographic tools like symmetric and public-key encryption schemes, signature schemes, message authentications schemes, identification protocols and others. Algorithms such as DES, RSA, El Gamal and the Digital Signature Standard are covered.

CIS 5396 Cyber-Security Forensics (3): Provides a foundation in forensic evidence collection from electronic devices and the implications of security to users and forensic examiners. Applicable laws; disk and file recovery; bit-stream images; volatile and persistent data; cryptography; privacy and anonymity; tools for collecting evidence and reporting results.

CIS 5930 Special Topics in Software Engineering (3) (Elective): Introduces students to current topics in software engineering. Topics are announced as the course is taught.

CIS 5935 Introduction to Research (3): Introduces students to research principles such as literary searches, library usage and basic research techniques.

CIS 5970 Thesis (variable): Thesis preparation, presentation and defense.

Computer Networks

CNT 5412 Network Security, Active and Passive Defenses (3): Aspects such as network security services and mechanisms, use of cryptography for implementing network security, and security functionality such as authentication, data integrity, confidentiality and availability.

CNT 5415 Applied Computer and Network Security (3): Current and emerging threats to the security of computer systems and networks including viruses, worms, and network intrusion; and with techniques for the prevention, detection, and recovery from such attacks, such as firewalls, intrusion detection systems, secure coding practices and others. Attack and defense mechanisms are studied in a systematic way to develop students' practical and analytical skills to identify and correct or mitigate threats to computer systems and networks.

CNT 5517 Mobile Computing (3): Emerging topics of wireless and mobile computing and networking including mobile computing models, mobile-IP, adhoc networks, Bluetooth, mobile database access and mobile transactions in context of m-commerce.

Computer Programming

COP 5025 Programming Languages (3): Provides a course in language theory, grammars, syntax, and semantics. Scanners, symbol tables and the pragmatics of implementation used to develop software.

COP 5614 Operating Systems (3): Provides a study of computer operating systems which are the primary resource managers of computer hardwired. The main features provided by these operating systems, such as process management, storage management, processor management, and auxiliary storage management, are studied in detail. Related topics of networking and security are introduced. Case studies of comparison of representative commercial operating systems are included. Laboratory use of the computer is an integral part of this course.

COP 5725 Principles of Database Management Systems (3): Databases and their operations with formal details; Database architectures, data structures and access methods; hierarchical, network, relational, and object-oriented models.

Computing Theory

COT 5310 Theory of Programming Languages and Automata (3): Gives a formal background in computing theory and programming languages including the basis of machines and programming. Logical network and switching theory sequential theory and automata, and Turing machines and computability. Foundations of automata, formal languages of recursion theory.

COT 5405 Design and Analysis of Algorithms (3): Classification of algorithms, e.g., recursive, divide and conquer, greedy, etc. Data structures and algorithm design and performance. Time and space complexity analysis.

Department of Mathematics

Degree Program – The Department of Mathematics offers a Bachelor of Science degree in Mathematics. Students completing the program will be prepared for employment in the government sector, private industry, or graduate studies in mathematics. Students interested in employment immediately upon graduation should select the Mathematical Sciences major. This option gives the student the opportunity to apply various mathematical principles to specific areas such as economics, the sciences, finance, accounting, etc. emphasizing a student's interest. The Bachelor of Science in Mathematics gives the students a solid mathematical foundation and prepares them for graduate study in mathematics or applied mathematics. The Actuarial Science major is specifically for those students interested in a career as an actuary. Completion of this option will provide the student with the information needed to pass the first two exams needed for an actuary career. A grade of "C" or better is required in each course in mathematics taken for credit

for a major or a minor in mathematics.

Requirements for a Minor in Mathematics – A minor in mathematics is offered to the student who satisfactorily completes MAP 2302 Differential Equations, MAS 3105 Linear Algebra, MAA 4211 Advanced Calculus 1 and (9) nine hours in mathematics at the 3000 level or above. Courses to be counted toward a minor must be approved by the Chairperson of the Department of Mathematics.

Faculty
Professors: Jones, Andrew
Associate Professors: Blayneh, Kbenesh; Guerrieri, Bruno; Gunaratne, Ajith; Issos, James; Ngnepieba, Pierre; Stephens, Desmond; Stephens, Sonya; Williams, Henry; Williams, Roselyn
Assistant Professors: Brodhead, Katie; Osborne, Daniel
Instructors: Andrews, Richard; Simmons, Elise
Office Manager: Jones, Bessie

Bachelor of Science Degree in Mathematics
Major in Pure Mathematics

Freshman Year

Fall Semester	**Sem. Hrs.**
MAC 2311 Calculus I	4
ENC 1101 Freshman Communication Skills I	3
AMH 2091 African American History	3
Humanities Elective	3
Social Sciences Elective	3
Total	**16**

Freshman Year

Spring Semester	**Sem. Hrs.**
MAC 2312 Calculus II	4
ENC 1102 Freshman Communication Skills II	3
COP 2221 C Programming	3
SPC 2600 Public Speaking	3
Humanities Elective	3
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
MAC 2313 Calculus III	5
STA 3034 Mathematical Statistics	3
MAS 3105 Linear Algebra	3
Approved Science Sequence*	4
Total	**15**

Sophomore Year

Spring Semester	**Sem. Hrs.**
MHF 4202 Foundations of Mathematics	3
MAP 2302 Differential Equations	3
Elective	3
Approved Science Sequence*	4
Total	**13**

Junior Year

Fall Semester	**Sem. Hrs.**
MAD 3401 Numerical Analysis	3
Electives	12
Total	**15**

Junior Year

Spring Semester	**Sem. Hrs.**
MAA 4301 Abstract Algebra I	3
MAA 4402 Complex Variables	3
MTG 4302 Topology	3
Electives	6
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
MAA 4211 Advanced Calculus I	3
MAT 4937 Senior Seminar	3
Traditional Mathematics Elective**	3
Electives	6
Total	**15**

Senior Year

Spring Semester	**Sem. Hrs.**
MAA 4212 Advanced Calculus II	3
Traditional Mathematics Elective**	3
Electives	9
Total	**15**

* Students must complete a one-year sequence of General Physics (PHY 2048/L, PHY 2049/L), General Chemistry (CHM 1045/L, CHM 1046/L), or General Biology (BSC 1010/L, BSC 1011/L).
** Traditional electives: MAP 4103 Mathematical Modeling, MTG 4212 Modern Pure Geometry, MAS 4203 Number Theory, MAD 4203 Combinatorial Analysis.

Bachelor of Science Degree in Mathematics
Major in Mathematical Sciences

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
AMH 2091 African American History	3
MAC 2311 Calculus I	4
Humanities Elective	3
Social Science Elective	3
Total	**16**

Freshman Year

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
COP 2221 Programming	3
MAC 2312 Calculus II	4
SPC 2600 Public Speaking	3
Humanities Elective	3
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
MAC 2313 Calculus III	5
STA 3034 Mathematical Statistics	3
MAS 3105 Linear Algebra	3
Approved Science Sequence *	4

Total	**15**

Sophomore Year

Spring Semester	**Sem. Hrs.**
MHF 4202 Foundations of Mathematics	3
MAP 2302 Differential Equations	3
Elective	3
Approved Science Sequence *	4
Total	**13**

Junior Year

Fall Semester	**Sem. Hrs.**
MAD 3401 Numerical Analysis	3
Elective	12
Total	**15**

Junior Year

Spring Semester	**Sem. Hrs.**
MAA 4301 Abstract Algebra I	3
MAA 4402 Complex Variables	3
Electives	9
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
MAA 4211 Advanced Calculus I	3
Electives	12
Total	**15**

Senior Year

Spring Semester	**Sem. Hrs.**
MAT 4937 Senior Seminar	3
Mathematical Science Elective**	3
Electives	9
Total	**15**

* Students must complete a one-year sequence of General Physics (PHY 2048/L, PHY 2049/L), General Chemistry (CHM 1045/L, CHM 1046/L), or General Biology (BSC 1010/L, BSC 1011/L).
** Mathematical Sciences electives: MAP 4103 Mathematical Modeling, MAA 4212 Advanced Calculus II.

Bachelor of Science Degree in Mathematics
Major in Actuarial Science

Freshman Year

Fall Semester	**Sem. Hrs.**
MAC 2311 Calculus I	4
ENC 1101 Freshman Communications Skills I	3
BSC 1010, 1010L, General Biology I and Lab	4
AMH 2091 African American History	3
Total	**14**

Freshman Year

Spring Semester	**Sem. Hrs.**
MAC 2312 Calculus II	4
ENC 1102 Freshman Communication Skills II	3
BSC 1011, 1011L, General Biology II and Lab	4
MAN 2812 Intro to Business Systems	3
STA 2023 Probability and Statistics	3
Total	**17**

Sophomore Year

Fall Semester	**Sem. Hrs.**
MAC 2313 Calculus III	5
GEB 1091/ECO 3921 Professional Development I	2
STA 3034 Mathematical Statistics	3
MAT 4906 Pro Seminar	3
Humanities Elective	3
Total	**16**

Sophomore Year

Spring Semester	**Sem. Hrs.**
MAS 3105 Linear Algebra	3
COT 3100 Discrete Mathematics	3
Electives	9
Total	**15**

Junior Year

Fall Semester *(Student prepared for Exam P/1)*	**Sem. Hrs.**
SPC 2600 Public Speaking	3
ECO 2013 Principles of Economics I	3
ACG 2021 Financial Accounting	3
MAP 2302 Differential Equations	3
Approved Actuarial Electives	3
Total	**15**

Junior Year

Spring Semester *(Student prepared for Exam FM)*	**Sem. Hrs.**
ECO 2023 Principles of Economics II	3
ACG 2301 Managerial Accounting	3
FIN 3403 Corporate Finance	3
COP 2221 Programming in C Language	3
Approved Actuarial Elective	3
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
MAA 4211 Advanced Calculus I	3
MAN 3025 Principles of Management	3
MAD 3401 Numerical Analysis	3
Approved Actuarial Sciences Elective	3
Elective	3
Total	**15**

Senior Year

Spring Semester	**Sem. Hrs.**
MAR 3023 Principles of Marketing	3
MAP 4103 Mathematical Modeling	3
Approved Actuarial Sciences Electives	7
Total	**13**

Course Descriptions

MAA 4211 Advanced Calculus I (3) Prereq: MAC 2313. Major topics: real number system, functions, sequences, limits and continuity, fundamental theorems and bounded sequences, Cauchy criterion, point sets, open, closed, compact and connected sets, derivatives, Rolle's Theorem, law of mean, L'Hôpital's rule and

intermediate forms.

MAA 4212 Advanced Calculus II (3) Prereq: MAA 4211. Major topics: Riemann integral, fundamental theorem of integral calculus, infinite series, power series, uniform convergence, functions of several variables, partial differentiation, multiple integrals, improper integrals, Fourier series and orthogonal functions.

MAA 4402 Complex Variables (3) Prereq: MAC 2313. Complex numbers; functions; continuity; derivatives; elementary functions; line and contour integrals; Cauchy formula; representation by power series and classification of singularities.

MAC 1105 College Algebra (3) Major topics: functions and functional notation, domains and ranges of functions, graphs of functions and relations, operations on functions, inverse functions, linear, quadratic and rational functions, absolute value and radical functions, algebraic techniques, linear and quadratic equations, functions, and inequalities, complex numbers, logarithms and exponential properties, systems of equations and inequalities, combinations and Binomial Theorem.

MAC 1114 Trigonometric Functions (3) Prereq: MAC 1105. Major topics: trigonometric functions, properties, graphs, inverse trigonometric functions, properties, graphs, trigonometric identities, conditional trigonometric equations, solutions to triangles, vector algebra, parametric equations, polar coordinates.

MAC 1147 Pre-Calculus Mathematics (4) Prereq: Trigonometry (high-school) and MAC 1105. Major topics: polynomial, rational, and other algebraic functions, their properties and graphs, polynomial and rational inequalities, exponential and morganatic functions, ntheir properties and graphs, conic sections, binomial Theorem. Trigonometric functions, their properties and graphs, inverse trigonometric functions, their properties and graphs, trigonometric identities, conditional trigonometric equations, solutions of triangles, vector algebra, parametric equations, polar coordinates, and applications.

MAC 2233 Business Calculus (3) Prereq: MAC 1105. Major topics: limits, continuity, differential techniques of logarithmic and exponential functions, application of derivatives, curve sketching; integration and applications.

MAC 2311 Calculus with Analytic Geometry I (4) Prereq: MAC 1147 or the combination of MAC 1114 and MAC 1105. Major topics: limits; continuity; differentiation techniques; introduction to integration; curve sketching; areas between curves; theory augmented by applications from a variety of disciplines.

MAC 2312 Calculus with Analytic Geometry II (4) Prereq: MAC 2311. Major topics: techniques of integration, integral approximations including Simpson's Rule; application of the integral to volumes, moments, centroids, etc., conic sections; parametric equations and polar coordinates; infinite series.

MAC 2313 Calculus with Analytic Geometry III (5) Prereq: MAC 2312. Major topics: solid analytic geometry, vectors in 3-space, partial derivatives and applications, multiple integrals, line and surface integrals, topics from plane solid analytic geometry, directional derivatives and curvature, differential calculus of functions of several variables.

MAD 2120 Finite Mathematics (3) Major topics: matrix operations; systems of linear equations and inequalities; linear programming and the simplex method; symbolic logic; probability theory; counting techniques; elementary graph theory; descriptive statistics.

MAD 3401 Numerical Analysis (3) Prereq: MAC 2313. Programming skills required. Major topics: solutions to scalar nonlinear and finite difference equations; numerical differentiation and integration; numerical solution of initial values problems for ordinary differential equations; error and convergence; general interpolation problems; interpolation and quadrature; numerical solutions of algebraic and transcendental equations.

MAD 4203 Combinatorial Analysis (3) Prereq: MAC 2313. Major topics: permutations and combinations, binomial coefficients, inclusion-exclusion, linear recurrence relations, generating functions, block designs, difference sets, existence and non-existence theorems, systems of distinct representatives, introduction to graphs.

MAP 2302 Differential Equations (3) Prereq: MAC 2313. Major topics: methods of solutions of ordinary differential equations, linear equations and systems of linear equations, separation of variables, integrating factors, linear differential equations, undetermined coefficients, variation of parameters, series solutions, Laplace transforms, successive approximation and applications, boundary value problems.

MAP 3130 Difference Operators (3) Prereq: MAC 1105 and MAD 2120. Major topics: difference operators, introduction to difference equations, linear difference equations with constant coefficients, examples from social sciences, Z – transforms, Cobweb cycles, generating functions, matrix methods.

MAP 3341 Partial Differential Equations (3) Prereq: MAP 2302 Major topics: solution of first-order partial differential equations, classification of linear second-order partial differential equations, separation of variables, initial value and initial boundary value problems.

MAP 4103 Mathematical Modeling (3) Prereq: MAP 2302. Major topics: mathematical models of problems in the social, life, physical, and/or management sciences, methods of solution including Laplace transforms, Fourier Series, calculus of variations, and other techniques for solving differential equations.

MAS 3105 Linear Algebra (3) Prereq: MAC 2312. Major topics: investigation of systems of linear equations, matrices, vector spaces, linear transformations, determinants, eigenvalues, inner product spaces.

MAS 4301 Abstract Algebra I (3) Prereq: MAS 3105. Major topics: groups, subgroups, homomorphism theorems, rings, integral domains and quotient fields, quotient groups, polynomial rings, ideals, quotient rings, subrings, extension fields and finite fields.

MAS 4203 Introduction to Number Theory (3) Prereq: MAC 2313. Major topics: mathematical induction; linear Diophantine equations and congruence; Chinese Remainder theorem; theorems of Euler, Fermat, and Wilson; divisibility and divisibility tests; greatest common divisor; division and Euclidean algorithms; primes number; theoretic functions.

MAT 4906 Directed Individualized Study (1-6) Prereq: Consent of Mathematics Chairperson. Independent study or research under supervision of faculty member in various topics.

MGF 1106 Liberal Arts Math I (3) Major topics: systematic counting, probability, statistics, history of mathematics, sets, geometry and logic.

MGF 1107 Liberal Arts Mathematics II (3) Major topics: financial mathematics, linear and exponential growth, numbers and number systems, history of mathematics, elementary number theory, voting techniques, graph theory.

MHF 4202 Foundations of Mathematics (3) Prereq: MAC 2313. Major topics: sets, operations on sets, set algebra, Venn diagrams, truth tables, tautologies, applications to mathematical arguments,

general techniques of mathematical induction.
MTG 2206 College Geometry (3) Prereq: MAC 1105. Major topics: emphasizes Euclidean geometry and its relationship to logic, trigonometry, and coordinate geometry, the problems proofs, constructions, and graphs involve line segments, angles, triangles and polygons, parallel and perpendicular lines, slope of lines, circles, and similarity, presented in terms of right triangle relationships, logic is the basis for deductive reasoning in proofs of theorems, lines and other geometric figures are graphed in the rectangular coordinate system.
MTG 4212 Modern Pure Geometry (3) Prereq: MAC 2313. Major topics: fundamental concepts of Euclidean Geometry treated in specialization of projective geometry. Postulate of projectivity, Quadrangles, Theorems of Desargues, Pappus and Pascal. Harmonic sets, postulates of separation, matrices, cross ratio, affine and homothetic transformations, Non-Euclidean geometry (Geometry of Bolyai-Lobachevsky).
MTG 4302 Elementary Topology (3) Prereq: MAC 2313. Major topics: topological spaces and properties, compactness, metric spaces and continuous functions; general topological spaces, the topological spaces and topological properties. Hausdorff spaces; connectedness.
STA 2023 Probability and Statistics (3) Prereq: MAC 1105. Major topics: probability theory; random variables; hypothesis testing; confidence intervals; small sample methods; correlation; simple linear regression, nonparametric statistics.
STA 3034 Mathematical Statistics (3) Prereq: MAC 2311. Major topics: probability, random variables, hypothesis testing, estimation.
STA 4202 Design and Analysis of Experiments I (3) Prereq: STA 2023. MAS 3105 preferred. Major topics: analysis of variance, blocking, factorial experiment, incomplete blocks, multiple comparisons, confounding, variance components.
STA 4603 Mathematical Techniques of Operations Research (3) Prereq: MAC 2313 or MAS 3105. Major topics: inventory theory, dynamic programming, queuing theory, network analysis, Markov chains, computer simulation.

Graduate Courses

MAP 5345 Partial Differential Equations (3) Prereq: MAC 2313. Major topics: solutions of first-order, quasi-linear partial differential equations, classification and reduction of normal form of linear second-order equations, separation of variables, Sturm-Louisville problems, Fourier series, Fourier integral, Fourier transforms, applications to initial value and initial boundary value problems.
MAS 5145 Linear Algebra (3) Prereq: MAS 3105. Major topics: review of linear algebra, applications of matrices, practical methods of matrix computation, computations using Guassian elimination, Fredholm alternative, choice of pivots, modified systems, unitary transformations and applications, eigenspaces, Schur, QR, and singular value decomposition, similarity transformations, defective matrices, Jordan form, iterative solutions, norms of matrices, quadratic forms and variational principles.
MAS 5204 Number Theory (3) Prereq: MAC 2313. Major topics: mathematical induction, linear Diophantine equations and congruences, Chinese remainder theorem, Euler-Fermat theorems, quadratic reciprocity law.
MAS 5311 Algebraic Structures (3) Prereq: MAS 4301. Major topics: groups, direct products, linear algebras, rings, fields extensions of rings and fields, Galois theory.
MAS 5317 Structures of the Real Number System (3) Prereq: MAC 2313. Major topics: concepts in set theory, relations and their properties, evaluation of numeration systems, integers, rational and irrational numbers, the field of real numbers, introduction to the theory of matrices.
MAT 5907 Directed Individual Study (1-6) Prereq: Consent of Mathematics Chairperson. Independent study or research under supervision of faculty member in various topics.
MAT 5932 Topics in Mathematics (3) Course centers around current interest or of special interest to students or instructors. Topics or focus vary.
MAT 5939 Seminar in Mathematics (3) Course centers around current interest or of special interest to students or instructors. Topics or foci vary.
MHF 5206 Structures and Concepts of Arithmetic (3) Prereq: MAC 2313. Major topics: Zermelo-Frankel axioms for set theory, finite and infinite sets, ordinal numbers, cardinal numbers, the Axiom of Choice and some of its equivalents.
MTG 5220 Logic and Geometry (3) Prereq: MAC 2313. Major topics: foundations of mathematical logic and geometry, sentential logic, survey of fundamental concepts of non-metric geometry, metric geometry in development of geometry as a mathematical system.
STA 5155 Statistical Inference (3) Prereq: STA 3034. Major topics: nature and importance of statistics, descriptive statistics, probability theory and sampling distribution, experimental designs and data analysis, introduction to matrix algebra, regression analysis, introduction to times series analysis.

Department of Physics

The Physics Department offers two baccalaureate degree programs: The (1) Bachelor of Science in Physics and (2) Bachelor of Science in Applied Physics. The Bachelor of Science in Physics degree prepares students to pursue advanced degrees in physics and engineering or to immediately work in technology related fields. The Bachelor of Science in Applied Physics degree prepares students to pursue careers in areas such as computer science, environmental science and applied research fields.

The Minor in Physics - Students wishing to minor in physics must complete a minimum of twenty-two (22) hours of physics at the course level of 2000 or above. (Note: The minimum 22 semester hours of physics courses for the minor excludes PHY 2048 and PHY 2049 General Physics I and II).

Faculty
Emeritus Professors: Greenfield, Mark B., Johnson III, J.
Professors: Belay, Kalayu; Johnson, Lewis E.; Kennedy, Robin J.; Mochena, Mogus; Saha, Bidhan C.; Treadwell, Elliott A.; Weatherford, Charles A.; Williams, Ronald L.
Associate Professors: Appartaim, Richard; Encinosa, Mario R.; Jack, Mark A. ; Mezonlin, Ephrem; O'Neal, Ray H.; Scarlett, Carol; Stampe, Patricia A.
Assistant Professors: Strohaber, James
Office Manager: Richardson, Sonja

Physics Curriculum Guide

Bachelor of Science in Physics Degree

The Bachelor of Science in Physics program prepares students for pursuing graduate degrees in physics, as well as for careers in the private technology sector. A suggested curriculum, with pacing is:

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Freshman Communication Skills	6
MAC 2311, 2312 Calculus I, II	8
PHY 2048, 2049 General Physics I, II	10
PHI 1100 Critical Inquiry	3
AMH 2010 U.S. History or AMH 2020 U.S. History	3
Total	**30**

Sophomore Year	**Sem. Hrs.**
PHZ 3113, PHZ 3114, Mathematical Methods of Physics I,II	6
MAP 2302 Differential Equations	3
CHM 1045, 1046 General Chemistry I, II	8
Elective: Humanities	6
BSC 1005 Biological Science w/Lab	4
AMH 2091 African American History	3
or AFA 3104 African American Experience	
Total	**30**

Junior Year	**Sem.Hrs.**
PHY 3101 Modern Physics	3
PHY 3101L Modern Physics Lab	1
COP 2221 Programming in "C" Language	3
PHY 4221, PHY 4222 Mechanics I, II	6
PHY 4703 Physical Electronics	4
or PHZ 3302 Radiation Physics	
MAS 3105 Linear Algebra	3
PHY 3424C Modern Optics	4
PHY 4931, 4932 Physics Seminar I, II	2
Electives: Social Science or Mathematics	6
Total	**32**

Senior Year	**Sem.Hrs.**
PHY 4323, 4324 Electromagnetism I, II	6
PHY 4604, 4605 Quantum Mechanics I, II	6
PHY 3503 Heat and Thermodynamics	3
PHY 4802L Advanced Lab	2
PHZ 4404 Condensed Matter Physics*	3
or PHZ 4303 Nuclear Physics*	
PHY 4936 Special Problems	3
Electives: Natural Sciences, Mathematics	5
or Computer Science	
	28
Total	**120**

*Highly recommended physics electives.

Bachelor of Science In Applied Physics Degree

The applied physics track prepares students for careers in the applied science areas. A suggested curriculum, with pacing is:

Freshman Year	**Sem. Hrs.**
PHY 2048, 2049 General Physics I, II	10
ENC1101, 1102 Freshman Communicative Skills I,II	6
MAC 3311, 3312 Calculus I, II	8
AMH 2091 African American History	3
or AFA 3104 African American Experience	
Elective: Social Science, Mathematics, Computer Science	4
Total	**31**

Sophomore Year	**Sem. Hrs.**
Elective: Social Science, Mathematics, Computer Science	4
PHZ 3113, PHZ 3114, Mathematical Methods of Physics I, II	6
MAP 3302 Differential Equations	3
CHM 1045, 1046 General Chemistry I, II	8
BSC 1005 Biological Science w/Lab	4
Humanities Electives	6
Total	**31**

Junior Year	**Sem.Hrs.**
PHY 3101 Modern Physics	3
PHY 3101L Modern Physics Lab	1
PHY 4703 Physical Electronics	4
COP 2221 Programming in "C" Language	3
ECO 2013 Principles of Economics I	3
MAS 3105 Linear Algebra*	3
MAN 3010 Principles of Management	3
PHY 4221 Mechanics I	3
PHY 4802L Advanced Lab	2
PHY 4931, 4932 Physics Seminar I, II	2
Electives: Natural Sciences, Management, and Engineering	6
Total	**33**

Senior Year	**Sem.Hrs.**
PHY 4323, 4324 Electromagnetism I, II	6
PHY 3503 Heat and Thermodynamics	3
PHY 4604 Quantum Mechanics I	3
PHY 4936 Special Problems (Variable 1-4)	3
PHY 3424C Modern Optics	4
Electives: Management Sciences,	6
Engineering, and Technology	
	25
Total	**120**

*Highly recommended physics electives.

Course Descriptions

All prerequisite classes must be passed with a grade of C or better.

AST 1002 Astronomy (4): Physical science course designed to acquaint non-science majors with the fundamental laws of nature through the study of the motion, characteristics and properties of celestial objects. Extensive use of the university observatory and related equipment will be made.

PHY 2048 General Physics I (4) Coreq: MAC 2311. The first of a two-semester sequence of introductory physics with calculus for chemistry, engineering, mathematics, physics, and biology majors. A laboratory and recitation are required.

PHY 2048L General Physics I Laboratory (1) Coreq: PHY 2048. Practical and up-to-date hands-on experiments in physics for students in PHY 2048 lecture.

PHY 2049 General Physics II (4) Prereq: PHY 2048. The second of a two-semester sequence of introductory physics with calculus for chemistry, engineering, mathematics, physics, and biology majors. A laboratory and recitation are required.

PHY 2049L General Physics II Laboratory (1) Coreq: PHY 2049. Practical and up-to-date hands-on experiments in physics for students in PHY 2049 lecture.

PHY 2053 College Physics I (3) Prereq: MAC 1105. The first of a two-semester sequence of introductory physics without calculus for allied health, pharmacy, and architecture majors. Also meets general physics requirements for other majors not directed to take PHY 2048, 2049 General Physics I, II. A laboratory is required.

PHY 2053L College Physics-I Laboratory (1) Coreq: PHY 2053. Practical and up-to date hands-on experiments using modern day equipment for students in PHY 2053 lecture.

PHY 2054 College Physics II (3) Prereq: PHY 2053. The second of a two-semester sequence of introductory physics without calculus for allied health, pharmacy, and architecture majors. Also meets general physics requirements for other majors not directed to take PHY 2048, 2049 General Physics I, II. A laboratory is required.

PHY 2054L College Physics-II Laboratory (1) Coreq: PHY 2054. Practical and up-to date hands-on experiments using modern day equipment for students in PHY 2054 lecture.

PHY 3101 Modern Physics (3) Prereq: PHY 2049 or PHY 2054. Special theory of relativity, particle aspects of electromagnetic radiation, physical optics, application of old quantum theory, Schroedinger's equation, the hydrogen atom, condensed matter, basics of nuclear and particle physics.

PHY 3101L Modern Physics Laboratory (1) Coreq: PHY 3101. Practical and up-to-date hands-on experiments using modern day equipment for students enrolled in PHY 3101 lecture.

PHY 3424C Modern Optics (4) Prereq: PHY 2049. Geometric optics, interference, diffraction, polarization, and laser action.

PHY 3503 Heat and Thermodynamics (3) Prereq: PHY 2049. Thermal properties of matter, ideal gases, kinetic theory of gases, laws of thermodynamic systems.

PHY 4221 Mechanics I (3) Prereq: PHY 2048-49. Static equilibrium, motion of a particle under central forces and motions of systems of particles.

PHY 4222 Mechanics II (3) Prereq: PHY 4221. Motion of a rigid body in a plane and in three dimensions, Hamiltonian and Lagrangian formulations of mechanics, and oscillations.

PHY 4323 Electromagnetism-I (3) Prereq: PHY 2048-49. Electrostatics, electrostatic fields in matter, special techniques for calculating potentials, magnetostatics and magnetismin matter.

PHY 4324 Electromagnetism II (3) Prereq: PHY 4323. Electrodynamics (Maxwell's equations, potential formulation, energy and momentum), propagation of electromagnetic waves through conducting and nonconducting media, radiation and special relativity.

PHY 4523 Statistical Physics (3) Prereq: PHY 3503. Classical statistical mechanics, quantum statistics, and applications to gases and solids.

PHY 4604 Quantum Mechanics I (3) Prereq: PHY 4323. Motivation (black body radiation, photoelectric effect, Compton Scattering, and line spectra, etc.), Postulates, Analysis of One-dimensional Systems: Simple Harmonic Oscillators, Potential Barriers and Wells, Quantum Mechanical Measurement, and Numerical Solution Methods for Schrodinger Equation.

PHY 4605 Quantum Mechanics II (3) Prereq: PHY 4604. Second Quantization, Angular Momentum (Orbital, Spin, and Total) for One Particle, Three Dimensional Harmonic Oscillator, Hydrogen Atom; Perturbation Theory, EPR Experiments, Spin-Orbit Effects, Helium Atom, Relativistic Effects and Dirac Equation, Matrix Mechanics.

PHY 4703 Physical Electronics I (4) Prereq: PHY 2049. Introduction to passive circuit elements. Resonant L, C, R circuits filters and rectifiers.

PHY 4722 Physical Electronics II (4) Prereq: PHY 4703. Active circuits elements. Diodes, rectifiers, low pass and high pass filters, semiconductors, electronics circuits and familiarization with electronic equipment.

PHY 4722L Physical Electronics-II Laboratory (1) Coreq: PHY 4722. Practical hands-on experiments for students enrolled in PHY 4722 lecture.

PHY 4802L Advanced Laboratory (2) Prereq: PHY 4604. For physics majors. Emphasizes independent work. Involves four experiments in modern physics.

PHY 4931, 4932 Physics Seminar I, II (1, 1) Current topics in physics, with some lectures by distinguished visiting scientists. Discussions on nature of physics, its opportunities, and prospectus.

PHY 4936 Special Problems Variable (1-4) Prereq: Consent of instructor. Provision made for advanced students to work independently on special lab or theoretical research problems.

PHZ 3113 Mathematical Methods for Physics I (3) Prereq: MAC 3313. Vector and tensor analysis, matrices and determinants, vector differential calculus, line and surface integrals, ordinary and partial differential equations, and Fourier series and integrals.

PHZ 3114 Mathematical Methods for Physics II (3) Prereq: PHZ 3113. Sturm-Liouville problem, power series solutions, Laplace and Bessel equations, complex analysis (Taylor and Laurent series, residues, analytic functions) probability and statistics, numerical analysis.

PHZ 3302 Radiation Physics (4) Prereq: PHY 3101. Radiation emitted by atomic nuclei, nuclear transformations, nuclear reactors, and experimental detection of radiation.

PHZ 3302L Radiation Physics Laboratory (0) Coreq: PHZ 3302. Modern equipment is used to familiarize students with modern day equipment in physics.

PHZ 4303 - Nuclear Physics (3) Prereq: PHY 4604. Nuclear structure, stability, abundancies and nucleogenesis, interaction of electrons, alpha particles and gamma rays with matter.

PHZ 4404 Condensed Matter Physics (3) Prereq: PHY 3101, PHY 4324. For senior physics majors or materials engineering majors. Crystallography, x-ray diffraction, magnetic materials, nuclear magnetic resonance, electrons in metals and superconductivity.

PHZ 4710 Biophysics (3) Prereqs: PHY 20489, PHY 2048-9L, MAC 2311, MAC 2312. Introduction into biophysics for undergraduate students. Theoretical description of the relations between the biophysical and biochemical processes in cellular organisms in the cell and the structure of its molecular constituents using concepts and g methods in theoretical and /experimental physics and mathematical and computer modeling.

PSC 1121 Introduction to Physical Science (4) History, philosophy, methodology, and content of astronomy, physics, and chemistry which have allowed man to orient himself to his physical environment. A series of practical experiments and laboratory demonstrations are included. Independent projects may also be

assigned.

Master of Science in Physics

The Florida A&M University (FAMU) Department of Physics, in the College of Science and Technology, offers a program of study leading to a Master of Science in Physics degree. This program is designed to provide a solid foundation in physics course work (beyond the baccalaureate level) and research essential for pursuing doctoral studies in physics or related academic areas. The successful student will be prepared to enter the work force, or enter a high quality Ph.D. program. The student may choose either a thesis or non-thesis program leading to the M.S. in Physics degree.

The Department has 16 faculty members committed to excellence in research. The faculty conducts experimental research in the areas of:

- Axion and astrophysical particle detection
- Laser ablation
- Laser interactions with matter
- Nanomaterial growth and properties
- Plasma physics and theoretical research
- Atomic and molecular scattering
- Electronic and structural properties of carbon nanomaterials
- Numerical algorithms and optimization methods
- Quantum theory on manifolds

Admission to the Master of Science program is in conformity with the uniform requirements established by the School of Graduate Studies and Research as described in other sections of this catalog. These include:

1. A 3.0 (on a scale of 4.0) cumulative grade point average covering the last 60 semester hours of undergraduate preparation,

2. The possession of a baccalaureate degree from an accredited institution of higher education;

3. Acceptance of undergraduate seniors into the Master of Science program is conditional upon their completion of all requirements for the baccalaureate degree before commencement of graduate studies;

4. In addition, other factors such as motivation, attitude, and potential for successful graduate work will be considered. These factors will be judged from at least two letters of recommendation from undergraduate physics instructors and/or personal interviews. Conditional acceptance into the graduate program may be granted as a result of these letters or interview when requirement 2 is not met. However, a student may not remain in the program for more than one semester with a conditional acceptance;

5. Foreign students whose native language is not English, must make a score of at least 550 on the TOEFL (Test of English as a foreign language).

Academic Requirements

The requirements consist of a set of core requirements and then separate requirements for the thesis and non-thesis programs:

Core Requirements

1. Completion of 24 semester hours of the core curriculum which consists of:
PHY 6246, 6247 Classical Dynamics I and Classical Dynamics II
PHY 6346, 6347 Electrodynamics I and Electrodynamics II
PHY 6524 Quantum Statistical Mechanics
PHY 6645, 6646 Quantum Mechanics I and Quantum Mechanics II
PHZ 6115 Mathematical Methods for Physics I
These courses must be completed with at least a 3.0 grade point average (GPA);

2. Passing the departmental proficiency examination. This exam consists of a written examination given twice per year covering the content of an undergraduate program in physics. All first year graduate students must pass the exam by end of their second year.

3. After completion of the requirements for a thesis or non-thesis program, the degree candidate shall be required to pass an oral examination on graduate level physics core course work. The exam shall be set by the candidate's graduate committee which shall consist of four physics faculty members. If the student has completed a thesis, one committee member will be the candidate's thesis advisor and the exam will also include a defense of the thesis. If the candidate is not a thesis student, the exam may also cover additional course work. The additional courses to be covered will be communicated by the committee to the student at least one month prior to the examination;

4. Every candidate is required to teach at least one undergraduate laboratory for one semester (PHY 6110r).

Additional Non-Thesis Requirements

1. In addition to the 24 semester hours of core curriculum, 12 semester hours must be taken from Physics courses numbered 5000 and above with at least 9 taken on a letter grade basis.

Additional Thesis Requirements

1. In addition to the 24 semester hours of core curriculum, 9 semester hours must be taken from physics courses numbered 5000 and above with at least 6 semester hours taken on a letter grade basis.

2. The candidate must submit a thesis which is accepted by the thesis advisor and the thesis committee. Acceptance is given by way of signature.

3. No more than 3 semester hours of PHY 6918 credit and 3 semester hours of PHY 6110 credit may be counted toward the M.S. degree.

4. At least 3 semester hours of thesis credit (PHY 5971r) must be passed.

Doctor of Philosophy in Physics

The Florida A&M University (FAMU) Department of Physics in

the College of Science and Technology offers a program of study leading to the Doctor of Philosophy degree. The primary objective of the doctorate program in Physics is to provide talented graduate students with a rigorous academic environment in which to conduct research and to develop the analytical, empirical, and leadership skills required for mathematical, scientific and technological careers. The Department is comprised of sixteen faculty members committed to excellence in research. The faculty conducts experimental research in the areas of:

- Axion and astrophysical particle detection
- Laser ablation
- Laser interactions with matter
- Nanomaterial growth and properties
- Plasma physics and theoretical research
- Atomic and molecular scattering
- Electronic and structural properties of carbon nanomaterials
- Numerical algorithms and optimization methods
- Quantum theory on manifolds

The facilities include four on-campus laboratories in the Frederick S. Humphries Research Building, where research is done on detector physics, laser based electron acceleration, and computational atomic, molecular, and condensed matter physics. There is also an off-campus facility at Innovation Research Park which houses the Center for Plasma Science and Technology (CePaST) comprising four large laboratory spaces, in which laser interactions with matter, nanomaterial growth, X-pinch fusion research, and spheromak physics are investigated.

Admission

Admission to the Doctorate of Philosophy in Physics program is granted in conformity with the uniform requirements established by the School of Graduate Studies and Research as described in other sections of this catalog. These include: (1) the possession of a Bachelor and/or Master of Science in Physics degree from an accredited institution of higher education (official academic transcripts are required); (2) a GPA of 3.0 on a scale of 4.0 covering the last 60 semester hours of undergraduate preparation; (3) have received two strong letters of support from undergraduate or graduate faculty who are familiar with the applicant's academic ability and work experience. Foreign students whose native language is not English must make a score of at least 550 on the TOEFL.

In addition, other factors such as motivation, attitude, and potential for successful graduate work will be considered. These factors will be judged from letters of recommendation submitted by the student's undergraduate instructors and/or personal interviews. Conditional acceptance into the graduate program may be granted; however, a student may not remain in the program for more than one semester with a conditional acceptance. The doctorate must be completed in seven years from the time of admission to the program.

Admission with a Bachelor of Science Degree

Upon entering the program with a B.S. degree in physics:

1. The student, in the first year post admission, will take the six core courses indicated below in the Academic Requirements section.

2. The student will take a written qualifying exam by the end of second year.

3. The student will take the remaining core courses and additional elective courses to expand his/her knowledge in chosen specialty in the second year.

4. The student will be required to successfully complete the Ph.D. candidacy or "A" exam after completing courses with a GPA of 3.00 or higher.

5. The student, upon successful completion of research, will then be required to take the "B" exam on his or her written dissertation.

6. The oral defense will be conducted by a committee of three physics faculty: the research advisor and two faculty chosen after consultation with the thesis advisor.

7. Recommendation to either pass or fail a candidate will then be forwarded to the School of Graduate Studies and Research, which will award the Ph.D. in physics degree.

Admission with a Master of Science Degree

1. The student will be given the option of either writing the qualifying exam immediately upon entering the program or spending a year taking supplementary course work.

2. The student will then join the Ph.D. program after passing the qualifying exam, M.S., at the second-year level.

3. Each student, after passing the "A" exam, will then begin thesis research supervised by a faculty member.

4. The student, upon successful completion of research, will then be required to take the "B" exam on his or her written dissertation.

5. The oral defense will be conducted by a committee of three physics faculty: the research advisor and two faculty chosen after consultation with the thesis advisor.

6. Recommendation to either pass or fail a candidate will then be forwarded to the School of Graduate Studies and Research, which will award the Ph.D. in physics degree.

Further details concerning matriculation through the program can be found in the Department's Graduate Manual, available by contacting the Department Chair.

Academic Requirements

A student must register for 9 credit hours each semester to be considered a full time graduate student. That number generally comprises three courses and/or supervised research. 36 hours of course

work (in-class lecture content) at the graduate level must be completed. Ideally, this requirement can be met by the end of the second year in the program. Below is the typical load for the first two years. Ninety credit hours or 72 hours for the minimum FAMU residence requirement and 18 hours of dissertation research activities are required for the Ph.D. in Physics.

First year

Fall Semester	**Sem.Hrs**.
PHY 6246 Classical Mechanics 1	3
PHY 6346 Electromagnetism 1	3
PHY 6645 Quantum Mechanics 1	3

First year

Spring Semester	**Sem.Hrs**.
PHY 6247 Classical Mechanics 2	3
PHY 6347 Electromagnetism 2	3
PHY 6646 Quantum Mechanics 2	3

Second year

Fall Semester	**Sem.Hrs.**
PHY 6524 Statistical Mechanics	3
PHY 6115 Math Methods	3
Elective	3

Second year

Spring Semester	**Sem. Hrs.**
PHY 6918 Advanced Lab	3
PHY 6347 Elective	3
Elective	3

The department offers a wide range of electives. You may choose as you see fit, but it will be to your advantage to take those courses that are related to your area of research. If you are unsure as to which classes you should take, you should speak to someone familiar with your interests when choosing your classes. The Physics Department encourages you to continue to enroll in formal classes in your third and fourth years of your Ph.D. degree, and the faculty will attempt to be responsive to students making requests for a specific course or specific courses.

Graduate student support, including tuition support, is available for qualified students.

Course Descriptions

PHY 5909 Directed Individual Study (1-12): Individual study directed by graduate faculty on a topic of mutual student and faculty interest.

PHY 5920 Colloquium (1): Physics colloquia as scheduled.

PHY 5971 Thesis (3-6): Course to be taken while preparing the Master's thesis-supervised by the thesis advisor.

PHY 6110 Supervised Teaching (1-6): Supervised teaching practicum for physics graduate students. Individual assignments will be given in either the General Physics Lab, General Physics Recitation and /or College Physics Lab.

PHY 6157 Computational Physics (3): Computational methods of theoretical physics with applications to atomic, molecular, condensed matter, and many body physics; introduction to C++ programming and parallel programming with hands-on projects. Parallel algorithms in C++ using MPI to solve large linear systems.

PHY 6246 Classical Dynamics I (3): Review of Newtonian mechanics, Lagrange's and Hamilton's equations of motion, variational methods, symmetry, kinematics and dynamics of rigid body motion, canonical variables and transformations.

PHY 6247 Classical Dynamics II (3): Canonical transformations, Hamilton-Jacobi theory, small oscillations, continuous systems, special relativity, mechanics of continuous media.

PHY 6346 Electrodynamics I (3): Electrostatics and magnetostatics, boundary-value problems in macroscopic media and dielectrics, electromagnetic waves and Maxwell's equations, conservation laws.

PHY 6347 Electrodynamics II (3): Propagation of electromagnetic waves in wave-guides, resonant cavities and optical fibers, radiating systems, scattering and diffraction of electromagnetic waves, special relativity, dynamics of relativistic particles and electromagnetic fields, radiation by moving charges.

PHY 6524 Quantum Statistical Mechanics (3): Canonical structure and formulation of statistical mechanics, the thermodynamic limit, gas and liquid theory, phase transitions and critical phenomena, virial expansion, quantum statistics.

PHY 6645 Quantum Mechanics-I (3): Quantum theory of measurement, wave mechanics, Schrodinger theory, semi-classical WKB approximation, bound state techniques, periodic potentials, angular momentum, scattering theory, phase shift analysis.

PHY 6646 Quantum Mechanics-II (3): Spin and other two dimensional systems, matrix mechanics, rotation group, symmetries, time independent or time dependent perturbation theory, atomic and molecular systems, Feynman diagrams, basic scattering theory.

PHY 6653 Advanced Collision Theory (3): Formal solutions of multi-channel scattering theory in both time-dependent and time-independent formalism. Approximations including Born, Semi-classical, variational. Applications to simple atomic and molecular systems. Role of orientation and alignment on cross sections and/or other observable. Numerical techniques, computer programming and implementation.

PHY 6668 Quantum Field Theory I (3): Elementary relativistic quantum field theory: the Klein-Gordan field, the Dirac field, interacting fields and Feynman diagrams, elementary processes of quantum electrodynamics, introduction of radiative corrections, renormalization theory.

PHY 6669 Quantum Field Theory II (3): The non-abelian gauge theories: the Parton model of hadron structure, quantization of non-abelian gauge theories, quantum chromodynamics (QCD), gauge theories with spontaneous symmetry breaking, quantization of spontaneously broken gauge theories. Continuation of PHY **6668.**

PHY 6675 Quantum Theory of Many Particle Systems (3): Second quantization, zero-temperature Green's functions formalism and field theory, applications to Fermi systems, Bose systems and linear response theory, finite temperature Green's function formalism and applications.

PHY 6815 Advanced Graduate Laboratory in Physics (3): Individualized work in experimental physics. There are over thirty experiments which represent early quantum physics, nuclear physics, condensed matter physics, monte carlos and stochastic processes, photonics, renewable energy source, bubble memory, electron spin resonance, atomic spectroscopy. Students are required to complete

six experiments during the term.

PHY 6918 Supervised Research (1-9): Graduate student research supervised by the dissertation advisor; available to graduate students who have passed the qualifying examination for the physics doctoral program and have not taken the advancement to candidacy examination for the doctorate in physics.

PHY 6938 Special Topics in Physics (2-4): Special topics is a faculty supervised study of advanced subjects in experimental and/or theoretical physics.

PHZ 6115 Mathematical Methods for Physics I (3): Rigorous discussion of applications of mathematical methods in physics. Linear vector spaces, linear partial differential equations, operator theory, complex analysis including Green's functions, orthogonal polynomials, Fourier analysis and introduction to group theory.

PHZ 6116 Mathematical Methods for Physics II (3): Fourier transforms and fast Fourier transforms for spectrum analysis, tensor calculus, integral transforms and calculus of variations.

PHZ 6156 Advanced Computer Methods in Physics (3): Introduction to computer operating systems and compliers, scientific programming, vector and parallel processing solutions to linear algebraic equations, Fourier transforms and spectral methods, boundary value problems, partial differential equations and graphical methods.

PHZ 6236 Theory of Atomic and Molecular Collisions (3): Classical and quantum scattering by central forces, phase shifts analysis and cross sections, elastic and inelastic scattering, multi-channel scattering theory, Schwinger, Kohn, and Newton methods, scattering in the laboratory and center of mass reference frames, fundamentals of experimental techniques, and selected topics from different collision theories: electron-atom, electron-molecule, atom-atom, atom-ion, and atom-molecule.

PHZ 6304 Nuclear Physics (3): Nuclear symmetries and conservation laws, the force between nucleons, nuclear structure, nuclear models.

PHZ 6426 Condensed Matter Physics I (3): Application of group theory to crystal structures, band structure of metals and semiconductors; tight-binding method and applications to insulator bands and impurity states; thermodynamics, transport and optical properties of metals and semiconductors.

PHZ 6427 Condensed Matter Physics II (3): Electro-phonon interactions, pseudo-potentials and phonon dispersion, magnetism, low-temperature super-conductivity, high-temperature superconductivity, two-dimensional phenomena.

PHZ 6480 Fluid and Plasma Physics I (3): Introduction to modern fluid physics including: ideal viscous and non-equilibrium flow; thermodynamics and statistical mechanics of equilibrium plasmas; transport phenomena; high temperature hydrodynamics; kinetic equations, non-linear systems; and turbulence.

PHZ 6607 General Relativity (3): The Einstein field equations are developed via a tensor and geometric approach and used to describe astronomical systems and cases of matter under extreme conditions.

PHZ 6651 Quantum Scattering Theory (3): Time-dependent, formal scattering theory, time-independent formal scattering theory, physical cross sections, methods and approximations for formal solutions, single-channel scattering in three dimensions, complex angular momentum (Watson-Regge method), multi-channel theory, decay of unstable states.

PHZ 6676 Particle Physics (3): Leptons, mesons, and baryons, introduction to the Standard Model of Electroweak Interactions and its applications, Higgs mechanism, construction of the standard model, phenomenology of weak interactions, QCD and scaling violation.

PHY 8966 Master's Comprehensive Examination (0) (S/U grade): Course to be taken during semester in which the Master's comprehensive examination is to be taken.

PHY 8976 Master's Thesis Defense (0): Course to be taken during semester of Master's thesis defense.

PHY 8980 Doctoral Dissertation (1-9): The doctoral dissertation course is designed for physics graduate students who have successfully passed the qualifying and advancement to candidacy examinations; finished all dissertation research requirements; and are preparing for the dissertation defense.

College of Social Sciences, Arts and Humanities

The College of Social Sciences, Arts and Humanities (CSSAH) is a multidisciplinary College connecting students to the world with an array of learning opportunities including research, internships, co-op, service learning, online instruction, and experiential scholarship. Students examine enduring and systemic questions about human nature and social behavior. They study the organization and functions of government, the interrelations of global societies and political systems. Our students are challenged to examine critically how the world is shaped by diverse values, histories and cultures.

The integrated and rigorous curriculum of the departments comprising the College opens the world to students. It provides them with an expansive understanding of the arts, anthropology, American History, the African American experience, criminal justice, geography, humanities, law, modern language, music, philosophy, psychology, religion, sociology, social work, and theatre. CSSAH is the largest college in the University and is home to a prolific faculty and a diverse student-body.

In recent semesters students have studied abroad in China, South Africa, and various countries in Latin America. They have presented their research at national academic conferences in history, English/American Literature and psychology. Students have interned at a variety of educational, social service, and political organizations and agencies. Students have performed on stage and honed their talents to the acclaim of critics and local audiences. Promising musicians and artists have showcased their skills through varied media, compositions and recitals. Their artistic and professional portfolios are based on years of hard work and critical assessment and evaluation.

The academic experience of the CSSAH is state-of-art and inventive. The College makes maximum use of technology and a variety of teaching pedagogies. Upon graduation, students are prepared to pursue professional careers and/or continue their education at the graduate level in professional studies. Through the CSSAH coursework comes alive as the educational experience for students within the College emphasizes theory, application, professionalism, and education for the greater good.

Degree Programs

Organized into eight (8) degree-granting units, the Division of Interdisciplinary Studies and the Department of Army ROTC, the college offers fifteen (15) separate majors leading to the bachelor of science, bachelor of arts, bachelor of criminal justice, and bachelor of social work degrees. It also offers three master-level programs: master of applied social science, master of community psychology and master of social work.

Students enrolled in the College of Social Sciences, Arts and Humanities are not limited to the several curricula offered by the college. They may take courses offered in other colleges and schools of the University, which, with the approval of the department chairperson, may be included in the degree program, used as a minor field of concentration, or used as electives. In order to graduate, undergraduate students are required to maintain a cumulative grade point average of 2.0 and a grade of "C" or above in all major courses, and graduate students must have a minimum 3.0. All directed individual study (DIS) courses must be approved by the supervising professor, the chairperson and the dean. Prior approval of the dean is required for all transient credit.

Undergraduate Programs

Bachelor of Science/Bachelor of Arts in African-American Studies
Bachelor of Arts in English
Bachelor of Science/Bachelor of Arts in Interdisciplinary Studies
Bachelor of Science/Bachelor of Arts in Philosophy & Religion
Bachelor of Science/Bachelor of Arts in Psychology
Bachelor of Criminal Justice
Bachelor of Social Work
Bachelor of Science/Bachelor of Arts in Political Science
Bachelor of Science in Sociology
Bachelor of Science/Bachelor of Arts in Theatre
Bachelor of Science/Bachelor of Arts in Fine Arts
Bachelor of Arts/Bachelor of Science in Music
Bachelor of Science/Bachelor of Arts in History

Graduate Degree Programs
Master of Applied Social Science (M.A.S.S.)
Master of Science in Community Psychology
Master of Social Work (M.S.W.)

Department of English and Modern Languages

The Department of English and Modern Languages offers programs leading to the bachelor of arts degree in English. It also offers minor concentrations in literature and writing and courses in speech.

Faculty
Professors Emeriti: Blake, Johnnie C.; Preu, Dana
Professors: Boston, Genyne; Campell, Rick; Davis, Mary K.; Dawson, Emma W.; Kemp, Yakini; Powell, Deidre; Sawh, Ruth R.
Associate Professors: Cohen, DeSilver C.; Diallo, Mary; Houston, Joe Ann; King-Pedroso, Natalie.; McIntosh, Yvonne; Seay, Geraldine; Stallworth, Frances H.; Ramos, Johanna; Taha, Taha A.; Thomas, Leesther; Trujillo, Evelyn ;Yon, Veronica
Assistant Professors: Brown, Anne G.; Bryant, Kendra; Clark, Chandra; Ford, Na'Imah; Garnes, Lamar; Hudson, Jenise; McCray, April; Showers, Zachary; Snodgrass, Kristine Surrency, Jeneen;

Instructors: Abrams, Melanie; Bryant, Ceron; Cheeks, Makisha; Kaiser, Pamela; Mason, Tracee; Riley, Nandi; Stennett, Yvette; White, Melanie; Williams, Alexander

Admission Requirements

Any student in good standing may become an English major. All English majors are encouraged to become active members of the English Literary Guild.

General Course Prerequisites

Each student enrolled in the university is expected to earn a minimum grade of "C" in ENC 1101, ENC 1102 or the honors equivalent or in any course offered by the department at the 2000 level or above.

Course Requirements for the English Major

An English major must complete the following thirty-six (36) semester hours with a grade of at least C in each course. All courses in which grades below C have been earned must be repeated. The overall average in major courses should be at least 2.00. In addition, students must complete the following course:

Supporting courses are history (EUH 3000/4000 or AMH or AFA 3000/4000); French or Spanish (12 hrs.); philosophy (PHI 2010); psychology (PSY 2012); anthropology (ANT 2000); speech (SPC 1017/2608); and computer information systems (CGS 2060 or EME 2040).

The English major requirement of thirty-six (36) semester hours above the general studies requirements does not mean that additional hours are not encouraged; they are, in fact, strongly recommended for all majors for complete background preparation.

The Minor Requirements for English Majors

All English majors must select a minor field of study in an area of concentration, such as humanities, theatre, foreign language, history, art, music, philosophy, journalism, or another area approved by the advisor and the chairperson.

The Requirements for a minor in English

The English minor requires 18 credit hours. The student should select one of the two concentrations for the minor.

Minor in Literature:

The minor in English with a literature concentration: Prerequisite: LIT 2110 Introduction to Literature I or LIT 2120 Introduction to Literature II 3 credits

Additionally, 15 credit hours may be selected from the following:

ENL 3013 English Literature I or ENL 3034 English Literature II or any 3000 or 4000 ENL course
AML 3041 American Literature I or any 3000/ 4000 AML course

ENC 3320 Advanced Composition
LIT 4083 Contemporary Literature or any LIT 3000/4000 course
L1N 4680 Advanced Grammar or LIN 4060 History of the English Language
AML 4604 African American Legacy I or AML 4934 Seminar in African American Literature or any 4000 African American Literature
ENL 4331 Shakespeare I or 4332 Shakespeare II

Minor in Writing

The minor in English with a writing concentration: Prerequisite: LIT 2110 Introduction to Literature I or LIT 2120 Introduction to Literature II 3 credits

Additionally, 15 credit hours may be selected from the following:

ENL 3013 or 3034 English Literature or any 3000 or 4000 ENL course
AML 2010 American Literature I or AML 3041 American Literature II or any 3000/ 4000 AML course
L1N 4680 Advanced Grammar or LIN 4060 History of the English Language
ENC 3320 Advanced Composition or ENC 3243 Technical Writing
CRW 3110 Techniques of Fiction or CRW Techniques of Poetry or any CRW 3000/4000
AML 4604 African American Legacy I or any 4000 African American
Literature

Assistance for CLEP Students

The department offers assistance to any student enrolled in the university who passes the College Level Examination Program (CLEP) test in freshman communicative skills but who needs additional practical writing experiences. It is recommended that such student enroll for a minimum of three (3) semester hours in a 2000 or 3000 level composition course. Other specialized courses in composition are also offered to meet the needs of students in written communication.

Curriculum Guide
*Students should check with academic advisors for recent curriculum changes.

Bachelor of Arts Degree in English

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Freshman Communicative Skills I, II	6
MGF 1106 Math for Liberal Arts Majors I and II or any College Math	6
FRE/SPN1120, 1121 Elementary French/Spanish I, II	8
Natural Science Course on University Approved List	3
Natural Science Course on University Approved List	3
SPC 1017 Foundations of Speech or SPC 2608 Public Speaking	3
AMH 2091 African American History or AFA 3104 African American Experience	3
SLS 1101 College Orientation	2

Total	**34**

Sophomore Year	**Sem. Hrs.**
Humanities Elective	3
FRE/SPN 2220 Intermediate French/Spanish I	4
THE 2000 Introduction to Theatre	3
ENC 3320 Advanced Composition	3
LIT 2110, 2120 Introduction to Literature I, II	3
PHI 2010 Introduction to Philosophy or Elective	3
CGS 2060 Introduction to Computer Literacy I or EME 2040 Introduction to Education Technology	3
PSY 2012 Introduction to Psychology or ANT 2000 Introduction to Anthropology or SYG 2000 Introduction to Sociology	3
AML 2010, 3041 American Literature I, II	6
Total	**31**

Junior Year	
ENL 3013, 3034 English Literature I, II	6
AML 4604 or 4610 African American Legacy/Novel or 4934 Afro-American Seminar	3
ENL 4331 or 4332 Shakespeare I, II	3
EUH 3501 History of England or any 3000/4000 AMH course or Elective	3
ENG 3048 Theories and Techniques of Literary Studies	3
English Elective 3000/4000 ENL, AML, CRW, LAE	3
PHI Elective	7
Total	**31**

Senior Year	
AML 4101/AML 4154/ENL 4240 (American Novel or American Poetry or Victorian or Romantic Period)	3
LIT 3000/4000 course	3
LIN 4060 History of the English Language	3
LIN 4680 Advanced Grammar	3
Electives (Student should consider minor or other literature courses)	3
Minor	**12**
Total	**120**

The Department of English and Modern Languages also offers courses in French and Spanish.

FRE 1120 Elementary French I Lecture/Lab	3/1
FRE 1121 Elementary French II Lecture/Lab	3/1
FRE 2220 Intermediate French I Lecture/Lab	3/1
SPN 1120 Elementary Spanish I Lecture/Lab	3/1
SPN 1121 Elementary Spanish II Lecture/Lab	3/1
SPN 2220 Intermediate Spanish I Lecture/Lab	3/1

Course Descriptions

AML 2010, 3041 American Literature I, II (3,3) Prereq: ENC 3320 (English Majors) Studies in American literature from colonial days to present.

AML 3311 Major Figures in American Literature (3) Study includes, but is not limited to, figures such as Dickinson, Faulkner, Hawthorne, Baldwin, and Walker.

AML 4101/4121 American Novel I, II (3, 3) Prereq.: ENC 1101& ENC 1102 A study of selected novels produced by major U.S. writers which introduces students to extended analysis of the literary genre of the novel.

AML 4154 Modern American Poetry (3) Prereq: LIT 2110. Study includes, but is not limited to, major American poets such as Pound, Williams, Cummings, Lowell and Hughes.

AML 4610/4276 African American Novel I, II (3) Prereq: ENC 3320 (English Majors) The most significant black American novelists from William Wells Brown to contemporary authors such as Alice Walker.

AML 4934 Seminar in African American Literature I, II (3, 3) Prereq: ENC 3320 Current topics organized around selected writers or themes which reflect the political and artistic values of African American culture.

AML 4604/4605 Legacy of African American Literature I,II (3) Prereq: ENC 3320 Selected readings from the literature of African Americans from the pre-Civil War era through present day.

AML 5216 Early American Literature (3) American literature from its beginning to 1815, including religious, social and political influences.

AML 5616 The African American Novel (3) Includes Charles Chesnutt, James Weldon Johnson, Jean Toomer, Zora Neale Hurston, Richard Wright, Ralph Ellison, James Baldwin, Toni Morrison, and Alice Walker.

AML 5236 Studies in American Realism and Naturalism (1850-1910) (3) A study of the intellectual, social and literary developments of this realistic-naturalistic period. Emphasis is placed upon the literary achievements of such writers as Howells, Twain, James, Crane, and Garland.

AML 5246 Twentieth Century American Literature (3) In-depth study of one or two major literary figures of the twentieth century, selected from the following list: T.S. Eliot, William Faulkner, Richard Wright, Theodore Dreiser, Ernest Hemingway, James Baldwin, Alice Walker, Toni Morrison.

AML 5935 Seminar in African American Literature (3) Current readings and individualized research organized around selected writers or themes which reflect the political and artistic values of Afro-American culture.

AML 5938 Seminar in American Literature (3) Current topics in American literature organized around selected writers and themes which reflect the political, cultural, and artistic values of society.

CRW 3110/4120 Techniques of Fiction Writing (3) Techniques for developing skills in fiction writing.

CRW 3211/4224 Techniques of Creative Nonfiction (3) Techniques for developing skills in creative nonfiction writing.

CRW 3311/4312 Techniques of Poetry Writing (3) Techniques for developing skills in poetry writing.

ENC 1101, 1102 Freshman Communicative Skills I, II (3,3) Freshman Composition courses which include basic communicative skills, essay development, research documentation, library usage, and critical thinking must be taken for maximum credit of 6 semester hours.

ENC 1121, 1122 Freshman Composition (Honors) (3,3) Accelerated courses for students admitted to General Honors Program. Other students may enroll with consent of instructor.

ENC 2300 Improving Writing Competency (3) Prereq: ENC

1101, 1102. Development of skills necessary for writing various forms of expository prose.

ENC 3243 Technical Writing (3) Prereq: ENC 1101, 1102. Emphasis is on clear expository writing of memoranda, reports, and articles in student's particular field.

ENC 3320 Advanced Composition (3) ENC 1101, 1102. Techniques of essay development and style including critical evaluation of prose genre.

ENG 3048 Theories and Techniques of Literary Studies (3) Introduces the student to contemporary literary theories such as structuralist, post-modernist, feminist, Marxist, deconstructionist, transactional, literary response, and the black aesthetic and their application to selected literary works.

ENG 4905 Directed Individual Study (03-09) Specialized studies in English language and/or literature.

ENG 5018 Literary Criticism I (3) Development of literary criticism from Plato to Dryden.

ENG 5019 Literary Criticism II (3) Development of literacy criticism from Dryden to contemporary literacy criticism.

ENG 5905 Directed Individual Study (1-5) Specialized studies in English language and/or literature.

ENL 3013, 3034 English Literature I, II (3,3) Survey of English literature from beginning to 1914.

ENL 4101 The English Novel (3) History of the novel from Defoe to Hardy.

ENL 4221 English Literature in the Seventeenth Century (3) Non-dramatic works of Milton and other principal writers of the period.

ENL 4230 English Literature in the Eighteenth Century (3) Study of major writers, including Defoe, Swift, Pope, Fielding, Johnson, Gray, Burns, and Blake.

ENL 4240 The Romantic Period (3) English poetry, 1798-1832, including Wordsworth, Coleridge, Byron, Shelley and Keats.

ENL 4251 Victorian Literature (3) Significant poetry and prose of major writers against scientific and philosophical background which the age afforded.

ENL 4311 Chaucer (3) Selections from The Canterbury Tales and Troilus and Criseyde.

ENL 4331, 4332 Shakespeare I, II (3,3) Study of Shakespeare's development of dramatic techniques and ideas in his early, middle, and late plays.

ENL 5236 Eighteenth Century Literature (2) Major writers from 1660-1798, including Dryden, Addison and Steele, Swift, Pope, Fielding, Johnson, Gray, Burns and Blake.

ENL 5246 The Romantic Period (3) Examination of the most significant English prose and poetry written between 1798 and 1832.

ENL 5317 Chaucer (3) Selections from The Canterbury Tales, Troilus and Criseyde, and the minor poems.

ENL 5335 Shakespeare (3) Study of Shakespeare's development of dramatic techniques and ideas.

ENL 5347 The Age of Milton (3) Prose and poetry of Milton, especially Paradise Lost, Sampson and Agonistes and Areopagitica, viewed against the background of the age.

ENL 5932 Seminar in English Literature (3) Current topics in English literature, organized around selected writers and themes which reflect the political, cultural, and artistic values of English society.

FRE 1120 Elementary French I (3/1) Introduction to the French language and culture; basic grammar listening, speaking, reading, and writing. Lecture/Laboratory

FRE 1121 Elementary French II (3/1) Prereq: FRE 1120 or equivalent. Introduction ot the French language and culture; basic grammar, listening, speaking, reading and writing. Lecture/Laboratory.

FRE 2220 Intermediate French (3/1) Prereq: FRE 1101 or equivalent. Continuation of study of the French language and culture. Emphasis on intermediate grammar and further development of basic skills: listening, speaking, reading, and wriitng. Lecture/Laboratory**.**

LAE 4360 Teaching of English in Middle/High School (3) Prereq: ESE 3341 and twenty-seven hours of English. Established and experimental methods of instruction; interests of adolescents in language and literature through print, radio, film, and theatre; selection of materials and preparation of units of study.

LIN 4060 A History of the English Language (3) Introduction to the origins of the English Language as they relate to the Indo-European family of Languages and to the developments of English from its earliest days to the present.

LIN 4680 Advanced Grammar (3) Traditional and modern approaches to study of English grammar. Required of English majors and minors. Open to upperclassmen who need or desire further language study.

LIT 2110, 2120 Introduction to Literature I, II (3,3) Prereq: ENC 1102. Thorough study and evaluation of selected major writers of the Ancient World, the Middle Ages, the Renaissance, and the Modern World.

LIT 3115 Classical Literature in Translation (3) Study of Greek, Roman, and Hebrew Literature.

LIT 3196 African Caribbean Literature (3) Prereq: ENC 1101, 1102. A study of literature from the Caribbean written primarily by writers of African descent. The development of a Caribbean Aesthetic, the politics of decolonization, and the notions of home/exile will be major topics explored throughout the semester.

LIT 3333 Multicultural Literature for Adolescents (3) Fosters an appreciation of the variety of reading materials available for adolescents, as well as an understanding of the developmental stages, needs, and interests of young people.

LIT 3353 African Literature (3) Prereq.: ENC 1101, 1102 An introduction to selected literature by major African writers.

LIT 3824 Latino/a Literature (3) In-depth study includes, but is not limited to, literary figures such as Marquez, Cisneros, and Alvarez.

LIT 4043 Drama and Crisis (3) A study of current crisis in Twentieth Century life as revealed in the dramas of Edward Albee, Ed Bullins, Tennessee Williams, and Samuel Beckett.

LIT 4083 Contemporary Literature (3) Fosters an appreciation of current trends in American and world literature.

LIT 4383 Women's Literature (3) Prereq: ENC 1101 & ENC 1102 A thematic study of fiction, prose, and poetry by women writers. The course introduces students to works in English or in English translation by women writers of various cultures with special emphasis on writers of African descent.

LIT 5327 Folklore, Myth, Legend (3) A study of folk literature from classical times to the present.

SPC 1017 Foundation of Speech (3) Introduction to communicative processes as applied to various speech situations: speech models, intrapersonal and interpersonal communication, such as thinking.

SPC 2608 Public Speaking (3) Theory and practice in public speaking, emphasizing speeches for information, persuasion, and

special occasions; listening to and developing, organizing, and delivering speeches.

SPN 1120 Elementary Spanish I ((3/1) Introduction to the Spanish language and culture; basic grammar, listening, speaking, reading, and writing. Lectuer/Laboratory.

SPN 1121 Elementary Spanish II (3/1) Prereq: SPN 1120 or equivalent. Introduction to the Spanish language and culture; basic grammar, listening, speaking, reading and writing. Lecture/Laboratory.

SPN 2220 Intermediate Spanish (3/1) Prereq: SPN 1120 or equivalent. Continuation of study of the Spanish language and culture. Emphasis on intermediate grammar and further development of basic skills: listening, speaking, rading and writing. Lecture/Laboratory.

Department of History, Political Science, Public Administration, Geography and African-American Studies

The Department of History, Political Science, Geography, and African American Studies is organized to encourage interdisciplinary instructional delivery, curriculum planning, and evaluation.

The primary objective of the department is to provide all students and faculty with the opportunity and the supportive environment for excellence in study, learning, teaching, research, and service. Focusing on significant social, historical, political, geographical, and economic issues and problems, students utilize the best available theoretical framework and empirical research in acquiring functional knowledge for understanding problems of the human condition.

The department offers both undergraduate and graduate study. Undergraduate degrees which may be earned are the Bachelor of Arts and the Bachelor of Science. The graduate degree is the Master of Applied Social Science. Specific information about undergraduate degree programs follows. Detailed information about the Master of Applied Social Science degree may be found in the catalog under the section labeled "Graduate Studies."

Faculty

Professor Emeriti: Neyland, Leedell
Professors: Brown, Titus; Eidahl, Kyle; Inamete, Ufot; Jackson, Jr., David H.; Simmonds, Keith
Associate Professors: Cohen, Sylvester; Paul, Gary; Wright, Larry L.
Assistant Professors: Daniels, Christopher; Densu, Kwasi; Ellis, Reginald; Eno, Victor; Guzman, William; Shakir, Ameenah; Warford, John; Young, Darius
Instructors: Lee, Keshya; Proctor, William
Staff: Jackson, Evelyn; Perdue, John

History

The program in history is committed to the development of a versatile course of study designed to prepare students for careers in history, as well as to provide pre-professional training for a variety of other fields. The department offers programs leading to the Bachelor of Arts and Bachelor of Science in History.

Major Requirements:

All students majoring in history are required to earn 30-36 semester hours in history. However, students enrolled in the Bachelor of Arts program must complete twelve (12) hours of foreign language in a single language, typically Spanish or French. Also, they must earn a minor of 18 hours in a second area of concentration. All students earning a major in the area must have at least a 2.00 GPA overall to qualify for graduation with a degree in the program. Also, students must pass all classes other than the natural sciences with a grade of "C" or better. Students should see their academic advisor for course sequences in: mathematics, social science, humanities, statistics, and computers.

Minor Requirements:

Those interested in earning a minor in history are required to complete a minimum of eighteen (18) hours. The following courses are required: AMH 2010 or AMH 2020, HIS 3104, HIS 3150, and nine (9) hours of 3000-4000 level history electives. Students earning a major or minor in history must earn at least a 2.00 GPA ("C") in each history course completed.

CLAST Requirements: Effective July 1, 2011, CLAST scores nor CLAST alternatives are not required for graduation.

Foreign Language Requirement: If you did not complete two (2) units of foreign language in high school, you are required to complete eight (8) hours of a foreign language or American Sign Language prior to graduation.

Bachelor of Arts in History

Freshman Year	**Sem.Hrs.**
ENC 1101, 1102 Communication Skills I, II	6
SLS 1101 First Yr Exp-College Transit	2
MGF 1106 and MGF 1107 Liberal Arts Math I, II	6
HUM Elective Humanities Elective	3
(HUM, ARH, REL, PHI or PHH)	3
POS 1921 Intro. to Professional Development	1
WOH 1012 World History to 1500	6
SYG 2000 Intro. to Sociology	3
or ANT 2000 Intro. to Anthropology	
PSY 2012 Introduction to Psychology	3
AMH 2091 Introduction to African-American	3
History or AFA 3104 African American Experience	
Total	**33**

Sophomore Year	**Sem.Hrs.**
*AMH 2020 U.S. History 1865-Present	3
CGS 2060c or CAP 3505 Computer Applications	3
Science: BSC 1005,BSC 1010c, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 4007, EVY 2570, ISC 1006, or ISC 1007	6
GEA 2000 Geography (GEO or GEA Elective See Advisor)	3
HIS 1921 Introduction to Professional Development (History)	3
PHI 1100 or 2101 Critical Thinking or Intro. to Logic	3
WOH 1022 World History 1500-Present	3
GEO 3421 Cultural Geography or GEA 3600	3
Total	**27**

Junior Year	**Sem.Hrs.**
Foreign Language	8
(in a single language)	

AMH 3571 or AMH 3572, African-American History	3
HIS 3104 Nature of History	3
HIS 3150 Historiography	3
*AMH 2010 U.S. History	3
Minor Course Requirements	9
Total	**29**

Senior Year	**Sem.Hrs.**
AFH 4100 History of Africa from Origins to 1800	3
AFA 4936 Sr. Seminar in African American Studies or POS 4703 Scopes & Methods	3
AMH 4202 20th Century America	3
AMH 4420 History of Florida	3
AFH 4200 History of Africa 1800 to Pres. or LAH 4130 Latin American History	3
EUH Elective European History Elective	6
Foreign Language	4
Minor Course Requirements	9
Total	**34**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science in History

Freshman Year	**Sem.Hrs.**
*AMH 2010 U.S. History 1492 – 1865	3
SLS 1101 First Yr Exp-College Transit	2
AMH 2091 or AFA 3104 African American History	3
ENC 1101, 1102 Communication Skills I, II	6
WOH 1012 World History to 1500	3
HUM Elective Humanities Elective (HUM, ARH, REL, PHI, or PHH)	3
MGF 1106 and MGF 1107	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 or ANT 2000 Introduction to Sociology or Anthropology	3
Total	**33**

Sophomore Year	**Sem.Hrs.**
*AMH 2020 U.S. History 1865-Present	3
Science: BSC 1005, BSC 1010c, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 2570, EVS 4007,ISC 1006, or ISC 1007,	6
CGS 2060c or CAP 3505 Computer Applications	3
GEA 2000 Geography (GEO or GEA Elective See Advisor)	3
GEO 3421 Cultural Geography **o**r GEA 3600	3
LIT 2110 Literature	3
PHI 1100 **or** PHI 21013 Critical Thinking/Introduction to Logic	
WOH 1022 World History 1500 - Present	3
Total	**27**

Junior Year	**Sem.Hrs**
AMH 3571 or AMH 3572 African American History	3
AFH 4200 History of Africa 1800-Pres. or LAH 4130 Latin American History	3
ECO 2013 & 2023 Principles of Economics, I, II	6
ENC 2300 or 3320 Improved Writing	3
HIS 3104 Nature of History	3
HIS 3150 Historiography	3
Minor Course Requirements	9
Total	**30**

Senior Year	**Sem.Hrs.**
AFH 4100 History of Africa to 1800	3
AFA 4936 Sr. Seminar in African American Studies or POS 4703 Scopes & Methods	3
AMH 4202 20th Century America	3
AMH 4420 History of Florida	3
EUH Elective European History Elective (3000-4000 Level)	3
HIS 1921 Introduction to Professional Development (History)	3
History Elective	6
Minor Course Requirements	9
Total	**32**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

African-American Studies

The Bachelor of Science degree in African-American Studies is an interdisciplinary program, utilizing the resources and faculty of several departments. The program is designed to prepare students for careers in teaching, research, social service agency employment, as well as provide pre-professional training for graduate study.

Major Requirements

A major in African-American Studies is required to take thirty-six (36) semester hours of interdisciplinary African-American course cognates. Students earning a major or minor in African American Studies must earn at least a 2.00 GPA ("C") in each course completed in their African American studies discipline. All students earning a major in the area must have at least a 2.00 GPA overall to qualify for graduation with a degree in the degree program. Also, all classes other than natural sciences must be passed with a grade of "C" or better. See your advisor for course sequences in: mathematics, social science, humanities, statistics, and computers.

Minor Requirements

African-American Studies minors must take eighteen (18) hours of interdisciplinary African-American courses, inclusive of AMH 3571, AMH 3572, PUP 3313, SOC 4720, and nine (9) hours of other 3000-4000 level African-American Studies courses.

Foreign Language Requirement

If you did not complete two (2) units of foreign language in high school, you are required to complete eight (8) hours of foreign language or American Sign Language prior to graduation.

Bachelor of Science in African-American Studies

Freshman Year	Sem.Hrs.
AMH 2010 U.S. History to 1865	3
AMH 2091 Intro. to African American History	3
ENC 1101, 1102 Communication Skills I, II	6
HUM Elective Humanities elective (HUM, ARH, REL, PHI, or PHH) MGF 1106 and MGF 1107	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr Exp- College Transit	2
Total	**33**

Sophomore Year	Sem.Hrs.
WOH 1022 History of Civilization	3
Science: BSC 1005, BSC 1010c, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 2570, EVS 4007, ISC 1006, or ISC 1007	6
CGS 2060c or CAP 3505 Computer Applications	3
ECO 2013 Principles of Economics I	3
ENC 2300 or 3320 Improved Writing	3
GEA 2000 or GEO 3421 Geography	3
GEA 3600 Geography of Africa	3
POS 2041 American National Government	3
Total	**27**

Junior Year	Sem.Hrs
AMH 2020 U.S. History since 1865	3
AFH 4100 History of Africa from Origins to 1800	3
AMH 3571 African American History to 1865	3
AMH 3572 African American History 1865-Present	3
HIS 3150 Historiography or POS 4703 Scope & Methods	3
AML 4610/4276 African American Novel	3
PUP 3313 Blacks in the Political Process	3
Minor Course Requirements	9
Total	**30**

Senior Year	Sem.Hrs.
AFA 4936 Seminar in African-American Studies	3
AFA or AMH Electives (3000-4000) African-American Studies or AMH Elective	9
AFH 4200 History of Africa 1800-present	3
POS 4923 Advanced Professional Development	3
SOP 3724 Psychology of Race and Prejudice	3
SYD 4730 Soc. of the Black Experience	3
Minor Course Requirements	9
Total	**33**

There are no prerequisites for African-American Studies; however, it is suggested that students earning the A.A. degree complete AMH 2010: U.S. History 1492-1865 (3) and AMH 2010: U.S. History 1865. Present as part of their lower division courses.

Political Science

The program in political science offers a broad selection of courses and activities adapted to the needs of students who plan careers in law; the several levels of government, including the foreign (diplomatic) service; international organizations; international business and industrial organizations; private enterprise; public relations; research; teaching; and active politics.

Students interested in other vocations will find the courses very beneficial. Degree programs in 1) political science, 2) political science with a concentration in pre-law, 3) political science with a concentration in public administration, and 4) political science with a concentration in urban studies and economic development include the Bachelor of Arts and Bachelor of Science degrees. The Bachelor of Arts degree is distinguished from the Bachelor of Science degree in that the former requires the completion of twelve (12) semester hours of foreign language.

Major Requirements

A major in political science consists of thirty-three (33) semester hours. All political science majors must complete a minor of eighteen (18) hours in another academic field. A major in political science with a public administration concentration consists of the same major requirements as political science except for the requirement of minoring in eighteen (18) hours of public administration instead of another academic field.

Minor Requirements

Other students wishing to minor in political science, public administration, pre-law, urban studies and economic development, or international relations must complete 18 semester hours in one of the aforementioned fields. A minor in political science must also include POS 2001, POS 2041 and PAD 3003. Students earning a major or minor in political science must earn at least a 2.00 GPA ("C") in each course completed in political science or public administration. All students earning a major in the area must have at least a 2.00 GPA overall to qualify for graduation with a degree in any of the degree programs. Also, all classes other than natural sciences must be passed with a grade of "C" or better. See your advisor for course sequences in: mathematics, social science, humanities, statistics, and computers.

Foreign Language Requirement: If you did not complete two (2) units of foreign language in high school, you are required to complete eight (8) hours of a foreign language or American Sign Language prior to graduation.

Bachelor of Arts in Political Science

Freshman Year	Sem.Hrs.
AMH 2010 or 2020 U.S. History	3
AMH 2091 or AFA 3104 African American History	3
ENC 1101 & 1102 Communication Skills I, II	6
HUM Elective Humanities electives (HUM, ARH, REL, PHI, or PHH) MGF 1106	6
MGF 1107 Liberal Arts Math I, II	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr Exp -College Transit	2
Total	**33**

Sophomore Year	Sem.Hrs.

Science: BSC 1005, BSC 1010c, BOT 1010, HUN 2041, PSC 112c, AST 1002, EVY 2570, EVS 4007, ISC 1006, or ISC 1007	6
*CPO 2002 Comparative Government	3
ECO 2013 & 2023 Principles of Economics I, II	6
*POS 2001 Introduction to Political Science	3
*POS 2041 American National Government	3
POS 2112 State & Local Government	3
PHI 2010 Introduction to Philosophy	3
Total	**27**

Junior Year	**Sem.Hrs**
CGS 2060c or CAP 3505 Computer Applications	3
Foreign Language Requirement (in a single language)	8
GEO 2370 or 3421 or GEA 2000 Geography	3
PAD 3003 Introduction to Public Administration	3
PAD 4223 Budgetary and Fiscal Management	3
POS 3603 Constitutional Law	3
POS 4703 Scope & Methods	3
Minor Course Requirements	6
Total	**33**

Senior Year	**Sem.Hrs.**
Foreign Language Requirement	4
POS 4910 Senior Research Seminar	3
POS 4936 Seminar In Political Science	3
POS Elective Political Science Elective	6
POT 4064 ContemporaryPolitical Ideologies	3
Minor Course Requirements	12
Total	**31**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science in Political Science

Freshman Year	**Sem.Hrs.**
AMH 2091 or AFA 3104 African American History	3
ENC 1101 & 1102 Communication Skills I, II	6
HUM Elective Humanities electives (HUM, ARH, REL, PHI, or PHH	6
MGF 1106 and MGF 1107 Liberal Arts Math I, II	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr. Exp-College Transit	2
Total	**30**

Sophomore Year	**Sem.Hrs.**
AMH 2010 or 2020 U.S. History	3
Science: BSC 1005, BSC 1010C, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 2570, EVS 4007, ISC 1006, or ISC 1007	6
ECO 2013 & 2023 Principles of Economics I, II	6
LIT 2110 Literature	3
*POS 2001 Introduction to Political Science	3
*POS 2041 American National Government	3
POS 2112 State & Local Government	3
PHI 2010 Introduction to Philosophy	3
Total	**30**

Junior Year	**Sem. Hrs.**
CGS 2060c or CAP 3505 Computer Applications	3
*CPO 2002 Comparative Government	3
ENC 2300 or 3320 Improved Writing	3
GEO 2370 or 3421 or GEA 2000 Geography	3
PHI 2101 Intro to Logic	3
PAD 3003 Introduction to Public Administration	3
POS 3603 Constitutional Law	3
POS 4703 Scope and Methods	3
Minor Course Requirements	6
Total	**30**

Senior Year	**Sem. Hrs.**
PAD 4223 Budgetary & Fiscal Management	3
POS 4910 Senior Research Seminar	3
POS 4923 Advanced Professional Development	3
POS 4936 Seminar in Political Science	3
POT 4064 Contemporary Political Ideologies	3
POS Elective Political Science Elective	6
Minor Course Requirements	12
Total	**33**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science in Political Science with Concentration in Public Administration

Freshman Year	**Sem. Hrs.**
AMH 2091 or AFA 3104 African American History	3
ENC 1101 & 1102 Communication Skills I, II	6
HUM Elective Humanities electives (HUM, ARH, REL, PHI, or PHH)	6
MGF 1106 and MGF 1107 Liberal Arts Math I, II	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr Exp -College Transit	2
Total	**30**

Sophomore Year	**Sem. Hrs.**
AMH 2010 or 2020 U.S. History	3
Science: BSC 1005, BSC 1010c, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 2570, EVS 4007, ISC 1006, or ISC 1007	6
ECO 2013 & 2023 Principles of Economics I, II	6
LIT 2110 Literature	3
PAD 3003 Introduction to Public Administration	3
*POS 2001 Introduction to Political Science	3
*POS 2041 American National Government	3
*POS 2112 State & Local Government	3
Total	**30**

Junior Year	**Sem. Hrs.**
CGS 2060c or CAP 3505 Computer Applications	3
*CPO 2002 Comparative Government	3

ECP 4230 Labor Law	3
GEO 2370 or 3421 or GEA 4602 Geography	3
PAD 3413 Public Personnel Administration	3
PAD 4024 Administrative Theory and Problems	3
PAD 4223 Budgetary and Fiscal Management	3
PHI 2101 Introduction to Logic	3
PHI 2010 Introduction to Philosophy	3
POS 3603 American Constitutional Law	3
Total	**30**

Senior Year	**Sem. Hrs.**
ENC 2300 or 3320 Improved Writing or Advanced Composition	3
PAD 4404 Public Policy Management	3
PAD 4834 Developmental & Comparative Administration	3
POS 4703 Scope and Methods	3
POS 4910 Senior Research Seminar	3
POS 4923 Advanced Professional Development	3
POS 4936 Seminar in Political Science	3
POT 4064 Contemporary Political Ideologies	3
PUP 4947 Public Affairs Internship	3
POS Elective Political Science Electives	6
Total	**33**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Bachelor of Science in Political Science with Concentration in Pre-Law

Pre-law is an approved minor for students in Political Science and other majors in the College of Social Sciences, Arts and Humanities.. Six (6) courses are required to be selected from the list below. A grade of "C" or better must be earned in all courses. Courses required for the major cannot be used to fulfill minor requirements.

Bachelor of Science in Political Science (Pre-Law Minor)

Freshman Year	**Sem. Hrs.**
AMH 2091 or AFA 3104 African American History	3
ENC 1101 & 1102 Communication Skills I, II	6
HUM Elective Humanities electives (HUM, ARH, REL, PHI, or PHH)	6
MGF 1106 and MGF 1107 Liberal Arts Math I, II	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr Exp-College Transit	2
Total	**30**

Sophomore Year	**Sem. Hrs.**
AMH 2010 or 2020 U.S. History	3
BSC 1005, BSC 1010c, BOT 1010, HUN 2041, PSC 1121c, AST 1002, EVY 2570, EVS 4007, ISC 1006, **or** ISC 1007	6
ECO 2013 & 2023 Principles of Economics I, II	6
LIT 2110 Literature	3
PHI 2010 Introduction to Philosophy	3
*POS 2001 Introduction to Political Science	3
*POS 2041 American National Government	3
POS 2112 State & Local Government	3
Total	**30**

Junior Year	**Sem. Hrs.**
CGS 2060c or CAP 3505 Computer Applications	3
*CPO 2002 Comparative Government	3
ENC 2300 or 3320 Improved Writing	3
GEA 2000 or GEO 3421 Geography	3
PAD 3003 Introduction to Public Administration	3
PHI 2101 Introduction to Logic	3
POS 3603 American Constitutional Law	3
Pre Law Minor	6
POS 4703 Scope & Methods	3
Total	**30**

Senior Year	
PAD 4223 Budgetary & Fiscal Management	3
Pre Law Minor	6
POS 4910 Senior Research Seminar	3
POS 4923 Advanced Professional Development	3
POS 4936 Seminar in Political Science	3
POS Elective Political Science Electives	6
POT 4064 Contemporary Political Ideologies	3
Pre Law Minor	6
Total	**33**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Courses accepted for the Pre-Law minor [select 18 hours (six courses)]:	**Sem. Hrs.**
CCJ 3024 Introduction to Criminal Justice	3
CCJ 3200 American Court System	3
PLA 4103 Legal and Scholarly Report Writing	3
POS 3603 American Constitutional Law	3
POS 3679 Mock Trial	3
POS 3684 Nature & Functions of Legal System	3
POS 3691 Contemporary Legal Problems	3
POS 3773 Introduction to Jurisprudence	3
POS 4678 Advanced Mock Trial	3
PUP 4947 Public Affairs Internship	3
POS 4696 Legal Problems of the Poor	3
POS 4694 Equal Opportunity Law	3
POS 4695 Law and the Consumer	3

Bachelor of Science in Political Science with Concentration in Urban Studies and Economic Development

Urban Studies and Economic Development is an approved minor for students in Political Science and other majors in the College of Social Sciences, Arts and Humanities. Six (6) courses are required to be selected from the list below. A grade of "C" or better must be earned in all courses. Courses required for the major cannot be used to fulfill minor requirements.

Bachelor of Science in Political Science (Urban Studies and Economic Development Minor)

Freshman Year

AMH 2010 or 2020 U.S. History	3
AMH 2091 or AFA 3104 African American History	3
ENC 1101 & 1102 Communication Skills I, II	6
HUM Elective Humanities electives (HUM, ARH, REL, PHI, **or** PHH)	6
MGF 1106 and MGF 1107 Liberal Arts Math I, II	6
POS 1921 Introduction to Professional Development	1
PSY 2012 Introduction to Psychology	3
SYG 2000 Introduction to Sociology	3
SLS 1101 First Yr Exp- College Transit	2
Total	**33**

Sophomore Year	**Sem. Hrs.**
Science: BSC 1005, BSC 1010c, BOT 1010c, HUN 2041, PSC 1121c, AST 1002, EVY 2570 EVS 4007, ISC 1006, **or** ISC 1007	6
CGS 2060c **or** CAP 3505 Computer Applications	3
ECO 2013 **&** 2023 Principles of Economics I, II	6
LIT 2110 Literature	3
PHI 2010 Introduction to Philosophy	3
*POS 2001 Introduction to Political Science	3
*POS 2041 American National Government	3
POS 2112 State **&** Local Government	3
Total	**30**

Junior Year	
*CPO 2002 Comparative Government	3
ECO 4013 Econ. Of Lesser Dev. Countries (Minor)	3
GEO 2370 or 3421 or GEA 2000 Geography	3
PAD 3003 Introduction to Public Administration	3
PAD 4223 Budgetary and Fiscal Management	3
PHI 2101 Intro to Logic	3
POS 3163 Local and Community Politics (Minor)	3
POS 3603 Constitutional Law	3
POS 4703 Scope and Methods	3
POS 4910 Senior Research Seminar	3
Total	**30**

Senior Year	
ECO 4054, GEO 4604, or PAD 4404 (Minor Elective)	3
ECP 3203, GEO 3354, or POS 4154 (Minor Elective)	3
ECP 4143 Black Economic Development (Minor)	3
ENC 2300 or 3320 Improved Writing **or** Advanced Composition	3
POS 4923 Advanced Professional Development	3
POS 4936 Seminar in Political Science	3
POS Elective Political Science Electives	6
POT 4064 Contemporary Political Ideologies	3
PUP 4947 Public Affairs Internship (Minor)	3
Total	**30**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Courses accepted for the Urban Studies & Economic Development minor:

ECO 4013 Econ. Lesser Developed Countries	3
ECP 4143 Black Economic Development	3
POS 3163 Local & Community Politics	3
PUP 4947 Public Affairs Internship	3
Elective, ECO 4054, GEO 4604, PAD 4404	3
Elective, ECP 3203, GEO 3354, POS 4154	3
Total	**18**

Division of Interdisciplinary Studies

BS/BA Interdisciplinary Studies

Program Overview

The BS/BA Interdisciplinary Studies (IS) degree offered at Florida A&M University provides a flexible program of study designed to enable students to pursue a well-rounded education that best fits their educational goals. Students seeking a broad educational focus may pursue the BS/BA Interdisciplinary Studies degree and design a program of study from select areas of emphasis to meet their individual career goals. Students pursuing the Interdisciplinary Studies undergraduate degree will be offered the opportunity to develop competencies across a variety of disciplines and combine previous academic course work that will lead to a high quality education at Florida A&M University. Because of the unique nature of this program, First-time in College (FTIC) and entering transfer students will be required to complete at least 60 credit hours at the college level prior to enrolling in the program. Students are strongly encouraged to work with advisors in the program once they have declared Interdisciplinary Studies as their major.

General Education Requirements

All students enrolled in the lower division programs of the university must complete a minimum of thirty-six (36) hours of approved general education.

Areas of Emphasis Requirements

The BS/BA Interdisciplinary Studies degree will consist of 120 credit hours. Students will select, in consultation with the advisor, least one core area of emphasis at thirty (30) hours and one minor or two core areas of emphasis at fifteen (15) hours each and one minor. The two areas of study combined must contain at least fifteen (15) upper level hours and they cannot overlap with each other or the minor. If a student chooses one core area of emphasis of 30 hours, a minimum of fifteen (15) hours at the upper level must be completed within the selected core area. Students select from nine core areas of emphasis from the following list:

- Health
- Science
- Education
- Quantitative Analysis
- Social Science
- Humanities
- Visual and Performing Arts
- Global Studies
- Communication and Design

Only grades of "C" (2.0) or better in each course are accepted in the students' selected area of emphasis in their degree plan. In addition to the area of emphasis, students are required to complete a minor as part of the IS degree.

Minor Requirements

To satisfy minor requirements, students must complete at least 18 hours in a single discipline or select from a list of pre-designated minors. In some cases, students will be required to contact the department in which they plan to seek a minor to determine the requirements. Prior to selecting a minor, students are encouraged to meet with the IS advisor.

Foreign Language Requirement

The Bachelor of Science degree does not require 12 hours of foreign language however, students must have completed the foreign language admissions requirement in high school or its equivalent in college credits in order to graduate. In contrast, students pursuing the Bachelor of Arts degree must satisfy the foreign language requirement of 12 credit hours.

Computer Literacy

The program requires students to be computer literate by taking an appropriate course or by demonstrating mastery of certain computer competencies.

Degree Completion Requirements

Students must complete a minimum of 120 credits for the Interdisciplinary Studies degree, of which forty-eight (48) hours must be at the 3000/4000 level and have a 2.0 cumulative grade point average to graduate.

Department of Military Science (Army ROTC)

Florida A&M University maintains a senior Army Reserve Officer Training Corps, one of the most demanding and successful leadership programs in the country, creating leaders who go on to rewarding careers in the military as Officers in civilian worlds. This is an elective course that provides Adaptive Soldier Leader Training and Education using experimental learning methodology, student centered and facilitated discussion with Socratic questioning and critical thinking.

Basic Military Instruction teaches leadership and discipline, management techniques, cultural awareness and problem solving skills. The basic course consists of freshman (MSI) and sophomore (MSII) level courses designed to develop basic military skills and fundamentals of leadership. In order to transition to the Advance Military Instruction as a junior (MSIII) and as a senior (MSIV), you must compete for a contract with US Army Cadet Command. Eligibility includes being a U.S. Citizen, a qualified medical examination, ages 18-27, good moral character, pass the Army Physical Fitness Test, meet the height/weight requirements, be a Full time student pursuing a bachelor's or master's degree and lastly, have a 2.7 GPA or higher and be approved by the Professor Military Science.

For students not taking military science during their freshman year, both MS I and MS II courses may be attended simultaneously as designated compression students. Upon completion, these students will qualify for the advanced course in one academic year. Students must maintain academic alignment (i.e., all ROTC MS III third year cadets should have junior class status).

Advanced Course and Cadet Summer Training (CST)

The advanced course is designed to prepare students for commissioning as Army officers. The third year course (MS III) consists of individual skills development in preparation for the Cadet Summer Training. The final year (MS IV) consists of professional leadership and management development and completes pre-commissioning preparation. All advanced course participants are eligible to receive a minimum of $450 per month stipend and are paid during CST. Successful CST completion, combined with the bachelor's degree, qualifies the student for commissioning as second lieutenants in the U. S. Army. Army Reserves, or Army National Guard.

Furnished Items

All uniforms, textbooks and equipment for the ROTC courses are furnished by the Army.

Commissions

All cadets must pass both the swimming diagnostic test and the combat water survival test prior to commissioning. Professional military education requirement for commissioning is to demonstrate classroom proficiency in military history. Students who receive commissions will serve as officers either on active duty or in the reserve or National Guard. Officers serving full-time on active duty will receive a reserve commission. All reservists receive United States reserve commissions.

Leadership Science Minor

Upon completion of the eight-semester, four-year program, a student may be awarded a minor in Military Science. The student must complete MSL 4301 and MSL 4302 with a minimum grade of "C" and maintain an overall GPA of 3.0 in Military Science. Exceptions or substitutions of courses will be recommended by the PMS and approved by the dean, College of Social Sciences, Arts and Humanities. Requests for awarding the minor in military science should be made in writing to the PMS.

Faculty

Professors: LTC Edwin H. Escobar

Associate Professors: Captain Regina Lewis, Master Sergeant Joshua Anderson, Ms. Samantha Lucas, Mr. Vernon Powell

Basic Course

Freshman Year	**Sem. Hrs.**
MSL 1001 Introduction to the Army and Critical Thinking	2
MSL 1002 Introduction to the Profession of Arms and Professional Competence	2
MSL 1001L Leadership Lab (fall semester)	0
MSL 1002L Basic Leadership Lab (spring semester)	0
Sophomore Year	
MSL 2101 Leadership and Decision Making	2
MSL 2102 A	2
MSL 1001L Leadership Lab (fall semester)	0
MSL 1002L Basic Leadership Lab (spring semester)	0

Advanced Course

Junior Year

MSL 3201 Platoon Operations	3
MSL 3202 Applied Leadership in Platoon Operations	3
MSL 3201L Leadership and Problem Solving Lab (fall semester)	1
MSL 3202L Leadership and Ethics Lab (spring semester)	1
*MSL 4400 U.S. Military History (if offered)	3

Senior Year

MSL 4301 Mission Command I and the Army Profession	3
MSL 4302 Mission Command II and the Company Grade Officer	3
MSL 4301L Leadership and Management (fall semester)	1
MSL 4302L Officership Lab (spring semester)	1

Scholarship Program

The Army ROTC Scholarship Program is designed to offer financial assistance to outstanding young men and women interested in serving as officers in the United States Army, Army Reserve or National Guard. One and a half through four-year scholarships are available. Scholarships are awarded on a competitive basis. The selection process, which begins in the fall of each year, considers the student's scholastic standing, standardize test score(s), leadership and athletics.

Scholarships offer free tuition, academic expenses, laboratory fees, textbooks and materials, and a monthly stipend (10 months of the school year). Applications for four-year scholarships must be submitted no later than the 10th of January, during the senior year of high school. Three-year scholarships are processed at the college level. For further information, contact the Professor of Military Science, Army ROTC, Howard Hall.

Course Descriptions

MSL 1001 Introduction to the Army and Critical Thinking (1) Examines the unique duties and responsibilities of officers, organization and role of the Army, reviews skills pertaining to fitness and communication, analyzes Army values and expected ethical

behavior.

MSL 1002 Introduction to the Profession of Arms and Professional Competence (2) Presents fundamental leadership concepts and doctrines, practices basic skills that underline effective problem solving, examine the officer experience.

MSL Leadership Labs (0-2) Required for all levels of ROTC. Lab provides an opportunity for practical exercise in the subjects and topics taught in ROTC classes. The goal is to develop and enhance leadership skills applicable to both the military and corporate communities.

MSL 2101 Leadership and Decision Making (2) Develops knowledge of self, builds self-confidence, and individual leadership skills, develops problem solving and critical thinking skills, applies communication, feedback, and conflict resolution skills.

MSL 2102 Army Doctrine and Team Development (2) Focuses on self-development guided by knowledge of self and group processes; challenges current beliefs, knowledge, and skills.

MSL 3201 Platoon Operations (3) Examines skills that underline effective problem solving, analyzes military missions, plans military operations, and executes squad battle drill.

MSL 3202 Leadership and Ethics (3) Probes leader responsibilities that foster an ethical command climate, develop cadet leadership competencies and apply principles and techniques of effective written and oral communication**.**

MSL 4301 Leadership and Management (3) Discuss staff organization, functions and process, analyze counseling responsibilities and methods, and apply leadership andproblem-solving principles to a complex case study.

MSL 4302 Offership (3) Capstone course ot explore topics relevant to second lieutenants entering the Army, describes legal aspets of decision making and leadership, analyzes Army organization from tactical to strategic level.

MSL 4400 US Military History (3) Examines the military heritage of the United States from colonial wars to the present; focuses on the operational and strategic level of warfare. (If offered)

MSL 4901 Directed Reading-Individual Studies (1-4) Supervised reading and independent study in the United States Military History and writing requirements. Prerequisite: Permission of the instructor.

Department of Music

Florida A&M University Department of Music offers an impressive series of programs for undergraduate study, with the perfect combination of access to a diverse university setting and specialized music training. Our curricula combine tradition with innovation and are designed to offer students the flexibility to reach a variety of professional goals.

The Department of Music also provides instruction in the preparation of choral and instrumental musicians for elementary and secondary teaching careers. It is also responsible for the musical development of the professional performing artist and contributes to the aesthetic and cultural development of students from other disciplines.

Admission Requirements

All music majors must meet the minimum institutional admissions requirements listed elsewhere in this catalog. They should have at least three years preparation on their principal applied instrument and some preparation on piano. Competence in music performance and knowledge must be demonstrated during entrance examinations given to determine placement in applied music and theory courses. Transfer credits are subject to validation by examination upon approval of the department chairperson. Details concerning audition preparation may be obtained from the department office.

You must submit a minimum 1010, SAT score (critical reading and math only) or 21 ACT score. Your high school preparation must have included earning a minimum 2.50GPA (4.0 scale) and 19 academic units in English (4), Mathematics (3), Natural Science (3), Social Science (3), Foreign Language (2), and Electives (4). There is a $30 application fee.

Application deadlines:

- May 15 for the fall term;
- November 15; spring term,
- March 15, summer term.

Contact the Office of Admissions and Recruitment for an applica-

tion, or apply online at www.famu.edu.

ALL students interested in pursuing Music Industry studies must complete and pass the Department of Music audition on a primary instrument (instrumental or voice) as a part of the admissions process.

Faculty

Professors: James, Shaylor; Sarjeant, Lindsey; Young, Sylvester
Associate Professors: Chipman, Shelby; Clemons, Kawachi; Griffin, Robert; Hall, Brian; Horn, Geoffrey; Kilgore, Alethea; Parsons, Longineu; Sobkowska, Joanna; White, Dennine
Assistant Professors: Butler, Mark; Rhodes, Marcus; Reinfeld, Scott; Sager, Rebecca; Vega, Carlos

Bachelor of Science in Music with Concentration in Jazz Studies

Freshmen Year

Fall Semester

ENC 1101	Freshman Communication Skills I	3
MGF 1106	Liberal Arts Math I	3
MUS 1010	Student Recitals	0
MUN 3713	Jazz Band	1
	OR	
MUN 1790	Latin Jazz Ensemble	
MUT 1121	Materials & Skills Music I	3
MUT 1241	Sight Singing/Ear Training	1
MVX XX1X	Principal Applied Instrument	2
MUN 1450	Duo Piano Ensemble I	1
	OR	
MVK 1111	Class Piano I (non-piano majors)	1
SLS 1101	First Year Experience	2
Total		**16**

Spring Semester

ENC 1102	Freshman Communication Skills II	3
MGF 1107	Liberal Arts Math II	3
MUS 1010	Student Recitals	0
MUN 3713	Jazz Band	1
MUT 1122	Materials & Skills Music I	3
MUT 1242	Sight Singing/Ear Training	1
MVX XX1X	Principal Applied Instrument	2
MUN 2451	Duo Piano Ensemble II	1
OR		
MVK 1112	Class Piano II (non-piano majors)	1
Approved Humanities		3
Total		**17**

Sophomore Year

Fall Semester

Social Science		3
BSC 1005	Biological Science	3
MUS 1010	Student Recitals	0
MUN 3713	Jazz Band	1
	OR	
MUN 1790	Latin Jazz Ensemble	
MVK 2121	Class Piano III (non-piano major)	1
	OR	
MUN 3453	Duo Piano Ensemble III	1
MUT 2126	Material Skills Music III	3
MUT 2246	Sight Singing/Ear Training III	1
MVX XX2X	Principal Applied Instrument	2
AMH 2091	Intro to African American History	3
OR		
AFA 3104	African American Experience	
Total		**17**

Spring Semester

Natural Science		3
MUN 3713	Jazz Band	1
OR		
MUN 1790	Latin Jazz Ensemble	
MUS 1010	Student Recitals	0
MUT 2127	Materials & Skills Music IV	3
MUT 2247	Sight Singing/Ear Training IV	1
MUT 2122	Class Piano IV (non-piano major)	1
	OR	
MUN 4454	Duo Piano Ensemble IV	1
MVX XX2X	Principal Applied Instrument	2
Elective		3
MUT 2641	Jazz Improvisation	2
Total		**16**

Junior Year

Fall Semester

Gen Ed Elective		3
MUN 3713	Jazz Band	1
	OR	
MUN 1790	Latin Jazz Ensemble	
MUS 1010	Student Recitals	0
MVx 333xx	Principal Applied Instrument	2
MUT 3129	Jazz Theory	3
MUH 3211	History of Music I	3
MUT 3353	Jazz Arranging I	3
Total		**15**

Spring Semester

MUH 3212	History of Music II	3
Elective		3
MUN 3713	Jazz Band	1
OR		
MUN 1790	Latin Jazz Ensemble	
MUS 1010	Student Recitals	0
MVx 3xxx	Principal Applied Instrument	2
MUT 4354	Jazz Arranging II	3
MUH 3116	Jazz History	3
Total		**15**

Student Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate ap-

plied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year
Fall Semester

Elective	1
MUS 1010 Student Recitals	0
MUN 3713 Jazz Band	1
OR	
MUN 1790 Latin Jazz Ensemble	2
MVx 4xxx Principal Applied Instrument	2
MUM 3701 Business of Music (required)	
General Ed Elective	3
MUT 3363 Jazz Styles & Analysis I	3
Electives	1
Total	**13**

Spring Semester

Musicianship Elective	3
Elective	3
MVx 43xx Principal Applied Instrument	2
MUT 4664 Jazz Styles & Analysis II	3
MUN 3713 Jazz Band	1
OR	
MUN 1790 Latin Jazz Ensemble	
Total	**12**
Grand total	**120**

Bachelor Science in Music with concentration in Electronic Music Composition
Freshmen Year
Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN Ensemble	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
Total	**14**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN Ensemble	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year
Fall Semester

Gen Ed Elective	3
BSC 1005 Biological Science	3
MUS 1010 Student Recitals	0
MUN Ensemble	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
AMH 2091 Intro to African American History	2
Total	**17**

Spring Semester

Natural Science	3
MUN Ensemble	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV 1	
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Elective	1
MUS 1342 MIDI Technology	3
Social Science	3
Total	**18**

Junior Year
Fall Semester

Gen Ed Elective	3
MUN Ensemble	1
MUS 1010 Student Recitals	0
MUC 1121 Music Composition I	2
MUH 3211 History of Music I	3
MUT 3611 Form & Analysis	2
MUM 3701 Business of Music	2
Electives	3
Total	16

Spring Semester

Gen Ed Elective	3
MUH 3212 History of Music II	3
MUT 3421 Counterpoint	2
MUN Ensemble	1
MUS 1010 Student Recitals	0
MUC 2221 Music Composition	2
MUH 3116 Jazz History	3
Elective	2
Total	**16**

Senior Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital pro-

gram), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN Ensemble	1
MUC 3331 Music Composition III	2
MUT 3129 Jazz Theory	3
General Ed Elective	3
MUM 3613 Basic Audio Recording	3
Total	**12**

Spring Semester

MUC 3610 Film Scoring	3
Musicianship Elective	3
MUC 4241 Music Composition IV	2
Elective	3
MUN Ensemble	1
Total	**12**
Grand total	**120**

Bachelor of Science in Music with Major in Piano or Voice

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

Elective	3
Natural Science	3
AMH 2091 Intro to African Am History	3
OR	
AFA 3104 African American Experience	3
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
Total	**17**

Spring Semester

Approved Social Science	3
Natural Science	3
Elective	1
MUN 1310 Concert Choir	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Total	**15**

Junior Year

Fall Semester

Gen Ed	3
MUN 3313 Concert Choir	1
MUS 1010 Student Recitals	0
MVx 333xx Principal Applied Instrument	2
MUN 3512 Accompanying I	1
Electives	6
MUH 3211 History of Music I	3
Total	**16**

Spring Semester

MUH 3212 History of Music II	3
MUN 3313 Concert Choir	1
MUS 1010 Student Recitals	0
MVx 3xxx Principal Applied Instrument	2
MUN 3513 Accompanying II	1
Electives	6
Total	**13**

Student Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate ap-

plied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN 33103 Concert Choir	1
MVx 4xxx Principal Applied Instrument	2
Musicianship Electives	3
Elective	1
General Ed Elective	6
Total	**13**

Spring Semester

Electives	3
MUN xxxx Ensemble	1
Elective	3
MVx 43xx Principal Applied Instrument	2
Elective	3
MUN 3310 Concert Choir	1
Total	**13**
Grand total	**120**

Bachelor Science in Music with Major in Wind, Piano or Percussion

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN 1110 Marching Band	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN 1130 Symphonic Band	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

Elective	3
Natural Science	3
MUS 1010 Student Recitals	0
MUN 1110 Marching Band	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
AMH 2091 Intro to African American History	3
OR	
AFA 3104 African American Experience	
Total	**17**

Spring Semester

Natural Science	3
Elective	3
MUN 1130 Symphonic Band	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Approved Social Science	3
Total	**17**

Junior Year

Fall Semester

Gen Ed Elective	3
MUN 3113 Marching Band	1
MUS 1010 Student Recitals	0
MVx 333xx Principal Applied Instrument	2
MUH 3211 History of Music I	3
Electives	6
Total	**15**

Spring Semester

MUH 3212 History of Music II	3
Electives	6
MUN 3133 Symphonic Band	1
MUS 1010 Student Recitals	0
MVx 3xxx Principal Applied Instrument	2
Total	**12**

Student Recital Policy

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Senior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN 3113 Marching Band	1
MVx 4xxx Principal Applied Instrument	2
General Ed Elective	3
Electives	6
Total	**12**

Spring Semester

Musicianship Elective	3
MVx 43xx Principal Applied Instrument	2
Elective	6
MUN 3133 Symphonic Band	1
Total	12
Grand total	**120**

Bachelor of Science in Music - Music Industry Major

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN Ensemble	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN Ensemble	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MUS 1010 Student Recitals	0
MUN Ensemble	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MVX XX2X Principal Applied Instrument	2
Natural Science	3
AMH 2091 Intro to African American History	3
ECO 2013 Principles of Economics I	3
Total	**17**

Spring Semester

MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUS 1010 Student Recitals	0
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MUN Ensemble	1
MVx XX2X Principal Applied Instrument	2
MUS 1342 MIDI Technology	3
ECO 2023 Principles of Economics II	3
Natural Science	3
Total	**17**

Junior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN Ensemble	1
MUH 3211 History of Music I	3
MUM 3701 Business of Music	2
MUH 3116 Jazz History	3
ACG 2021 Financial Accounting Principles	3
Total	**12**

Spring Semester

MUS 1010 Student Recitals	0
MUN Ensemble	1
Musicianship Elective	3
MUM 3613 Basic Audio & Recording Tech	3
ACG 2071 Managerial Accounting Principles	3
MUH 3212 History of Music II	3
Gen Ed Elective	3
Total	**16**

Student Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUM 3614 Audio & Recording Techniques II	3
MAN 3025 Principles of Management	3
MUS 4947 Practicum in Music Management	3
MAR 3023 Principles of Marketing	3
Elective	1

Total	**13**
Spring Semester	
MUM 3615 Audio & Recording Techniques III	3
MUS 4946 Practicum in Music Merchandising	3
BUL 4130 Legal Environment of Business	3
Elective	3
Total	**12**
Grand total	**120**

Bachelor of Arts in Music with Concentration in Jazz Studies

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN 1110 Marching Band	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN 1130 Symphonic Band	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

BSC 1005 Biological Science	3
FRE 1100 Elementary French I	3
FRE 1100L Elementary French I Lab	1
OR	
SPN 1100 Elementary Spanish I	3
SPN 1100L Elementary Spanish I Lab	1
MUS 1010 Student Recitals	0
MUN Jazz Band	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
AMH 2091 Intro to African American History	3
Total	**18**

Spring Semester

FRE 1101 Elementary French I	3
FRE 1101L Elementary French I Lab	1
OR	
SPN 1101 Elementary Spanish I	3
SPN 1101L Elementary Spanish I Lab	1
Natural Science	3
MUN Jazz Band	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Approved Social Science	3
Total	**18**

Junior Year

Fall Semester

FRE 2200 Intermediate French I	3
FRE 2200L Intermediate French I Lab	1
OR	
SPN 2200 Intermediate Spanish I	3
SPN 2200L Intermediate Spanish I Lab	1
MUN Jazz Band	1
MUS 1010 Student Recitals	0
MVx 333xx Principal Applied Instrument	2
MUH 3211 History of Music I	3
MUT 3353 Jazz Arranging I	3
Total	**13**

SpringSemester

MUH 3212 History of Music II	3
MUT 4354 Jazz Arranging II	3
MUN Jazz Band	1
MUS 1010 Student Recitals	0
MVx 3xxx Principal Applied Instrument	2
MUH 3116 Jazz History	3
MUT 2641 Jazz Improvisation	2
Total	**14**

Student Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUS 1010 Student Recitals	0

MUN	Jazz Band	1
MVx 4xxx	Principal Applied Instrument	2
MUM 3701	Business of Music (required)	2
XXXX	General Ed Elective	3
MUT 3363	Jazz Styles & Analysis I	3
Electives		
Total		**12**

Spring Semester

MUT 4664	Jazz Styles & Analysis II	3
MUT 3129	Jazz Theory	3
XXXX	Gen Ed Elective	3
MVx 43xx	Principal Applied Instrument	2
MUN	Jazz Band	1
Total		**12**
Grand total		**120**

Bachelor of Arts in Music with Concentration in Electronic Music Composition

Freshmen Year

Fall Semester

ENC 1101	Freshman Communication Skills I	3
MGF 1106	Liberal Arts Math I	3
MUS 1010	Student Recitals	0
MUN	Ensemble	1
MUT 1121	Materials & Skills Music I	3
MUT 1241	Sight Singing/Ear Training	1
MVX XX1X	Principal Applied Instrument	2
MUN 1450	Duo Piano Ensemble I	1
	OR	
MVK 1111	Class Piano I (non-piano majors)	1
Total		**14**

Spring Semester

ENC 1102	Freshman Communication Skills II	3
MGF 1107	Liberal Arts Math II	3
MUS 1010	Student Recitals	0
MUN	Ensemble	1
MUT 1122	Materials & Skills Music I	3
MUT 1242	Sight Singing/Ear Training	1
MVX XX1X	Principal Applied Instrument	2
MUN 2451	Duo Piano Ensemble II	1
	OR	
MVK 1112	Class Piano II (non-piano majors)	1
Approved Humanities		3
Total		**17**

Sophomore Year

Fall Semester

BSC 1005	Biological Science	3
FRE 1100	Elementary French I	3
FRE 1100L	Elementary French I Lab	1
	OR	
SPN 1100	Elementary Spanish I	3
SPN 1100L	Elementary Spanish I Lab	1
MUS 1010	Student Recitals	0
MUN	Ensemble	1
MVK 2121	Class Piano III (non-piano major)	1
	OR	
MUN 3453	Duo Piano Ensemble III	1
MUT 2126	Material Skills Music III	3
MUT 2246	Sight Singing/Ear Training III	1
MVX XX2X	Principal Applied Instrument	2
AMH 2091	Intro to African American History	3
Total		**18**

Spring Semester

FRE 1101	Elementary French I	3
FRE 1101L	Elementary French I Lab	1
	OR	
SPN 1101	Elementary Spanish I	3
SPN 1101L	Elementary Spanish I Lab	1
Natural Science		3
MUN	Ensemble	1
MUS 1010	Student Recitals	0
MUT 2127	Materials & Skills Music IV	3
MUT 2247	Sight Singing/Ear Training IV	1
MUT 2122	Class Piano IV (non-piano major)	1
	OR	
MUN 4454	Duo Piano Ensemble IV	1
MVX XX2X	Principal Applied Instrument	2
Approved Social Science		3
Total		**18**

Junior Year

Fall Semester

FRE 2200	Intermediate French I	3
FRE 2200L	Intermediate French I Lab	1
OR		
SPN 2200	Intermediate Spanish I	3
SPN 2200L	Intermediate Spanish I Lab	1
MUN	Ensemble	1
MUS 1010	Student Recitals	0
MUC 1121	Music Composition	2
MUH 3211	History of Music I	3
MUT 3611	Form & Analysis	2
MUM 3701	Business of Music	2
Total		**14**

Spring Semester

MUH 3212	History of Music II	3
MUT 3421	Counterpoint	2
MUN	Ensemble	1
MUS 1010	Student Recitals	0
MUC 2221	Music Composition	2
MUH 3116	Jazz History	3
MUS 1342	MIDI Technology	3
Total		**14**

Senior Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and de-

partment chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN Ensemble	1
MUC 3331 Music Composition	2
MUT 3129 Jazz Theory	3
General Ed Elective	3
MUM 3613 Basic Audio Recording	3
Total	**12**

Spring Semester

MUC 3610 Film Scoring	3
Gen Ed Elective	3
MUC 4241 Music Composition	2
Elective	4
MUN Jazz Band	1
Total	**13**
Grand total	**120**

Bachelor of Arts in Music with Major in Piano or Voice

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

Natural Science	3
FRE 1100 Elementary French I	3
FRE 1100L Elementary French I Lab	1
OR	
SPN 1100 Elementary Spanish I	3
SPN 1100L Elementary Spanish I Lab	1
MUS 1010 Student Recitals	0
MUN 1310 Concert Choir	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
AMH 2091 Intro to African-American History	3
Total	**18**

Spring Semester

FRE 1101 Elementary French I	3
FRE 1101L Elementary French I Lab	1
OR	
SPN 1101 Elementary Spanish I	3
SPN 1101L Elementary Spanish I Lab	1
Natural Science	3
Approved Social Science	3
MUN 1310 Concert Choir	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Total	**18**

Junior Year

Fall Semester

FRE 2200 Intermediate French I	3
FRE 2200L Intermediate French I Lab	1
OR	
SPN 2200 Intermediate Spanish I	3
SPN 2200L Intermediate Spanish I Lab	1
MUN 3313 Concert Choir	1
MUS 1010 Student Recitals	0
MVx 333xx Principal Applied Instrument	2
MUH 3211 History of Music I	3
MUN 3512 Accompanying	1
Electives	2
Total	**13**

Spring Semester

MUH 3xxx Music History (Gen Ed Hum)	3
Elective	3
MUN 3313 Concert Choir	1
MUS 1010 Student Recitals	0
MVx 3xxx Principal Applied Instrument	2
MUN 3513 Accompanying II	1
Electives	4
Total	**14**

Senior Recital Policy

All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music.

Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year

Fall Semester

MUS 1010 Student Recitals	0
MUN 33103 Concert Choir	1
MVx 4xxx Principal Applied Instrument	2
General Ed Elective	3
Electives	6
Total	**12**

Spring Semester

Musicianship Elective	6
Gen Ed Elective	3
MVx 43xx Principal Applied Instrument	2
MUN 3313 Concert Choir	1
Total	**12**
Grand total	**120**

Bachelor of Arts in Music with Major in Wind, Piano or Percussion

Freshmen Year

Fall Semester

ENC 1101 Freshman Communication Skills I	3
MGF 1106 Liberal Arts Math I	3
MUS 1010 Student Recitals	0
MUN 1110 Marching Band	1
MUT 1121 Materials & Skills Music I	3
MUT 1241 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 1450 Duo Piano Ensemble I	1
OR	
MVK 1111 Class Piano I (non-piano majors)	1
SLS 1101 First Year Experience	2
Total	**16**

Spring Semester

ENC 1102 Freshman Communication Skills II	3
MGF 1107 Liberal Arts Math II	3
MUS 1010 Student Recitals	0
MUN 1130 Symphonic Band	1
MUT 1122 Materials & Skills Music I	3
MUT 1242 Sight Singing/Ear Training	1
MVX XX1X Principal Applied Instrument	2
MUN 2451 Duo Piano Ensemble II	1
OR	
MVK 1112 Class Piano II (non-piano majors)	1
Approved Humanities	3
Total	**17**

Sophomore Year

Fall Semester

Natural Science	3
FRE 1100 Elementary French I	3
FRE 1100L Elementary French I Lab	1
OR	
SPN 1100 Elementary Spanish I	3
SPN 1100L Elementary Spanish I Lab	1
MUS 1010 Student Recitals	0
MUN 1110 Marching Band	1
MVK 2121 Class Piano III (non-piano major)	1
OR	
MUN 3453 Duo Piano Ensemble III	1
MUT 2126 Material Skills Music III	3
MUT 2246 Sight Singing/Ear Training III	1
MVX XX2X Principal Applied Instrument	2
AMH 2091 Intro to African American History	3
Total	**18**

Spring Semester

FRE 1101 Elementary French I	3
FRE 1101L Elementary French I Lab	1
OR	
SPN 1101 Elementary Spanish I	3
SPN 1101L Elementary Spanish I Lab	1
Natural Science	3
MUN 1130 Symphonic Band	1
MUS 1010 Student Recitals	0
MUT 2127 Materials & Skills Music IV	3
MUT 2247 Sight Singing/Ear Training IV	1
MUT 2122 Class Piano IV (non-piano major)	1
OR	
MUN 4454 Duo Piano Ensemble IV	1
MVX XX2X Principal Applied Instrument	2
Approved Social Science	3
Total	**18**

Junior Year

Fall Semester

FRE 2200 Intermediate French I	3
FRE 2200L Intermediate French I Lab	1
OR	
SPN 2200 Intermediate Spanish I	3
SPN 2200L Intermediate Spanish I Lab	1
MUN 3113 Marching Band	1
MUS 1010 Student Recitals	0
MVx 333xx Principal Applied Instrument	2
MUH 3211 History of Music I	3
Electives	2
Total	**12**

Spring Semester

MUH 3212 History of Music II	3
Elective	3
MUN 3133 Symphonic Band	1
MUS 1010 Student Recitals	0
MVx 3xxx Principal Applied Instrument	2
Electives	6

Total	**15**

Student Recital Policy
All students are required to prepare a program of at least twenty (20) minutes in length during the final semester of applied music. Based on the evaluation of the senior recital hearing (a required diagnostic evaluation of selections from the prepared recital program), the student, upon approval of the music faculty and the department chairman, will render a public performance. Advanced students may perform a public recital in the junior year. The procedure must begin with the recommendation of the appropriate applied teacher followed up by approval of the music faculty and department chair. Students must be enrolled in applied music during the semester of the senior recital hearing. The student recital must be presented at least one semester prior to student teaching.

Senior Year
Fall Semester

MUS 1010 Student Recitals	0
MUN 3113 Marching Band	1
MVx 4xxx Principal Applied Instrument	2
General Ed Elective	3
Electives	6
Total	**12**

Spring Semester

Musicianship Elective	3
Gen Ed Elective	3
MVx 43xx Principal Applied Instrument	2
Elective	3
MUN 3133 Symphonic Band	1
Total	**12**
Grand total	**120**

Requirements for a Minor in Music
Students who minor in music must complete eighteen (18) semester hours.

Course		
MUS 1010	Student Recital (3 semesters)	0
MVK 1111	Class Piano I	1
MVK 1112	Class Piano II	1
MUT 1121	Materials and Skills of Music I	3
MUT 1241	Sight-singing and Ear Training I	1
(Must be taken with MUT 1121)		
MUL 2111	Introduction to Music	3
MV_ 13__	Applied Music	2
MV_ 13__	Applied Music	2
MUN xxxx	Music Ensemble	2
(Choose two music ensembles)		
Music Electives		3
Total Hours		**18**

Requirements for a Minor in Music Industry

Students who minor in music must complete eighteen (18) semester hours.

Course		
MUM 3701	Business of Music	2
MUS 4946	Practicum Music Merchandising	3
MUS 4947	Practicum Music Management	3
MUM 3613	Basic Audio Recording Techniques	3
MUL 2111	Introduction to Music	3
MUN xxxx	Music Ensemble	1
Music Elective		3
Total Hours		**18**

Music Student Clubs and Organizations

All Clubs and Organizations, including but not limited to Campus Wide, Departmental, Academic, City/County/State, Military, Performing Arts, Cultural, Political, Religious, Recreational and Volunteer Service, must complete the mandatory certification process and attend an Anti-Hazing workshop in order to be a recognized organization at Florida A&M University.

National Association for Music Education (NAFME),
Dr. Shelby Chipman, Faculty Advisor;
The American Choral Directors Association (ACDA),
Mr. Mark Butler, Faculty Advisor;

Groove 87,
Dr. Kawachi Clemons, Faculty Advisor;
Music and Entertainment Industry Student's Association (MEISA),
Dr. Kawachi Clemons, Faculty Advisor;
Phi Mu Alpha Sinfonia,
Dr. Shaylor James, Faculty Advisor;
Sigma Alpha Iota International Music Fraternity,
Mr. Lindsey Sarjeant, Faculty Advisor

Music Organizations
Membership in music organizations is open to all students. Participation in all phases of these programs, including performance engagements and trips, is a requirement of membership. May be repeated for a maximum of 4 credit hours.

Course Descriptions

MUC 1211 Music Composition I (2) To introduce the student to basic music composition techniques by analyzing works of great composers and by actively composing.
MUC 2221 Music Composition II (2) To introduce the student to intermediate music composition techniques by analyzing works of great composers and by actively composing.
MUC 3231 Music Composition III (2) To introduce the student to Advanced music composition techniques by analyzing works of great composers and by actively composing in their styles.
MUC 3610 Film Scoring (3) Hands on experience composing music for television on motion picture film motion.
MUC 4241 Music Composition IV (2)- To introduce the student to Pre-Graduate level music composition techniques by analyzing works of great composers and by actively composing in their styles in preparation for Senior Recitals
MUE 1440 String Techniques (1) Standard orchestral string instruments; correct fingering methods; bowing and tone production;

methods and materials of teaching string instruments.
MUE 2412 Introduction to Wind and Percussion Instruments (2) Fundamental instrumental techniques for voice, piano and organ majors**.**
MUE 3210 Public School Music Non-majors (3) Pre-req: junior standing for non-music majors. Development of music potential in children, grades 1-6; care of child's voice; study of children's songs; music reading; creative rhythm.
MUE 3311 Public School Music (3) Pre-req: junior standing. Philosophical and psychological aspect of music education; music major's role in teaching and super-general music and extracurricular activities on elementary school level.
MUE 2450, 3451 Woodwind Techniques I, II (1-1) Instruments of woodwind sections in orchestra and band; principles governing embouchure, fingering, and tone production.
MUE 2460, 3461 Brass Techniques I II (1-1) Instruments of the brasswind sections in orchestra and band; principles governing embouchure, fingering, and tone production.
MUE 2470 Percussion Techniques (2) Lab with emphasis of stick control, reaching methods, tone production, care and repair of percussion instruments, mallet instruments, traps, timpani, and snare drum.
MUE 4094 Public School Music (3) Pre-req: MUE 3311. Preparation course for student teaching.

MUE 4331 Choral Techniques (1) Organization, administration, and financing of choral organizations teaching methods; study materials, and rehearsal techniques; choral literature; building enrollment and programming of literature.
MUE 4480, 4333 Instrumental Methods I and II (3,3) Pre-req: Junior standing. Organizing and financing public school bands and orchestras; preparation and programming festival concerts; band pageantry, marching techniques, instrument testing; rehearsal techniques; group instruction methods, materials.
MUG 3201 Choral Conducting (3) Experience in conducting choral groups, score reading; study of attack, release, dynamics, intonation, and interpretation of problems.
MUG 4104, 4102 Conducting I, II (2,2) Pre-req: Junior standing. Techniques of conducting critical examination of scores with reference to rehearsal and interpretation of problems. Concurrent enrollment in Symphonic Band required.
MUH 2051 World Music (3) - This class is designed to introduce the student to music of many cultures all over the world. It will help the student to gain knowledge and sensitivity to musical cultures and traditions. The student will be introduced to world music instruments and different concepts of how music and culture interact and are reflective of each other.
MUH 3053 Minority Music in North America (3 hours) A study of diverse music of North American Minority Groups with emphasis on Native American, African-American, Latin-American, Asian, Jewish and certain Euro-American traditions.
MUH 3116 Jazz History (3) Historical survey of origin and development of jazz from 19th century to present. Open to all students.
MUH 3211 ,3212 History of Music I, II (2, 2) General historical survey of innovations in music development. Explores the Antiquity through Baroque, Classical, Romantic and Contemporary music periods.
MUH 3561 Afro-American Music (3) Chronological survey of origins, traditions, practices, and development of black music. Open to all students.
MUH 4930 Special Topics/Seminar - Hip Hop (3 hours) - Examines the cultural phenomenon through its development, history, communication style, dance form, music, and artistic process. Throughout the course students will explore the dynamics of race, gender, youth, and class. The course will employ various sources for analysis and information including: videos, commercials, movies, songs and other multimedia sources.
MUL 2111, 2112 Introduction to Music (3, 3) Non-music majors; introduction to music history and literature.
MUM 3613 Basic Audio & Recording Techniques (3 hours) – Provides an introduction to techniques, practices and procedures in making analog and digital recordings. Students will gain experience with acoustical balancing, editing and over-dubbing in a variety of sound situations.
MUM 3614 Audio & Recording Techniques II (3 hours) – Explores advanced multi-track recording skills and audio production techniques. This course presents recording concepts and historical milestones, signal flow theory, analog and digital basics, studio protocol and infrastructure and critical music technology nomenclature.
MUM 3615 Audio & Recording Techniques III (3 hours) – This third course in the audio recording sequence presents advanced techniques used in working with Digidesign Pro Tools hardware and software. Professional recording, editing and mix-down techniques will be explored.
MUM 3701 Business of Music (3) Introduction to the practical nature of Business of Music while being exposed to the varying aspects of the current music industry.
MUN 1110 and 3113 Marching Band (1) - Admission by audition. Performs for university and professional football games, parades, national television, and other activities requiring a marching band of excellence. Opportunities offered in films and recordings by the band.
MUN 1130 and 3133 Symphonic Band (1) - Admission by audition. Performs an annual concert series of traditional and contemporary literature at university programs, at community programs, and on tour.
MUN 1710 and 3713 Jazz Lab Band (1) - Admission by audition. Performs an annual concert series and participates in festivals and on tours. Opportunities for original composition, arranging and improvisation.
MUN 1790 Latin Jazz Ensemble (1) – An ensemble to provide creative professional-level experience in the Salsa-Latin Jazz Idiom.
MUN 1310 and 3313 Concert Choir (1) - A chorus of mixed voices. Prepares concerts and selections for university programs and for presentation on tour. Choir meets five (5) days a week.
MUN 1391 Gospel Choir (1) - a chorus of mixed voices organized to foster the development of musical skills through the performance of gospel music. The group is performance-oriented and regularly presents concerts. Membership is open to all students. Choir meets two (2) days a week.
MUN 1440 and 3443 Percussion Ensemble (1) - a select performing organization, open by audition to outstanding percussionists. Presents concerts on and off campus.
MUN 1450 Duo Piano Ensemble I (1) – The study and performance of duo-piano and piano duet literature
MUN 2022 Laptop and Electronic Arts Ensemble (1) – Explores new combinations of live electronics with acoustic instru-

ments and other media by performing a diverse repertoire of music and new works.

MUN 2420 Clarinet Choir (1) - A select performing organization open by audition to outstanding clarinet players (Majors or non-majors). They perform regularly for campus concerts, banquets and clinics.

MUN 2421 Flute Choir (1) - a select performing organization open by audition to outstanding flute players. They perform regularly for campus concerts, banquets and clinics. Required of all flute majors. Open to flutists.

MUN 2430 Trumpet Choir (1) - a select performing organization open by audition to outstanding trumpet players (Major-non-majors). They perform regularly for concerts, on and off campus, banquets and clinics.

MUN 2451 Duo Piano Ensemble II (1) - The study and performance of duo-piano and piano duet literature. A continuation of MUN 1450

MUN 3433 Brass Ensemble - a select performing organization, open by audition to brasswind players. Presents concert off and on campus.

MUN 3453 Duo Piano Ensemble III (1) - The study and performance of duo-piano and piano duet literature. A continuation of MUN 2451

MUN 3512, 3513 Accompanying I, II (1) Practical problems of

piano accompanist; development of sight reading, transposition skills; experience as accompanist for vocal, instrumental soloists. May be repeated for maximum credit of 2 hours.

MUN 4454 Duo Piano Ensemble IV (1) - The study and performance of duo-piano and piano duet literature. A continuation of MUN 3453

MUS 1010 Student Recitals (0) Weekly 50-minute performance lab course.

MUS 1342 MIDI Technology (3 hours) – This course serves as an introduction to music sequencing and recording. Protools will be introduced in this course as well.

MUS 3620 Acoustics and Electronics in Music (3 hours). This courses covers the theory and analysis of music acoustics and electronic concepts.

MUS 4905 Directed Individual Study (1-3) Pre-req: Junior standing. Designed for advanced students with sufficient interest and skills to formally engage in independent study in music under appropriate supervision. Permission of the instructor and the department chairman is required.

MUS 4946– Practicum in Music Merchandising (3 Hours) - This courses covers practical application of merchandising concepts in the music and entertainment industry.

MUS 4947– Practicum in Music Management (3 hours) – Course designed to offer students a practical exploration of the world of music management from the artist management perspective.

MUT 1121 Materials and Skills of Music I (3) Tonal melody composition and analysis; principles of two and three voice textures; introduction of four voice choral techniques. Concurrent aural skills of development in sight singing, choral transcription.

MUT 1122 Materials and Skills of Music II (3) Pre-req: MUT 1121. Diatonic traids, seventh chords, secondary, dominant, and diminished seventh chords in four voice textures; basic principles of tonal harmonic progression. Concurrent aural skills development in sight singing, transcription.

MUT 1241 Sight-Singing & Ear Training I (1)– Provide instruction and practice in reading and singing melodies at sight; to provide instruction and practice in notating performed melodic, rhythmic, and harmonic passages. Must be taken with 1121

MUT 1242 Sight-Singing & Ear-Training II (1)– (Continuation of MUT 1241) Provide instruction and practice in reading and singing melodies at sight; to provide instruction and practice in notating performed melodic, rhythmic, and harmonic passages. Must be taken with 1122

MUT 2126 Materials and Skills of Music III (3) **Pre-req: MUT 1122. Advanced tonal harmony progressions;** melodic harmonization techniques; polyphonic texture composition, analysis; diatonic modulation techniques. Concurrent aural skills development in sight singing, transcription.

MUT 2127 Material and Skills of Music IV (3) **Pre-req:** MUT 2126. Chromatic chord structures, modulation techniques in tonal harmony; advanced analysis techniques in standard genres; introduction to percussionist style elements and techniques. Concurrent aural skills development in sight singing , transcription.

MUT 2246 Sight-Singing & Ear-Training III (1)- (Continuation of MUT 1241, MUT 1242) Provide instruction and practice in reading and singing melodies at sight; to provide instruction and practice in notating performed melodic, rhythmic, and harmonic passages. Must be taken with 2126

MUT 2247 Sight-Singing & Ear-Training IV (1)- (Continuation of MUT 1241, MUT 1242, MUT 2246) Provide instruction and practice in reading and singing melodies at sight; to provide instruction and practice in notating performed melodic, rhythmic, and harmonic passages. Must be taken with 2127

MUT 2641 Jazz Improvisation (2) Basic techniques of improvisation in the jazz style, utilizing chord to chord scale relationship. Open to all student through audition.

MUT 3129 Jazz Theory (3) Basic principles of jazz from a harmonic rhythmic improvisation, and formal perspective. Students will learn by playing their instruments as well as the traditional classroom method.

MUT 3311 Principles of Scoring (2) Introduction of fundamental scoring and arranging techniques for marching and symphonic and score analysis techniques.

MUT 3353 Jazz Arranging I (3) This course is designed for practical application of scoring techniques as it relates to small and large ensembles.

MUT 3361 Jazz Fundamentals (3) Basic techniques and principles of all theoretical applications of jazz, including rehearsal and adjudication fundamentals.

MUT 3421 Counterpoint (2) An intensive study of the contrapuntal practice of the 18th Century; Development of Skills in perceiving and writing music in the style of the period through the use of aural and visual analysis

MUT 3611 Form and Analysis (2) – Analysis and study of musical form in the 20th Century

MUT 3663,4664 Jazz Styles and Analysis I, II (2,2) Analytical study of jazz music in terms of form, design and texture.

MUT 4354 Jazz Arranging II (3) Jazz Arranging is designed for practical application of scoring techniques as it relates to small and large ensembles.

MUT 4744 Jazz Pedagogy (3) A course designed to teach rehearsal techniques and classroom approaches in improvisation, ensemble playing and jazz literature. Emphasis will be placed on jazz education and adjudicating techniques for large and small orga-

nizations.

MVB 1011, 1012, 1013, 1014, 1015 Applied Brass (2) For Instrumentalists below expected entering level of accomplishment. Basic principles and techniques of instrumental performance. May be repeated for maximum credit of 4 hours.

MVB 2321, 2322, 2323, 2324, 2325 Applied Brass (2) Continued study of all scales and arpeggios; advanced articulation, phrasing; analysis of representative literature. May be repeated for maximum credit of 4 hours.

MVB 3331, 3332, 3333, 3334, 3335 Applied Brass (2) Establishment of repertoire, extensive literature, etudes.

MVB 4333, 4341, 4342, 4344, 4345 Applied Brass (2) Preparation for senior recital performance.

MVK 1011 Applied Piano (2) For entering piano majors with limited background and weak technique. Development of finger independence and dexterity; basic performance techniques. May be repeated for maximum credit of 4 hours.

MVK 1111 Class Piano I (1) Practical piano performance techniques; scales and cadences; simple compositions; development of piano techniques, sight reading skills, and musicianship. May be repeated for maximum credit of 2 hours.

MVK 1130 Jazz Piano (3) An intensive course designed to learn the basic skills of jazz piano playing and pedagogical concepts.

MVK 1311 Applied Piano (2) Piano technique development through selected studies: Bach two and three part inventions, Mozart and Haydn sonatas, works form Romantic and Contemporary periods. May be repeated for maximum credit of 4 hours.

MVK 2121 Class Piano II (1) Continued development of practical performance techniques; scales and cadences; medium difficulty composition; patriotic songs; hymns and chorales; development of piano techniques, sight reading skills, and musicianship. May be repeated for maximum credit of 2 hours.

MVK 2321 Applied Piano (2) Continued piano technique development; scales dominant and diminished seventh chord arpeggios, rhythmic and octave techniques, works by Bach, Beethoven, and from Romantic and Contemporary period composers. May be repeated for maximum credit of 4 hours.

MVK 3331 Applied Piano (2) Study of masterworks from Baroque, Classical, Romantic and Contemporary periods; attainment of advanced technical facility. May be repeated for maximum credit of 4 hours.

MVK 4341 Applied Piano (2) General performance problems in preparation for required senior recital. Performance of Senior Recital Hearing.

MVP 1011 Applied Percussion (2) For instrumentalists below expected entering level of accomplishment. Basic principles and techniques of instrumental performance. May be repeated for maximum credit of 4 hours.

MVP 1311 Applied Percussion (2) Study of performance techniques on the snare drum and marimba. Major, minor chromatic scales; all arpeggios; principles of tone production; articulation and phrasing in selected etudes and solos. May be repeated for maximum credit of 4 hours.

MVP 2321 Applied Percussion (2) Continued study of all scales and arpeggios; advanced articulation, phrasing ; analysis of representative literature. May be repeated for maximum credit of 4 hours.

MVP 33331 Applied Percussion (2) The study of the timpani. Studies ranging from simple two drum technique to advanced four drum technique. May be repeated for maximum credit of four (4) hours.

MVP 4341 Applied Percussion (2) Study of advanced materials and literature, and preparation for senior recital. May be repeated for maximum credit of four (4) hours.

MVS 1116 Class Guitar (1) Elective for all students. Basic guitar performance techniques. May be repeated for maximum credit of 4 hour**s.**

MVS 1311, 2321, 3331, 4341 Principal Applied Violin I-IV (2)- To expose students to performing works appropriate to advancement of performance skills both in solo and ensemble settings.

MVS 1312, 2322, 3332, 4342 Principal Applied Viola I-IV (2) - To expose students to performing works appropriate to advancement of performance skills both in solo and ensemble settings.

MVS 1313, 2323, 3333, 4343 Principal Applied Cello I-IV (2) - To expose students to performing works appropriate to advancement of performance skills both in solo and ensemble settings

MVS 1314, 2324, 3334, 4344 Principal Applied Double Bass I-IV (2)- To expose students to performing works appropriate to advancement of performance skills both in solo and ensemble settings.

MVS 1316, 2326, 3336, 4346 Principal Applied Guitar I-IV (2)- To expose students to performing works appropriate to advance ment of performance skills both in solo and ensemble settings.

MVS 1317, 2327, Principal Applied Bass Guitar I-II –(2) To expose students to performing works appropriate to advancement of performance skills both in solo and ensemble settings

MVV 1011 Applied Voice (2) For entering non-majors with limited knowledge of the fundamentals of voice production, posture and breathing. Registration for this course requires approval from the department chairman.

MVV 1311, 2321, 3331 and 4341 Applied Voice (2)Understanding the vocal process through a systematic approach to vocal instruction that focuses on the development of a functionally efficient vocal tone through positive attitude, posture, breathing, tone and balanced resonance.

MVV 2111 Fundamentals of Voice (1) For non-vocal majors: instruction of elementary vocal techniques, methods and procedures for choral and solo singing. Uses class approach.

MVW 1311, 1312, 1314, 1315 Applied Woodwind (2) Major, minor, chromatic scales, all arpeggios; principles of tone production; articulation and phrasing in selected etudes and solos. May be repeated for maximum credit of 4 hours.

MVW 2321, 2322, 2323, 2324, 2325 Applied Woodwind (2) Continued study of all scales and arpeggios; advanced articulation, phrasing; analysis of representative literature. May be represented for maximum credit of 4 hours.

MVW 3331, 3332, 3333, 3334, 3335 Applied Woodwinds (2) Establishment of Repertoire, extensive literature, etudes.

MVW 4341, 4342, 4343, 4344, 4345 Applied Woodwinds (2) Preparation for senior recital program.

Department of Psychology
Undergraduate

The Department of Psychology offers course work leading to the baccalaureate, master's and educational specialist degrees in psychology with a Black psychology and multicultural emphasis. At the undergraduate level, the department offers the bachelor of arts degree and the bachelor of science degree. While both degrees provide the student with a broad liberal arts background, the bachelor

of arts requires the fulfilling of foreign language requirements, i.e., French or Spanish, for twelve (12) semester hours. Both degrees enable students to pursue advanced degrees.

Major requirements in Psychology – Prior to declaring a major in psychology, students must satisfactorily complete the following prerequisites with a minimum grade of C: PSY 2012, either DEP 2004 or EDP 2002, MAC1105, and any level BSC course. Students must earn at least a 2.00 GPA ("C") in each course completed in psychology and have at least a 2.00 GPA overall to qualify for graduation. Required courses consist of SOP 3782, PSY 3204, PSY 3213, CLP 4142, EXP 3704C, and PSY 4604. Twelve hours of elective courses in psychology are required from at least 2 of 3 course clusters (Applied, Social/Personality/Black, Biological, or Graduate School Preparation/Honors).

Psychology majors must be advised every semester. Students must bring their completed Progression towards Graduation form and most recent unofficial transcript to each advisement session. Psychology majors must register for the Blackboard Course (famu.

blackboard.com), "Psychology Advisement "(PSYADV001). From this site they can obtain information regarding the necessary forms, information regarding majors meetings, graduate school, and internships in psychology.

Minor requirements in Psychology
PSY 2012 is a prerequisite to a minor in psychology. Coursework consists of a minimum of eighteen (18) additional semester hours, inclusive of SOP 3782.

Faculty
Professor Emeritus: Perry, Aubrey M.
Professors:
Bogan, Yolanda; Jackson-Lowman, Huberta,
Associate Professors: Aroyewun, Oladipo; Bell, Yvonne R.; Brown, Raeford; Burney, DeAnna; Hamilton, Seward E.; Robertson, Jermaine; Robinson, Jackie; Singleton, Gwendolyn
Assistant Professors: Golden, Amber, Li, Huijun; Sims, Brian

Bachelor of Arts Psychology

Freshman Year
Fall Semester

ENC 1101Freshman Communication Skills I	3
MAC 1105 Algebra	3
FRE or SPN 1120 French or Spanish Lecture and Lab	4
BSC any level	4
Total	**14**

Spring Semester

ENC 1102 Freshman Communication Skills I	3
STA 2023 Probability and Statisticsb	3
FRE or SPN 1121 French or Spanish Lecture and Lab	4
PSY 2012 Introduction to Psychologya	3
General Elective	3
Total	**16**

Sophomore Year
Fall Semester

DEP 2004 Development or EDP 2002 Ed. Psycha	3
ENC 2300 or 3243 or 3320c	3
FRE or SPN 2120 French or Spanish Lecture and Lab	4
AMH 2091 Introduction to African American History or AFA 3104 African American	3
Humanities	3
Total	**16**

Spring Semester

CGS 1160 Introduction to Microcomputer Applications	3
SOP 3782 Black Psychology	3
Humanities Elective	3
Social Science Elective	3
Natural Science Elective	4
Total	**16**

Junior Year
Fall Semester

PSY 3213 Research Design & Methods	3
PSY 3204 Psychological Statisticsb	3
General Elective	3
General Elective	3
Minor	3
Total	**15**

Spring Semester

EXP 3704 Experimental Psychology	4
Psychology Elective	3
Minor	3
Minor	3
General Elective	3
Total	**16**

Senior Year
Fall Semester

CLP 4142 Abnormal Psychology	3
Psychology Elective	3
General Elective	3
Minor	3
Minor	3
Total	**15**

Spring Semester

PSY 4604 History and Systems of Psychology	3
Psychology Elective	3
Psychology Elective	3
Minor	3
General Elective	3
Total	**15**

a Must pass these classes with a "C" or better prior to declaring a major in psychology.
b STAT 2023 is a prerequisite to PSY 3204
c ENC 2300 or 3243 or 3320 is a prerequisite to EXP 3704

Bachelor of Science Psychology

Freshman Year

Fall Semester	
ENC 1101 Freshman Communication Skills I	3
MAC 1105 Algebraa	3
BSC any levela	4
*Humanities	3
General Elective	3
Total	**16**

Spring Semester	
ENC 1102 Freshman Communication Skills II	3
STA 2023 Probability and Statisticsb	3
PSY 2012 Introduction to Psychologya	3
General Elective	3
CGS 1160 Introduction to Microcomputer Applications	3
Total **15**	

Sophomore

Fall Semester	
DEP 2004 Development or EDP 2002 Ed. Psycha	3
ENC 2300 or 3243 or 3320c	3
Humanities Elective	3
AMH 2091 Introduction to African-American History **or** AFA 3104 African-American Experience	3
General Elective	3
Total	**15**

Spring Semester	
SOP 3782 Black Psychology	3
General Elective	3
General Elective	3
Social Science Elective	3
Natural Science Elective	4
Total	**16**

Junior Year

Fall Semester	
PSY 3213 Research Design & Methods	3
PSY 3204 Psychological Statisticsb	3
General Elective	3
General Elective	3
Minor	3
Total	**15**

Spring Semester	
EXP 3704 Experimental Psychologyc	4
CLP 4142 Abnormal Psychology	3
Minor	3
Minor	3
General Elective	3
Total	**16**

Senior Year

Fall Semester	
PSY 4604 History and Systems of Psychology	3
Psychology Elective	3
General Elective	3
General Elective	3
Minor	3
Total	**16**

Spring Semester	
Psychology Elective	3
Psychology Elective	3
Minor	3
General Elective	3
General Elective	3
Total	**15**

a Must pass these classes with a "C" or better prior to declaring a major in psychology.

b STAT 2023 is a prerequisite to PSY 3204

c ENC 2300 or 3243 or 3320 is a prerequisite to EXP 3704

Course Descriptions

CLP 4142 Abnormal Psychology (3) Presentations of psychological models and interdisciplinary approaches to understanding, assessing and intervening in maladaptive behavior such as functional disorders which include transient reactions, neuroses, and psychoses; disorders associated with brain pathology; character disorders and psychophysiological disorders (Lecture and discussion).

CLP 4303 Introduction to Clinical Psychology (3) Presentation of the history and development of clinical psychology; the past and present functions and techniques of clinical psychology with emphasis on psychological assessment and varying systems of psychotherapy (Lecture and discussion).

CYP 3003 Community Psychology (3) Brief survey of history of community psychology movement, variety of social, scientific and political issues surrounding its development and role of social structure, interpersonal and person-systems interactions in multicultural American society. Current foci and future directions will also be explored (Lecture and discussion).

DEP 2004 Human Growth and Development (3) Changes in human behavior from conception to death. Also called lifespan psychology, this course examines the social, cognitive, linguistic and biophysical alternations experienced by human beings across the life cycle. Theoretical and empirical issues emanating from areas such as mate selection, child socialization, family dynamics, parenting and aging are discussed.

EAB 3702 Applied Behavior Analysis (3) Introduction to principles of behavior; application of systematic knowledge and laboratory know-how to analysis and interpretation of individual human conduct in clinic, classroom and everyday behavior (Lecture, Discussion and Demonstrations).

EAB 4734 Behavioral Medicine (Health Psychology) (3) **(Prerequisite** – PPE3003) This course is designed as a survey of the topics in health psychology, behavioral medicine, and behavioral health. Health psychology is the scientific study of behavior that is related to health enhancement, disease prevention, and rehabilitation. Behavioral health includes a wide variety of research and interventions that explore ways to keep healthy people from getting sick. The course will focus on the role of behavioral factors

in health and wellness and how behavioral factors can be used in prevention and rehabilitation. Stress and life style factors, such as diet, exercise, alcohol, and drugs in health and wellness will also be examined.

EDP 2002 Educational Psychology (3) An introduction to the philosophical underpinnings and theoretical framework of psychology as it relates to the educational process. The implications of psychological theories, concepts, and principles are discussed in relation to the teaching- learning process in the multicultural school system (Lecture and discussion).

EXP 3413 Theories of Learning (3) Examination is made of the essential features of the major theories of learning. Emphasis is placed upon a critical analysis and practical applicability of these theories (Lecture and discussion).

EXP 3704C Experimental Psychology (4) (Prerequisites – PSY3204 and ENC 2300 or 3243 or 3320) Experimental procedures in various areas of psychology. Emphasis on research design, execution, analysis, and interpretation of experiments of original nature. APA-style is emphasized. Laboratory research is included (Lecture, lab, discussion and demonstrations).

INP 2002 Industrial Psychology (3) Survey of the applications of psychological principles in work-place settings. Emphasis is on application of research and theory to understanding of human behavior on the job (Lecture and discussion).

PPE 3003 Personality Psychology (3) Focuses on survey of basic concepts and principles in development of personality theories related to the various schools taught in personality psychology. Role of race and culture in personality psychology will be emphasized (Lecture and discussion).

PSB 3003C Psychobiology (4) Theories, data, and techniques oriented toward investigation of the way in which processes in the central nervous system are related to behavioral states. Laboratory research is included (Lecture, lab, discussion and demonstrations).

PSY 2012 Introduction to Psychology (3) Psychology as a science with emphasis on such behavioral phenomena as learning, motivation, sensation, perception, cognition, personality, personality adjustment, and assessment techniques. (Lecture, discussion and demonstrations)

PSY 3204 Psychological Statistics (3) (Prerequisite STA2023) Measures of central tendency, dispersion, standard scores, correlation, confidence intervals, and hypothesis testing (Lecture and discussion).

PSY 3209 Advanced Psychological Statistics (3) This is a second course in statistics that will cover univariate, bivariate, and multivariate inferential statistics. It will include both the theoretical basis and applications of statistical techniques in psychology. The specific parametric and non-parametric statistical procedures will be covered in this course.

PSY 3213 Research Design & Methods (3) Focuses on conceptual frameworks in research design. Emphasis on exposition of scientific problems and articulation of protocol for addressing research problems using scientific strategies.

PSY 3923 Current Topics (3) Focuses on contemporary or emerging topics in psychology. Topics vary; however, the course may be taken only once.

PSY 4303 Psychological Measurement (3) Techniques of standardization, administration, and evaluation of mental tests; representative examples of various types of measures of aptitude, achievement, interest, and personality. Emphasis on application to multicultural populations (Lecture and discussion).

PSY 4604 History and Systems (3) Historical approach to presenting the development of psychology as a science, along with its defunct and contemporary systems (Lecture & Discussion).

PSY 4906 Directed Individual Study (3-6) (Prerequisite: senior standing) Undergraduate senior student with advisor's recommendation pursues research or a special project under faculty-supervision.

SOP 3003 Social Psychology (3) Social factors in individual and group behavior with special emphasis on person perception, interpersonal attraction, aggression, attitudes, and the effects of socio-environmental factors on human behavior (Lecture and discussion).

SOP 3724 Psychology of Prejudice and Racism (3) Focuses on an in-depth analysis of the psychological, social, and cultural factors in the antagonism, hostility, and violence that characterize relationships between different racial-ethnic groups in American society (Lecture and discussion).

SOP 3782 Black Psychology (3) In-depth analysis of theory, research, practice and thought characterizing the growth and development of black psychology. Emphasis is placed on the Afrocentric philosophical model in black psychology (Lecture and discussion).

SOP 4742 Psychology of Women (3) Psychological impact of changing sex roles in our society with emphasis on the interlocking but contradictory stereotypes applied to the black woman both from within her sub-culture and from the white-dominated society at large.

Graduate Programs in Psychology

The graduate programs in psychology stress a training objective which places academic emphasis on trainees acquiring appropriate multicultural psychological skills designed to prepare them for professional employment or doctoral level training. Within this context, the programs incorporate an emphasis on Black psychology and minority mental health. Thus, the program is structured to incorporate within the framework of training, i.e., content courses as well as experiential exposure, a multicultural orientation to psychology.

Eligibility for admission to the graduate programs in psychology is based on the admission standards of the State University System. This consists of a minimum GPA of 3.00 (on a 4.00 system) over the last 60 semester hours of undergraduate study or a minimum combined score of 1,000 on the aptitude sections of the Graduate Records Examination. Along with the application, official transcripts and standardized test scores, applicants must have three letters of recommendation submitted on their behalf. The psychology department's admission committee reviews and evaluates all applications in terms of their satisfying the admissions criteria. All meeting the criteria are recommended for admission to the department chairperson; however, only 15 new entrants per program are accepted each academic year.

Community Psychology
Master of Science

The graduate programs in community psychology provide students with academic, research and multicultural skills designed to

prepare them for professional employment or doctoral level training. Within this context, the program incorporates an emphasis on Black psychology and mental health of populations of African descent and persons of color. Content courses and experiential exposures are provided to implement this multicultural orientation.

Students enrolled in the Community Psychology Track are required to complete a minimum of 46 semester hours, including 34 hours of course work, an internship (one semester) and a research thesis, in order to fulfill graduation requirements.

Course Descriptions
Following is a listing of course descriptions in the community psychology curriculum.

Community Psychology Required Courses
Research and Measurement:
Six (6) Semester Credit Hours from the following:

	Semester Hours
PSY 6206 Psychological Statistics, Measurement and Evaluation	3
PSY 6216 Research Methods	3
PSY 6064 Professional Seminar in Advanced General Psychology	3
PPE 6055 Seminar Theories of Personality	3
SPS 6191 Psychoeducational Assessment I	3
CLP 6166 Psychopathology	3
SPS 6206 Intervention Techniques	3
CLP 6445 Individual Personality Testing	3
CYP 6936 Seminar in Community Psychology	3
CYP 6938 Advanced Seminar in Black Psychology	3
SPS 6931 Ethics and Law for Psychology	3

Electives
EAB 6766 Advanced Applied Behavior Analysis
DEP 6105 Advanced Child Development
Culminating Courses:
CYP 6948 Internship in Community Psychology
PSY 6971 Thesis

Graduate Course Descriptions

CLP 6166 Psychopathology (3) Describes the major clinical syndromes from a multidimensional approach with emphasis on a social learning approach. Presents a critical examination of DSM III and its implications for classifying psychopathology, particularly in multicultural/minority populations. (Lecture)
CLP 6445 Individual Personality Testing (4) Provides experience and knowledge of personality assessment. Includes theory, administration, scoring, and the interpretation of projective techniques with a consideration of multicultural issues. Report writing is also emphasized. (Lecture, clinical laboratory demonstration)
CYP 6936 Seminar in Community Psychology (3) This seminar focuses on the application of clinical and psychological principles and procedures to multicultural community structures and settings. Social intervention and prevention models and consultation, evaluation, and social action research strategies will be emphasized, particularly as they relate to the mental health of African-American communities. (Lecture, field experience)
CYP 6938 Advanced Seminar in Black Psychology (3) In-depth study of theories and research concerning the nature of the black social reality in modern American society, as well as the nature and dynamics of black personality and black mental health. Emphasis will be given to theory and research that have grown out of recent black psychological literature. (Lecture)
CYP 6948 Internship in Community Psychology (6-12) Prereq: Supervised practical experience in agencies and institutional settings with a multicultural focus. (Field experience)
DEP 6047 Development of Ethnic and Racially Diverse Children (3) Examines the social cultural, and historical context of ethnically and racially diverse children in America and implications for their development.
DEP 6105 Advanced Child Development (3) Traditional and multicultural theories of child psychological development and related research will be treated, as well as current issues and developments in the field. (Lecture)
EAB 6766 Advanced Behavior Modification (3) Specific behavior change programs directed toward school and community. Emphasis on community control of behavior and change of the community as a means of behavior change. Multicultural issues and application will also be considered. (Lecture, classroom and laboratory demonstration)
PPE 6055 Theories of Personality (3) Acquaints students with traditional and multicultural theories of personality and their utility in understanding and explaining human behavior and mental health issues in contemporary American society. (Lecture)
PSY 6064 Proseminar in Advanced General Psychology (3) Intensive focus on three major substantive areas of psychology: History and Systems, Learning and Cognition, and Perception and Sensation. Emphasis on multicultural contributions and models, contemporary issues and research. (Lecture)
PSY 6206 Advanced Psychological Statistics, Measurement and Evaluation (3) Survey of descriptive and inferential statistics, methods for measuring and evaluating change in educational and community institutional programs, and cross-cultural issues in measurement and evaluation of behavior. Some usage of SPSS software analysis. (Lecture and computer laboratory)
PSY 6216 Research Methods (3) Treatment of the fundamentals of behavioral research and cross-cultural applications. Stress is placed on cultural values and conceptual framework in research, research problems, design of research and statistical analysis and the relationship between them. Emphasizes scientific approach to solution of problems in psychology and education. APA style writing emphasized. (Lecture, classroom and laboratory demonstrations, field experience)
PSY 6971 Thesis II (V) Independent psychological research under the direction of a graduate faculty member, resulting in a completed thesis.
SPS 6191 Psychoeducational Assessment I (3) Training in administration, scoring and interpretation of psychometric scales including cognitive assessment; batteries are provided.
SPS 6192 Psychoeducational Assessment II (3) Training in administration, scoring and interpretation of standardized measures designed to assess student achievement, adaptive functioning, and social behaviors.
SPS 6206 Intervention Techniques (3) Application of various intervention strategies to multicultural populations. Emphasis is placed on mental health and psychoeducational counseling, short and long- term intervention strategies, and multicultural models of

prevention. (Lecture, classroom demonstrations, field experience)
SPS 6704 Intervention Techniques II (3) Course addresses prevention and early intervention and the need to integrate intervention and remediation services in education delivery systems.
SPS 6931 Ethics and Law for Psychology (3) Ethical codes and professional standards are addressed. Provides an in-depth study of disability laws and rights of students and parents within community settings.

Department of Social Work

Bachelor of Social Work

Florida A&M University offers a professional program leading to the Bachelor of Social Work (BSW) in the Department of Social Work. The Bachelor of Social Work Program is accredited by the Council on Social Work Education and prepares students for generalist social work practice. The professional curriculum consists of sixty (60) credit hours including twelve (12) hours of field placement. Certain courses in the curriculum are open to non-majors and offer exposure to current issues in service delivery. Program graduates may be eligible for advanced standing in many schools offering the Master of Social Work (MSW) Degree.

Admissions
Following are the admission procedures for first-time-in-college and transfer students wishing to enter the Department of Social Work:
Freshmen- First-time-in-college freshmen students applying for admissions to the University and wishing to major in social work should simply indicate social work as their chosen major. An academic advisor will be assigned to students in order to guide them through the appropriate liberal arts courses and to prepare them for the upper division and full admittance to the BSW program. Students should meet with their advisors a minimum of once per semester to register for the following semester.

At this point, students should call or email their advisor to set up a time to complete a course evaluation form. Note: Students transferring to FAMU with an AA degree from a Florida state college, community college or university, will not be required to meet any additional liberal arts requirements shown below. They will complete only the 60 hours of upper division social work courses.

Students who do not hold an AA degree are required to complete the general liberal arts curriculum and social work prerequisites prior to beginning the junior level social work courses. The following describes the social work courses and the required liberal arts prerequisites for the undergraduate social work foundation courses.

Program Administration
Chairperson: Jenny Jones, PhD
Program Director: Glenn Hodges, MSW, M.Div.
Field Coordinator: Dr. Winnifred Whittaker

Curriculum
The social work curriculum does not formally begin until the student's junior year because it is considered an upper-division professional program. However, students need to begin taking the required general education courses for the major as freshmen (as pre-social work majors). Social work majors are required to complete 60 hours of general education courses and social work prerequisite courses and 60 hours of upper-division professional social work courses for a total of 120 hours. The upper-division 60 hours are taken in the junior and senior years and include 14 required social work courses (42 credit hours), two social work electives (6 credit hours), and a field practicum (12 credit hours).

1. Complete the general education curriculum
2. Complete the BSW Application Process
3. Have an overall GPA of at least 2.0.

General Education Requirements (Freshman and Sophomore Years)

All BSW applicants are required to complete a general education

curriculum which covers two years of liberal arts coursework.

• All BSW applicants for admission to the social work program core curriculum must submit an undergraduate transcript as part of their application packet which is evaluated by the BSW Program Director and the BSW Admissions Committee to ensure that specific liberal arts courses have been successfully completed with a grade of "C" or better.

The curriculum design highlights the importance of a liberal arts perspective in the development of a generalist practitioner. The liberal arts perspective focuses on critical thinking which increases the student's ability to understand and appreciate the complexity of the person-in-environment context.
Before entering upper division or core courses of the BSW program, student applications are reviewed to ensure that she or he has achieved the required liberal arts education grounded in:

• Science/Math (12 hours) [e.g., Biology, Natural Science, Math (2)]
• Social Sciences (18 hours) [e.g., History, Psychology, Sociology, Economics, etc.]
• Communication (9hours) [English, Computer Applications, etc.]
• Humanities (3 hours) [e.g., Philosophy, Religion, etc.)]To ensure that all BSW students have developed a liberal arts perspective, the program has developed the following procedures for admission to the as social work program.
• Electives (12 hours) [e.g. Public Speaking, Health]
• Social Work majors are required to complete 60 semester hours of lower division courses. The liberal arts curriculum is divided into (5) major areas and includes the specific liberal arts prerequisites for the major.

Required Liberal Arts - 24 hours

English 1101 – Communication Skills I (3 hours)
English 1102 – Communication Skills II (3 hours)
ENC 2300 – Improved Writing (3 hours)
MAC 1105 – College Algebra (3) **or**
MGF 1106 – Liberal Arts Math I (3 hours)
MGF 1107 - Liberal Arts Math II (3 hours)
SPC 2680 – Public Speaking (3 hours)
CSG 2060—Intro to Computers (3 hours)

HSC 1100 – Health (3)
Science – 6 hours
BSC 1005 – Biology (3 hours)
AST 1010 Geology/Botany/Astronomy/Chemistry (3 hours
AMH 2010 – American History I **or** AMH 2020 American History II (3 hours)
AMH 2091 – African American History **or** AFA 3104 African American Experience (3 hours)
POS 2041 – American National Government (3 hours)
ECO 2013 – Principles of Economics **or** ECO 3040 – Consumer Economics (3 hours)
PSY 2012 – Introduction to Psychology (3 hours)
SYG 2000 – Introduction to Sociology (3 hours)
SYG (elective) – Social Problems/ SYA/SYD/SYO/SYP (3 hours)
SPC 2603- Public Speaking (3 hours)

Additional Sociology Course (3 hours)
HSC 1100- Health (3 hours)
Free Electives (6 hours)
Humanities – (3 hours)
Religion/Music/Art

General Elective – 12 hours
Florida law requires all students in the State University System (SUS) to complete two units of foreign language at the high school or college level.

*This is a state common prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Upper Division Requirements (Junior and Senior Years)
Junior Year

Fall Semester	**Sem. Hours**.
SOW 3203 Introduction to Social Work	3
SOW 3104 HBSE: Life Cycle	3
SOW 3230 Social Welfare History	3
SOW 3290 Ethics and Professional Development	4
SOW 3801 Self Awareness HSC 1100 Health	3
Spring Semester	
SOW 3341 Soc. Work Practice with Individuals	3
SOW 3350 Interviewing and Recording	3
SOW 4103 Theories of Human Behavior	3
SOW 4403 Research Methods	3
SOW XXXX Social Work elective	3

Senior Year

Fall Semester	
SOW 4322 Social Work Practice with Groups	3
SOW 4343 Social Work Practice with Communities & Organizations	3
SOW 4414 Research Measurements	3
SOW 4232 Social Welfare Policy & Programs	3
SOW XXXX Social Work Elective	3
Spring Semester	
SOW 4510 Field Practicum	12
SOW 4522 Integrative Seminar	2
Total	**60**

Pre-requisite and co-requisite requirements are as follows:

1. SOW 3203 (Introduction to Social Work) is a pre-requisite for SOW 3341 (Practice I)
2. SOW 3341 (Practice I) is a pre-requisite for SOW 4322 (Practice II) and SOW 4343 (Practice III)
3. SOW 4403 (Research Methods) is a pre-requisite for SOW 4414 (Research Measurements)
4. All classes must be completed before taking SOW 4510 (Field Practicum) and SOW 4522 (Integrative Seminar)
5. SOW 4510 (Field Practicum) and SOW 4522 (Integrative Seminar) must be taken during the same semester

BSW Course Descriptions

SOW 3104: HBSE I - Life Cycle. (Credits: 3). **Prerequisites:** BSC 1005, PSY 2012, SYG 2000. This course introduces students to a life-span approach to human development within the context of families, groups, organizations, and communities. Emphasis is on the interplay of biological, cultural, psychological, and social factors that influence human behavior. The course surveys the major theories of human development with particular attention given to the psychology of the individual in relationship to the sociological significance of the individual's environment and addresses the unique situations of diverse groups, including ethnic/racial minorities, women, sexual minorities or gay and lesbian persons, the poor, the chronically ill, and the mentally and physically challenged.

SOW 3203: Introduction to Social Work. (Credits: 3). This course introduces the student to the profession of social work and its programs and services that have been developed as a response to human need from both a historical and contemporary perspective. This course blends perspectives from other disciplines, particularly the biological and social science with its own values, knowledge and skills.

SOW 3230: History of Social Welfare (Credits: 3). The history of social welfare from Ancient Greeks to present is important in understanding contemporary social welfare policies. This course also focuses on the development of social welfare institutions and the role of the individual citizen on influencing policies that govern those institutions.

SOW 3290: Ethics and Professional Development. (Credits: 4). This course is designed to assist students in the development of professional and practical skills necessary for entry into social work related careers. It prepares students for beginning generalist practice by providing the knowledge, values, and skills associated with social work career development and planning. **(SOCIAL WORK MAJORS ONLY)**

SOW 3341: Social Work Practice with Individuals. (Credits: 3). **Prerequisites**: Admission to the BSW Program; SOW 3104, **SOW 3203, SOW 3230, SOW 3290, SOW 380**1. This is the first of a three-course sequence designed to prepare students to provide social work services in a generalist practice framework. Multiple theoretical orientations are used as a foundation in understanding multi-systemic influences that affect the lives of individuals and families (micro-level): problem-solving model, systems approach, ecological, and strengths perspective. Social work values and ethics, relationship-building skills, and sensitivity to cultural compe-

tence are infused into the micro-skill development.

SOW 3350: Interviewing and Recording. (Credits: 3). **Prerequisites:** Admission to the BSW Program; SOW 3104, SOW 3203, SOW 3230, SOW 3290, SOW 3801. This course provides foundation knowledge and practice of interviewing and process recording for generalist social work practice. It is organized as an experimental laboratory to build good interviewing and writing skills. Essential interviewing skills are analyzed for their appropriate application with different populations. **(SOCIAL WORK MAJORS ONLY)**

SOW 3801: Human Diversity and Self-Awareness. (Credits: 3). Prerequisites: Liberal Arts Foundation Courses. This course is designed to help students develop awareness of self and the use of self to empower others in social work practice. The student will examine his/her identity, interpersonal relationship skills, problem-solving skills, styles of communication, and value system. An emphasis will be placed on helping students examine their own biases and prejudices in areas of human diversity, such as race/ethnicity, gender, age, religion, sexual orientation, and political orientation. In addition, personality attributes and communication styles will be viewed as forms of human diversity. **(SOCIAL WORK MAJORS ONLY)**

SOW 4103: HBSE II – Macro Theories of Human Behavior. (Credits: 3). Prerequisite: HBSE I – Life Cycle. This course introduces students to theories of human behavior that support social work practice which can be applied to the diversities that characterizes U.S. society and allow for human differences within cultures. The presentation of selected theories that differentially explain the development and behavior of individuals and how the individual's development is significantly impacted by the complex interaction with larger social systems including families, groups, institutions, organizations, and communities in society. **(SOCIAL WORK MAJORS ONLY)**

SOW 4232: Social Welfare Policies and Programs. (Credits: 3). Prerequisite: SOW 3230. The course focuses on public social welfare policy, social welfare program designs, and the instruments through which they are expressed: governmental organizations, public departments, welfare bureaus and faith-based organizations. The course prepares students for practice in social work that aims to further the achievement of individual and collective social and economic justice in society and around the world. The course analyzes the political and organizational processes used to influence social policy, the processes of policy formulation, implementation and evaluation and the frameworks for analyzing social policies in light of principles of social and economic justice, particularly for populations at-risk. **(SOCIAL WORK MAJORS ONLY)**

SOW 4322: Social Work Practice with Groups. (Credits: 3). Prerequisite: SOW3341. This course continues the learning process of social work skills needed to understand selected group processes, structures, and functions. Students will examine the use of groups in helping individual members solve problems and in helping groups accomplish goals. The classroom will become a laboratory for students to practice and develop additional social work skills. In addition, students will establish relationships with an organized group to observe and analyze group work activities. This is a practice-oriented course to develop knowledge in group dynamics, group development, and leadership. **(SOCIAL WORK MAJORS ONLY)**

SOW 4343: Social Work Practice w/ Communities and Organizations. (Credits: 3). Prerequisites: SOW 4322. The course introduces students to working with communities and organizations and builds on skills acquired in SOW 3341, including the application of the generalist practice model, interviewing, assessment, and intervention development and evaluation. Students conduct neighborhood or community assessments and write a mock grant application to address a problem identified in the assessment. **(SOCIAL WORK MAJORS ONLY)**

SW 4403: Research Methods. (Credits: 3). This course offers instruction in the scientific method of applied and basic research, including problem formulation, research design, data management, and practice evaluation. (SOCIAL WORK MAJORS ONLY)

SOW 4414: Measurements in Social Work Research. (Credits: 3). **Prerequisites**: SOW 4403. This course introduces students to statistics commonly used by social workers in their practice. **(SOCIAL WORK MAJORS ONLY)**

SOW 4510: Field Experience. (Credits: 12). **Prerequisites:** All Social Work required courses. Co-requisite: SOW 4522. Field experience is the practicum portion of social work education. In the field setting, students are provided educationally directed learning experiences in social service agencies or community settings under social work supervision. Students apply, test and integrate principles, theories, skills and values presented in earlier courses as they work with individuals, families, groups, organizations and communities in field settings. A minimum of 504 clock hours in field is required for the Bachelor Degree in Social Work (BSW). **(SOCIAL WORK MAJORS ONLY)**

SOW 4522: Integrative Seminar. (Credits: 2). **Prerequisites:** All Required Social Work Courses. Co-requisite: SOW 4510. A weekly seminar, accompanying SOW 4510, Field Experience is designed to incorporate the curriculum with agency practice through discussion and assignments that enhance student learning by combining knowledge, values, and skills gained in the classroom with those acquired in the field.

Special Interest Courses

SOW 4152: Human Sexuality. Credits: 3. Sexuality is an important part of human growth and development. It is imperative that social workers and others acquire knowledge of human sexuality as a sphere of human appreciation for its bio-psychosocial significance to the wellbeing of all persons in our society. This course covers human diversity, sexual variance and the span of human sexuality and psychosexual development.

SOW 4602: Social Work Practice in Health Care. Credits: 3. Issues related to the overall health care delivery system are explored, including legislation and policy, structural factors, the contributions of other disciplines, and organizational and professional standards. Special attention is given to the specific skills and tools used by social workers in health care settings and the increasingly challenging ethical, financial and quality of care issues associated with the delivery of health care services. Needs of special populations are emphasized.

SOW 4613: Mental Health Services. Credits: 3. This course defines and describes the current models of service and underlying theories behind mental health services and examines the mental health perspectives being advanced for ethnic minority groups, children, women, and LGBT/Q populations.

SOW 4622: Social Work with African American Families. Credits: 3. Theories, practice, and research on African American families are examined around the socio-cultural forces which im-

pact family structures and functions. Particular attention is given to misconceptions and myths about African American families in contemporary America. The generalist method of social work practice, the problem solving process and the eco-systems theoretical framework are utilized to provide a conceptual framework for practice with African American families.

SOW 4643: Social Work with the Aged. Credits: 3. This course will expose students to the life stage of aging from a bio-psychosocial perspective. The course is designed to introduce students to a broad base of gerontology and to prepare students to work with older persons in a variety of settings. Emphasis will be placed on the realities of aging in its proper perspectives.

SOW 4651: Children and the Law. Credits: 3. This course focuses on the impact which State and Federal laws have on social workers in the various child welfare settings; Florida statutes dealing with the protection of children (including child abuse and neglect, medical/mental health care, juvenile justice, family law/ custody issues and rights of biological parents and children); and social work roles in the formation and implementation of laws related to children.

SOW 4654: Social Work with Children. Credits: 3. This course focuses on the impact which State and Federal laws have on social workers in the various child welfare settings; Florida statutes dealing with the protection of children (including child abuse and neglect, medical/mental health care, juvenile justice, family law/ custody issues and rights of biological parents and children); and social work roles in the formation and implementation of laws related to children.

SOW 4657: Youth in Crisis. Credits: 3.This course provides an overview of the impact of violence on our nation's youth. Students will examine how domestic violence, physical abuse and sexual abuse, sexual battery and other forms of violence affect the development of our adolescents. Society's role in perpetuating violence as well as political moves to address violence will also be explored.

SOW 4682: AIDS: Impact on the Life Cycle. Credits: 3.This course provides an overview of the HIV and AIDS epidemic; information and knowledge related to HIV testing, ARC treatment and prevention, and associated legal and ethical issues. Students will examine the effects of AIDS on children, women, adolescents, substance abusers, incarcerated individuals, African Americans and other specific groups, and provides knowledge and information on the entire span of human sexuality and psychosexual development.

SOW 4700: Social Work with Chemical Dependency. Credits: 3.The nature and incidence of substance abuse; treatment modalities utilized; the influence of organized crime; the politics of the drug "war," and efforts towards prevention are the focus of this course. To facilitate a greater understanding of human diversity, substance abuse will emphasize poor racial/ethnic groups: African Americans, Hispanic Americans, Asian Americans, and Native Americans.

SOW 4740: Death and Dying. Credits: 3.This course introduces students to the nature and role of death education, death-related experiences, attitudes toward death and dying, as well as how different cultural and religious groups view death and death rituals. In addition, the course will examine grief and coping and various interventions utilized by health care professionals to avoid burnout among themselves.

SOW 4930: Social Work Topics and Seminars. Credits: 3. Social Work Topics and Seminars is the title used to offer a course which is not currently listed in the Master Course File. A course plan is developed and the subject matter is announced to students prior to registration. Simultaneously, the course plan is submitted to the Common Course Numbering System, hopefully to be available when the course is to be offered again.

Master of Social Work

Florida A&M University offers a Master of Social Work (MSW) degree in the Department of Social Work. The Master of Social Work Program is accredited by the Council on Social Work Education and prepares students for professional social work practice in the area of administration and community development. The professional curriculum consists of sixty (60) credit hours including twelve (12) hours of field placement.

MSW Admissions Requirements

Applicants requesting admission into the MSW program must meet the following requirements and complete the following forms:

1. Graduate application for admission submitted to the Office of Graduate Studies at Florida A&M University. Applications and information regarding this process can be obtained on-line at FAMU's School of Graduate Studies' website. Do not submit this form to the Department of Social Work. A copy of the form will be sent to the MSW program by the Office of Graduate Studies to indicate that the student has applied at the University level and has been entered into the FAMU computer system. A $20 application fee (check or money order), payable to Florida A&M University must accompany the application to the Graduate Admissions Office. Do not send this application fee to the Department of Social Work.

2. Official transcript submitted to the Office of Graduate Studies.

3. Grade point average of 3.0 or better (4.0 scale) for the last 60 credits of academic coursework as evidenced on the official transcript. NOTE: Applicants holding law degrees and those with grades in law courses must have a grade point average of 3.0 or above, exclusive of law school grades, for the last 60 hours of academic course work, and a grade point average in law courses of 2.5 (on a 4.0 scale) or 75 (on a 0-100 scale). Students whose grade point average is below 3.0 may be admitted under "Special Student Status" for the first semester of graduate course work, permitting them to take up to 12 credits in the graduate program.

4. Graduate Records Examination (GRE) required; please submit to Office of Graduate Studies.

5. Three professional letters of recommendation from persons who can address the applicant's ability and potential for successful graduate education and professional social work practice (e.g., former professors, employment supervisors, etc.).

6. Personal narrative statement reflecting the applicant's academic and employment history, as well as a discussion regarding her/ his interest in the social work profession.

7. Professional resume that includes his/her education and work history.

8. Proficiency in English. Any student prior to admission or during their course of study, may be required to demonstrate English proficiency through submission of a satisfactory score on a test designated by the Department of Social Work. Students whose written or spoken English proficiency is marginal in relation to the communication skills needed for effective social work practice may be required to seek instruction outside of the Department of Social Work to bring communication skills up to an acceptable level.

9. Florida State Immunization Record. The Health Services Student Clinic ensures that all students entering Florida A & M University are current on all required immunizations. A copy of that record must be included in the application package submitted. Failure to comply with this requirement will result in a "hold" being placed on the student's registration, preventing the student from completing the registration process.

10. Completion of the "Certification of Eligibility Form". This form allows the MSW program to process and award any financial aid given to you by the university or the Department of Social Work. The form is available through the Office of Graduate Studies. Failure to complete this form will result in your financial aid monies being forfeited and applied to another student.

Transfer Students

Students who transfer to the MSW program at Florida A & M University from another CSWE-accredited graduate program must meet all admissions requirements and have at least a 3.0 (B) average in all graduate social work courses in order to receive transfer credit. A maximum of 33 hours credit, earned within five years of the student's enrollment at Florida A & M University's Department of Social Work, with grades of "B" or above, may be transferred for credit toward the MSW degree. In addition to the usual application materials, transfer students must also submit an evaluation of first year field performance, course syllabi, a "Statement of Good Standing" from the Dean or Chairperson of their previous program, and a catalog from the institution in which s/he has been enrolled. Transfer student applications and materials are reviewed by the MSW Program Director in consultation with MSW faculty on a course-by-course basis.

Non-Social Work Transfer Credit

The Department of Social Work recognizes two categories of transfer credits for courses that are taken in disciplines or fields other than social work.

1. A maximum of six semester hours of graduate credit, earned within five years of the student's enrollment at Florida A & M University's Department of Social Work, with grades of "B" (3.0) or better, may be transferred as credit toward the MSW degree's elective credits, providing they meet the program's curriculum. That is, if a student has taken a series of graduate courses, but did not earn a master's degree, a maximum of six graduate credit hours may be applied toward the MSW.

2. A maximum of six semester hours of graduate credit, earned within five years of the student's enrollment at Florida A & M University's MSW program, with grades of "B" or better (where 4.0 = A), may be transferred from an earned master's degree toward the MSW now in progress. That is, a student may have earned a master's degree in a different discipline, and may now wish to apply that credit toward the MSW degree, providing the credits meet the mission and objectives of the MSW program.

In both cases, the student must request consideration of transfer credit with the MSW program director after admission to the MSW program. Graduate credit is not granted for correspondence courses, extension courses, continuing education courses, advanced standing examinations (except as pertaining to advanced graduate standing in the Department of Social Work), life or employment experience, or if an equivalent course offered by Florida A & M University does not warrant graduate credit.

Program Administration
Chairperson: Jenny Jones, Ph.D.
Program Director: Wachelle McKendrick, Ph.D.
Field Director: Katisa Donaldson, MSW

Curriculum

The MSW curriculum is guided by the Educational Policy and Accreditation Standards (EPAS) of the Council on Social Work Education, which is aligned with CSWE's accreditation process. The professional curriculum consists of sixty-seven (67) credit hours including twelve (12) hours of field placement.
Students must successfully complete 67 semester credit hours in order to receive the MSW degree. The curriculum consists of 35 credit hours of foundation courses followed by 32 credits of advanced coursework in administration and community development. The MSW curriculum prepares students to problem solve at the administrative and organizational, and community levels.

MSW Course Description
Foundation Year

SOW 5105: Human Behavior and the Social Environment I. Cr. 3. Prerequisites: Admission to graduate school or the permission of the instructor. This course lays the theoretical groundwork for social work practice with individuals and families. It provides the conceptual framework for the analysis of individuals and families using systems, developmental, cultural, and interactional frameworks in considering healthy and problematic functioning. Offered only in the fall semester.
SOW 5106: Human Behavior and the Social Environment II. Cr. 3. Prerequisites: SOW 5106 or the permission of the instructor. This course focuses on macro social work practice with an emphasis on social systems theories and the person-in-environment perspectives as frameworks for understanding how larger systems such as groups, organizations, and communities behave. Organizational and institutional responsiveness to the needs of oppressed populations are examined. Offered only in spring semester.
SOW 5629: Dynamics of Oppression. Cr. 3. Prerequisites: Admission to graduate school or the permission of the instructor. Theories of racism and oppression and how they relate to issues of social and economic justice are examined. Attention is specifically given to the various ways in which historically oppressed

populations are impacted by discrimination in America. Although identified as a foundation course, this is a required course for all students. Offered in the fall and summer semesters.

SOW 5235: Social Welfare Policies & Programs I. Cr. 3. Prerequisites: Admission to graduate school or the permission of the instructor. The course introduces students to the historical development of social welfare policies and programs. The course also examines the historical development, mission, values, and ethics of the social work profession in addressing social problems. Offered only in the fall semester.

SOW 5236: Social Welfare Policies & Programs II. Cr. 3. **Prerequisites:** SOW 5235 or the permission of the instructor. This course provides content on social welfare policy formulation, frameworks for policy analysis, and the current status and accessibility of social welfare programs and its impact on historically oppressed populations. Examines the intended and unintended consequences of public and organizational policies on such major social problems as poverty, racism, and gender inequality. Offered only in the spring semester.

SOW 5341: Social Work Practice I. Cr. 3. **Prerequisites:** Admission to the MSW Program and completion of, or concurrent enrollment in, SOW 5106. This course focuses on social work practice with individuals and families. Emphasis is placed on generalist practice models of intervention, including case management, advocacy, brokering, brief counseling, education, solution-focused issue management, and crisis/trauma management within a diverse and multicultural society. Issues of social justice, social policy, ethical responsibilities, assessment and evaluation are integrated into practice models. Offered only in the fall semester.

SOW 5343: Social Work Practice II. Cr. 3. **Prerequisites:** Admission to the MSW Program, SOW 5341, and completion or concurrent enrollment in SOW 5107. This course examines the fundamentals of macro social work practices aimed at eliminating barriers to enhanced social functioning are examined. Social Work principles and theories used in generalist practice with groups, communities, organizations and large systems are utilized. Offered only in spring.

SOW 5404: Social Work Research I. Cr. 3. **Prerequisites:** Admission to MSW program. This course focuses on the basic concepts and methods of scientific inquiry as utilized in building knowledge for social work practice. The course is intended to reinforce the objectives of the foundation curriculum by preparing students to follow the beginning steps of the generalist research process, including the development of a research question, conducting an exhaustive literature review, defining variables and their interrelatedness, problem formulation, and report writing. Offered only in the fall semester.

SOW 5405: Social Work Research II. Cr. 3. **Prerequisites**: SOW 5404. This course builds on SOW 5404 and introduces students to statistics commonly used by social workers in their practice, analyzing how statistical procedures can be used for decisions that are directly relevant to effective social work practice, policy, and research. Offered only in spring.

SOW 5534: Field Practicum I. Cr. 3. **Prerequisites:** Admission to the MSW program, successful completion of or concurrent enrollment in first year foundation coursework, and written consent of the MSW Field Director. MSW-supervised field experience in an approved social work setting at the foundation-year level is required. The field practicum must be taken concurrently with Field Seminar I [225 clock hours].

SOW 5545: Field Seminar I. Cr. 1. **Prerequisites:** Admission to the MSW program, successful completion of, or concurrent enrollment in, first year foundation coursework and Field Practicum I, and written consent of the MSW Field Director. Focus on integrating knowledge, values, and skills in relation to the field experience.

SOW 5535: Field Practicum II. Cr. 3. **Prerequisites:** SOW 5534 and the written consent of the MSW Field Director. Continuation of the foundation-year MSW-supervised field experience in an approved social work setting. The field practicum must be taken concurrently with Field Seminar II [225 clock hours].

SOW 5546: Field Seminar II. Cr. 1. **Prerequisites**: Admission to the MSW program, successful completion of, or concurrent enrollment in, first year foundation coursework and Field Practicum II, and written consent of the MSW Field Director. Focus on integrating knowledge, values and skills in relation to field experience.

Graduate Course Descriptions:
MSW Advanced Concentration Year

SOW 5334: Theories of Communities and Organizations. Cr.3. **Prerequisites**: Successful completion of all foundation year coursework. Examination of advanced theories of community and organizational development, including the analysis of community and organizational functioning, its capacity to change, its bases of power, the enhancement of community and organizational effectiveness, and the building of organized efforts aimed at bringing about social and economic justice. Offered only in the fall semester.

SOW 5344: Community Development in Social Work Practice. Cr. 3. **Prerequisites:** Successful completion of all foundation year coursework and admission into the MSW program ; and completion of SOW 5334. This course focuses on the utilization of community strengths in rebuilding at-risk urban and rural neighborhoods and communities. Students learn how to combine and mobilize community strengths in building stronger, more self-reliant and economically powerful communities. The course also focuses on how to incorporate public and private sectors in social and economic community development strategies in urban and rural areas. Offered only in the fall.

SOW 5386: Program Design and Development. Cr. 3. **Prerequisites**: Successful completion of all foundation year coursework, admission to the MSW program, and completion of SOW 5334. This course examines program design and development of social service agencies and organizations. The course addresses the components of designing an effective program in a human service organization, conducting a needs assessment, planning, designing and tracking the intervention and calculating the costs and values of the intervention. Offered only in the spring semester.

SOW 5387: Resource Development and Management. Cr. 3. **Prerequisites:** Successful completion of all foundation year coursework, admission to the MSW program, and completion of SOW 5334. Application of theories related to writing and procuring grants, managing fiscal resources, budget evaluation, and fund-raising methods. Particular attention is given to developing and applying resources to underserved urban and rural populations, particularly women, people of color and other historically oppressed groups, in an empowering manner. Offered only in the spring semester.

SOW 5241: Advanced Social Welfare Policies & Programs. Cr.

3. **Prerequisites**: Successful completion of all foundation year coursework, admission to the MSW program. This advanced policy course examines methods of utilizing policies and programs to empower groups, communities and organizations. Students apply methods of judicial and legal research to a chosen social welfare issue; develop policy and devise strategies to bring the policy to fruition to address the issues through organizational and legislative channels.

SOW 5433: Program Evaluation. Cr. 3. Prerequisites: Successful completion of all foundation year coursework. Provides students with the knowledge, values and skills required to measure and monitor the outcomes of social service programs and organizations. Students learn how to generate reports that can be effectively used by administrators and funding sources to determine the program's efficiency and effectiveness, as well as ways to enhance its performance. Offered only in the spring semester.

SOW 5538: Field Practicum III. Cr. 3. **Prerequisites:** SOW 5535 and SOW 5546, completion of SOW 5334, SOW 5344, SOW 5386, and SOW 5433, and written consent of the MSW Field Coordinator. Students are placed in approved MSW-supervised placement where they are engaged in a wide range of community development and administrative tasks where advanced knowledge, values and skills may be applied [225 clock hours].

SOW 5547: Field Seminar III. Cr. 1. **Prerequisites:** SOW 5535 and SOW 5546, successful completion of SOW 5334, SOW 5344, SOW 5386, and SOW 5433, and written consent of the MSW Field Director. Integration of advanced knowledge and skills applied in the field placement.

S**OW 5539: Field Practicum IV.** Cr. 3. **Prerequisites:** SOW 5538 and SOW 5547, completion of SOW 5433, and written consent of the MSW Field Coordinator. Students continue with their advanced MSW-supervised placement where they engage in community development and administration tasks [225 clock hours].

SOW 5548: Field Seminar IV. Cr. 3. **Prerequisites:** SOW 5538 and SOW 5547, completion of, or concurrent enrollment in, SOW 5433 and SOW 5539, and written consent of the MSW Field Director Integration of advanced knowledge and skills applied in the field placement.

Electives

SOW 5123: Psychopathology. Cr. 3. Prerequisites: Admission to the MSW program or consent of instructor. A course designed to prepare social workers to understand the medical model of mental health practice (e.g., DSM IV, mental health diagnoses, psychiatric treatment, medications, etc.) in order to communicate effectively with the multidisciplinary treatment team. Reviews psychodynamic personality theories and concepts of psychopathology which stem from them. Develops a frame of reference for critically analyzing mental health practice with oppressed populations and addressing the mental health needs of people of color, women, and other oppressed populations.

SOW 5372: Supervision, Staff Development and Consultation. Cr. 3. **Prerequisites**: Admission to the MSW program or consent of instructor. Emphasis on the supervisory, consultation and staff development theories and skills necessary to nurture staff so they can function creatively, productively, independently and effectively. Comparative study of supervisory techniques with profession als, paraprofessionals and volunteers is undertaken.

SOW 5335: Empowerment. Cr. 3. **Prerequisites**: Admission to the MSW program or consent of instructor. Theory, methods and skills necessary for building collaborative alliances with consumer/community systems in order to increase access to, and control of, needed individual, family, group, community and organizational resources. Emancipatory interventions and multicultural practice methods at the micro, mezzo and macro levels are emphasized.

SOW 5625: Women, Power and Change. Cr. 3. **Prerequisites:** Admission to the MSW program or consent of instructor. Designed to provide students with knowledge and understanding of women's issues in relation to changing roles, sexism, racism, and empowerment at the individual, family, group, community, and organizational levels.

SOW 5349: Case Management. Cr. 3. **Prerequisites:** Admission to the MSW program or consent of instructor. Provides knowledge regarding the historical development, processes and models for case management in the social services. Examines the comprehensive enhancement practice model of case management, establishment of case management programs in social service systems, and methods for evaluation of case management program designs.

SOW 5336: Rural Social Work. Cr. 3. **Prerequisites:** Admission to the MSW program or consent of instructor. An overview of theory and practice issues related to disadvantaged individuals, families, groups, organizations, and communities in rural settings. Particular attention is given to addressing the needs of vulnerable populations living in small and rural areas.

SOW 5906: Directed Independent Study. Cr. 1-6. **Prerequisites:** Admission to the MSW program, written consent of the sponsoring faculty member, and written consent of the MSW Program Director. An individualized research study of a social work issues conducted under the direction and supervision of graduate faculty. Requires a carefully laid out contract between the student and the sponsoring faculty member showing what will be studied, how the study will be carried out, the expected outcomes of the study, and the timetable for completion of the study.

SOW 5550: Special Topics in Social Work. Cr. 1-6. **Prerequisite**s: Admission to the MSW program and consent of the instructor. A variable content graduate course focusing on selected topics in social work and social welfare.

SOW 6428: The Professional Paper. Cr. 1-6. **Prerequisites:** Written consent of a sponsoring faculty member and the approval of the MSW Program Director. A research paper involving the systematic investigation and critical analysis of a social work or social welfare-related issue. Requires a carefully laid out contract between the students and the sponsoring faculty member showing what specific topic is to be systematically investigated, the framework for analyzing the topic, the format for the research paper, and a timetable for completion of the investigation, analysis and paper.

Department of Sociology and Criminal Justice

Faculty

Professors Emeriti: Dhillon, Jogindar; Smith, Charles U.
Department Chair: Gray-Ray, Phyllis Ph.D.
Professors: Foster, John T.; Foster, Sarah W.; Gray-Ray, Phyllis; Persaud, Narayan

Associate Professors: Moloye, Olugbemi
Assistant Professors: Brethauer-Gay, Helen; Dix-Richardson,

Felecia; Dokurugu, Yussif; Harris, Gregory; Hughes, Brenda;
Anthropology Coordinator: Olugbemi Moloye, Ph.D.
Criminal Justice Coordinator: Kristen Bowen
Sociology Coordinator: Brenda Hughes, Ph.D.
P**rogram Coordinator/Placement Director**: Perkins, Jacqueline

The Department of Sociology and Criminal Justice provides two programs of study leading to bachelor degrees: the Bachelor of Science in Sociology and the Bachelor of Criminal Justice. The Department offers minors in anthropology, sociology, criminal justice and juvenile justice. In collaboration with other units in the College, the Department participates actively in the interdivisional Master's of Applied Social Sciences program. In all our programs, students' growth and development are our first priority, and we endeavor to provide a first-rate education for each student. A total of 120 semester credit hours are required for a baccalaureate degree–60 lower level credit hours and 60 upper level credit hours. Students are encouraged to master the skills essential for their chosen profession and to become productive, thoughtful and ethical citizens.

Requirements for a Major in Sociology
(Bachelor of Science Degree)

To major in sociology a student must take courses in social thought, research methods and appropriate substantive material by completing 30 semester hours in sociology, including SYA 3010, SYA 3300, SYA 3400, SYD 4730 and SYA 4930. (SYG 2000, Introduction to Sociology, and SYG 2010, Social Problems, are prerequisites for all upper level courses in sociology.) It is expected that these core courses will be taken at Florida A&M University. The additional 15 semester hours are to be taken from among the courses in sociology and anthropology. Students may select elective courses from the following areas: social structure, intergroup relations, social research and methodology, marriage and family studies, social psychology, community studies, and anthropology. Internships are available to students and are recommended for students who do not plan to do graduate work. A grade below a "C" in any of these courses will not be accepted for credit toward the major. No more than 6 semester credit hours in anthropology may be applied toward a degree in sociology. Graduates of the program are eligible to enter graduate or law school as well as take positions in a wide variety of governmental and private organizations.

A minor is required for sociology majors. The minor requires 18 credit hours in an approved field. The curriculum for the minor follows the requirements specified by the minor field. A grade below a "C" will not be accepted for credit toward the minor.

A minor in sociology for non-majors requires 18 credit hours in sociology courses. Students must complete successfully SYG 2000, SYA 3010, SYA 3300, and twelve (12) upper level hours of electives in sociology and anthropology. SYG 2000 and SYG 2010 are prerequisites for all other sociology courses. A grade below a "C" will not be accepted for credit toward the minor.

A minor in anthropology for non-majors requires 18 credit hours in anthropology courses. Students must complete ANT 2511 and 15 hours of upper-level electives in anthropology. [Six credit hours of sociology may be applied toward an Anthropology minor] ANT 2000, Introduction to Anthropology, is prerequisite for all electives in anthropology. A grade below a "C" will not be accepted for credit toward the minor.

Students who use Introduction to Sociology and/or Introduction to Anthropology to satisfy their general education requirements cannot use these courses as part of satisfying their minor requirements.

Requirements for a Major in Criminal Justice:
(Bachelor of Criminal Justice Degree)

The components of Criminal Justice offerings consist of theory, research, criminal law, law enforcement, corrections, and juvenile justice. To major in criminal justice, a student must complete 30 semester hours of upper division criminal justice courses, including CCJ 3117, CCJ 4700, CCJ 3718, CCJ 4932, CJE 4065, CJL 3510, and CJL 4012. Students must master CCJ 2010, "Introduction to Criminal Justice" before taking upper level courses. It is expected that these 18 semester credit hours of core courses will be taken at Florida A&M University. The additional 9 semester hours are to be taken from a single substantive area. Students may choose from the substantive areas of: (1) legal studies, (2) minority and gender studies, (3) juvenile justice, or (4) corrections. Internships are available for students to acquire experience in their chosen field of study. The internship is optional, but students are strongly encouraged to arrange their schedules so that they can complete an internship before they graduate. Graduates of the program will be qualified to work in agencies throughout the criminal justice system or enter graduate or law school. A grade below a "C" will not be accepted for credit toward the major.

A minor is required for Criminal Justice majors. The minor requires 18 credit hours of course work in an approved non-criminal justice/juvenile justice field. The curriculum for the minor follows the requirements specified by the minor field. A grade below a "C" will not be accepted for credit toward the minor requirements. Most students who major in Criminal Justice choose to minor in sociology or anthropology.

A minor in Criminal Justice for non-majors requires 18 credit hours in criminal justice courses. Students must take CCJ 2010 "Introduction to CJ" and 15 upper level credit hours of electives in criminal justice. A grade below a "C" will not be accepted for credit toward the minor.

A minor in Juvenile Justice is restricted to non-CJ majors. It requires 18 credit hours in selected criminal/juvenile justice courses. Students must take CJJ 3501, CJJ 3544, CJJ 3545, CCJ 4933, CCJ 4939, CCJ 3503 or CJC 4164. A grade below a "C" will not be accepted for credit toward the minor.

The Juvenile Justice Role Model Development Program is a multi-disciplinary and multi-cultural approach to the study of Juvenile Justice. The Florida A&M Role Model Program offers both a concentration and certification in juvenile justice. It is designed for both Criminal Justice majors (those majors who complete the substantive area nine credit hours requirement in the area of juve-

nile justice) and others who may choose to earn a certificate. The Program's mission is to provide a pool of professionals in the area of Juvenile Justice who are uniquely trained, culturally aware, and committed to serving as role models and mentors in prevention, intervention, and redirection programs throughout the state and nation. The program also offers field placements in working with juveniles.

The Juvenile Justice concentration for criminal justice majors includes nine hours of course work in juvenile justice: CJJ 3010, CJJ 3544, and CJJ 3545. For non-criminal justice majors who would like to minor in Juvenile Justice, 18 credit hours are required. See minor requirements for non-CJ majors. Each student will be required to mentor an at-risk youth. Note: students who major in Criminal Justice cannot minor in Juvenile Justice.

Curriculum Guide

Bachelor of Science in Sociology

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Communicative Skills I, II or honors courses	6
MAC 1105 College Algebra	3
MGF 1106 or 1107 Math-Liberal Arts I or II or MAD 2120 Finite Math or	
STA 2024 Statistics	3
AMH 2010 or 2020 American History	3
POS 2041 American National Government	3
SYG 2000 Introduction to Sociology	3
ANT 2000 Introduction to Anthropology	3
HUM 2211 or 2230 Historical Survey I or II or Other Humanities Elective	3
Free Elective	3
Subtotal	**30**
Sophomore Year	
BSC 1005 Biological Science	3
PSC 1121 Physical Science, AST 1000 Astronomy	4
PSY 2012 Introduction to Psychology	3
ENC 2300 Improving Writing Competency or ENC 3243 Technical Report Writing	3
ECO Economics Elective	3
SPC 1050/2600 Public Speaking	3
HUM Humanities Elective	3
AMH 2091 Afro-American History or AFA 3104 African-American Experience	3
CGS 1160 Introduction to Microcomputer Applications	3
Free Elective	2
Subtotal	**30**
Junior Year	
SYA 3010 Sociological Theory	3
SYA 3300 Research Methods	3
SYA 3400 Social Statistics	3
SYG 2010 Social Problems	3
Sociology/Anthropology Electives	6
Minor Electives	9
Free Electives	3
Subtotal	**30**
Senior Year	
SYA 4930 Seminar in Sociology	3
Sociology/Anthropology Electives	9
Minor Electives	9
Internship/Free Electives	9
Subtotal	30
Total Hours for B.S. in Sociology	**120**

Biological Science Requirement: BSC 1005, BSC 1010 or ISC sequence.

Physical Science Requirement: PSC 1121, AST 1002 or ISC sequence. Grade of "C" or above completes this requirement.

Bachelor of Criminal Justice

Freshman Year	
ENC 1101, 1102 or 1122 Communication Skills I, II or honors courses	6
MAC 1105 College Algebra or MGF 1106 Math Science	3
MGF 2212 Finite Mathematics or STA 2024 Statistics	3
SYG 2000 Introduction to Sociology	3
ANT 2000 Introduction to Anthropology	3
BSC 1005 Biological Science	3
HUM approved electives	6
CGS 1160 Introduction to Microcomputer Applications	3
Subtotal	**30**
Sophomore Year	
AMH 2091 African American History or AFA 3104 African American Experience	3
CCJ 2010 Introduction to Criminal Justice	3
PSC 1121 Physical Science or AST 1000 Astronomy	4
PSY 2012 Introduction to Psychology	3
ENC 2300 Improving Writing Competency or ENC 3251 Technical Report Writing	3
ECO Economics Elective (2013 or 3040)	3
POS 2041 or 2112 American National Government	3
AMH 2010 or 2020 American History	3
SPC 1050 or 2600 Public Speaking	3
Free Elective	2
Subtotal	**30**
Junior Year	
CJL 3510 American Court System	3
CCJ 3117 Theories of Criminal Behavior	3
CCJ 3702 Statistics	3
CJE 4065 Police and Society	3
CCJ Substantive Area**	9
Minor Elective	9
Subtotal	**30**

Students may choose one (1) substantive area from:

**Legal Studies	9
**Minority and Gender	9
**Juvenile Justice	9
**Corrections	9

Senior Year

CCJ 4310 Penology	3
CCJ 4700 Research in Criminal Justice	3
CCJ 4934 Seminar in Criminal Justice	3
CCJ 4947 *Field Placement/Internship (optional)	12
Minor	9
Subtotal	**30**

*If a student chooses not to register for internship, appropriate additional classroom courses must be taken to reach 60 credit hours for upper division work.

Biological Science Requirement: BSC 1005, BSC 1010 or ISC sequence.

Physical Science Requirement: PSC 1121, AST 1002 or ISC sequence. Grade of "C" or above completes this requirement.

***Substantive CJ Areas**
(Choose one area for nine semester hours)

***Law Enforcement**

CJL 4565 Law & Social Control	3
CCJ 4403 Pollice Administration	3
CCJ 4930 Comtemporary Issues in Law Enforcement	3
CCJ XXXX Security Management	3

***Legal Studies**

CJL 4064 American Criminal Law	3
CCJ 4932 Contemporary Judicial Issues or	
CCJ 4936 American Criminal Procedure	3
CCJ 4031 Cases in Corrections	3

***Minority and Gender**

CCJ 4670 Women and Crime	3
CCJ 4662 Race, Class and Justice	3
CCJ 3129 Multicultural Perspectives on Adolescence	3

***Juvenile Justice**

CJJ 3010 Juvenile Delinquency and JJ System	3
CJJ 3545 Social Problems of Youth	3
CJJ 3544 Youth Management	3
Community Organization and Advocacy	3

***Corrections**

CCJ 4031 Cases in Corrections	3
CJC 4164 Community Corrections	3
CCJ 4360 Contemporary Issues in Corrections	3

* Choose one other criminal justice class (including special topics classes–CCJ 4930 through CCJ 4939) for three semester hours.

Total Hours for B.S. in Criminal Justice **120**

Minor Programs

Anthropology

ANT 2511 Emergence of Man `	3
Upper Division Anthropology Electives	15
Total hours	**18**

Criminal Justice

CCJ 2010 Introduction to Criminal Justice	3
Upper Division Criminal Justice Elective Courses	15
Total hour	**18**

Sociology

SYA 3010 Sociological Theory	3
SYA 3300 Research Methods	3
Upper Division Sociology Elective Courses	12
Total hours	**18**

Course Descriptions

ANT 2000 Introduction to Anthropology (3) An introduction to basic concepts in physical and cultural anthropology. An exploration of evidence of human evolution.

ANT 2410 Cultural Anthropology (3) Analysis of theory basic to historical development of cultural anthropology. Examples of social evolution, diffusion and structural-functionalism are synthesized into models and applied to ethnographic evidence.

ANT 2511 Emergence of Man (3) Study of human development, physically and socially, until the beginning of civilization.

ANT 3212 Peoples of the World (3) Descriptive study of selected cultures with emphasis placed upon social complexity and diversity.

ANT 3241 Magic, Witchcraft, and Religion (3) Anthropological analysis of religion as a universal category of culture. The cultural conceptions of the supernatural will be considered. With a strong concern with the sociocultural and ecological contexts of beliefs, the course aims at a comparative understanding of myth and ritual, sorcery, shamanism, sacrifice, and totemism.

ANT 3340 Caribbean Cultural Patterns (3) Historical overview of the Caribbean region examines; the cultural development of Spanish, Dutch, and French islands and implications of U.S. Caribbean relations.

ANT 3352 Peoples and Cultures of Africa (3) An overview of the world's most ethnographically and linguistically diverse continent. Africa's indigenous groups will be examined through an exploration of ecological and cultural similarities and differences in institutions and socio-cultural patterns. Political, social, cultural change in 20th century Africa and the nature of contemporary Africa will be explored.

ANT 3351 South African Ethnography (3) An examination of the cultural mosaic of modern Southern Africa that explores the fateful intertwining of the diverse cultural groups of the region through ethnographic studies, history, and current events.

ANT 3422 Family & Kinship in Cross-Cultural Perspective (3) Historical overview of family systems and cultural development ethnographic research techniques and application to the study of kinship systems.

ANT 3702 International Development (3) Application of anthropology concepts to the process of development. Emphasizes connections between economic systems, social and cultural conditions and the realities of professionals working in various cultural settings.

ANT 3711 Cross-Cultural Conflict Resolution (3) Provides an overview of the theories, research, and practices of conflict resolu tion. The course emphasizes skill development in mediation and conflict resolution with a special focus on cross-cultural settings.

ANT 4905 Directed Individual Study (3) Individualized study and research under faculty supervision.

ANT 4930 Special Topics in Anthropology (3) Focus on topics of a general nature in anthropology not covered in current course offerings. Topics to be considered at various times are: third world cultures, Africans in the old world and new, issues in anthropological theory, anthropological issues in archeology and history, anthropology and health, women and culture, etc.

CAP 3505 Computer Applications for the Social Sciences (3) A project based course that examines ideas and tools of microcomputer revolution, including electronic spreadsheets, word processing, data base management, telecommunication software, use of the internet/www for social research.

CCJ 2010 Introduction to Criminal Justice (3) Overview of criminal justice system and its processes with consideration of interrelationship among criminal law, law enforcement, courts, diversion programs, corrections, and probation and parole.

CJJ 3010 Juvenile Delinquency and the Juvenile Justice System (3) Designed to provide an overview of the various theories of juvenile delinquency, methods of prevention, intervention and rehabilitation. It also provides an overview of the juvenile justice system's treatment of the young.

CCJ 3129 Multicultural Perspectives on Adolescence and Adolescent Development (3) Presents an overview of current views on adolescents within a multicultural context and the various theoretical approaches explaining the similarities and differences in youth development.

CCJ 3117 Theories of Criminal Behavior (3) Identifications of theory construction and its relationship to research and practice. Exposition of humanity's struggle for an insight into problems of crime up to present time.

CCJ 3702 Statistics. The use of basic descriptive and inferential statistical techniques, particularly as they applies to criminal justice data.

CCJ 4031 Cases in Corrections (3) Case histories of correctional clients prior to and during institutionalization.

CJE 4065 Police and Society (3) Study of law enforcement, particularly within the context of modern American society.

CCJ 4360 Contemporary Issues in Correction (3) Discussion and debate on contemporary issues facing the field of corrections.

CCJ 4662 Race, Class, and Justice (3) Explores the extent and form of minority crime and criminal victimization. Examines the type of representation and adjudication of minorities by the criminal justice system.

CCJ 4670 Women and Crime. Study of women's involvement with criminal processing systems (as offender, victim and practitioner).

CCJ 4700 Research Methods in Criminal Justice (3) An overview of research methodology and statistics with particular emphasis on the uses of research within the criminal justice system.

CCJ 4905 Directed Independent Study (3) Individualized study and research under faculty supervision.

CCJ 4930 Contemporary Issues in Law Enforcement (3) Discussion and/or debate on contemporary issues facing law enforcement.

CCJ 4932 Contemporary Judicial Issues (3) Discussion and debate on significant contemporary issues facing state and federal ourts.

CCJ 4933 Special Topics: Juvenile Law (3) Course focuses on the law directly impacting children in their homes and in protective custody.

CCJ 4934 Senior Seminar in Criminal Justice (3) Contemporary analysis of theoretical and applied issues in criminal justice.

CCJ 4935 Special Topics: Law and Social Control (3) Study of law and social structure, sociology of law, and formal control machinery.

CCJ 4936 Special Topics: American Criminal Procedures (3) Procedural law as it relates to the 4th, 5th, 6th, and 14th amendments to the U.S. Constitution.

CCJ 4937 Special Topics: Patterns of Criminal Behavior (3) Reviews the nature and extent of crime problem. Concentrates on major patterns of offender behavior, including interpersonal violence, political violence, street crime, white-collar crime, organized crime, and public order crime.

CCJ 4938 Special Topics: Environmental Law and Crime (3) Examines contemporary issues of law, law enforcement and the judicial system as they relate to the environment and its uses.

CCJ 4939 Special Topics: Qualitative Field Research Methods in Criminal Justice (3) Provided the student of social and behavioral sciences with an exposure to the basic research tools and techniques of ethnographic data collection in mutual social settings. Student will develop skills in participant observation, discovering cultural themes, analysis of observational data, and ethnographic report writing.

CCJ 4947 Internship in Criminal Justice (1-12) A work/study affiliation in an approved agency, allowing the student to apply theory to practice.

CCJ 5020 Juvenile Justice (3) Overview of the various theories of juvenile delinquency, methods of prevention, intervention and rehabilitation at the graduate level. It also provides an overview of the juvenile justice system's treatment of the young.

CCJ 5446 Correctional Management (3) An overview of correctional management including history, increases in confinement, decline of community based corrections, revival of capital punishment, models in correctional management, and characteristics of correctional institutions. Comparison of traditional contemporary correctional systems will be emphasized.

CCJ 5457 Court Administration (3) This course introduces students to the rudiments of court administration. With a concern for the practical aspects of court administration, the course focuses on analysis of the administrative functions of the court, the delegation of administrative duties, the adversarial system, and other concepts relating to the court as an institution of government. Management functions, management styles, and leadership will also be explored to understand the dynamics of organizational change in courts.

CCJ 5608 Criminology Theory and Practice (3) Historical and contemporary examination of the major theories of criminology. Emphasis is placed upon critical analysis and practical applicability of theories to criminal justice policies.

CCJ 5910 Independent Research in Criminal Justice (3) Individually selected program of personal study related to specific issues in criminal justice. The student is expected to work with his/her mentor to produce a research-oriented paper suitable for professional presentation or publication.

CCJ 5659 Race, Class and Gender (3) Presents, explains, and explores contemporary issues of race, class and gender in the criminal system.

CCJ 5934 Contemporary Issues in Criminal Justice (3) Presents, explains, and explores viable solutions to contemporary issues facing the criminal justice system in law enforcement, courts, prosecution, sentencing, criminal law, etc.

CJC 4164 Community Corrections (3) Analysis of the theories,

concepts, practices, and special problems of juvenile and adult community correctional facilities.

CJJ 3544 Youth Management, Community Organization, and Advocacy (3) Examines the various approaches to youth management as they relate to prevention, intervention, and diversion. Explores community initiatives to address problems of delinquency and the different methods used to guide high risk youths towards positive behavior.

CJJ 3545 Social Problems of Youth (3) Offers a broad coverage of the various problems affecting the youth population and societal responses to these problems. Addresses some of the consequences of youth problems on community and society.

CJL 3510 American Court Systems (3) Examination of local, state, and federal court systems, judicial interpretations, and decision-making processes.

CJL 4064 American Criminal Law (3) Sources of state and federal criminal law and elements of criminal acts in general as related to various crimes and the conduct of prosecution and defense in criminal trials.

CJL 4012 Penology (3) Examines the various aspects of the American correctional system and its affected population through a contextual historical analysis. Primary emphasis is placed upon correctional strategies and policies and their subsequent implementation and outcomes.

ISS 5316 Advanced Applications of Statistics & Research (3) Graduate research and statistics skill development with computer applications leading to mastery of data reduction and analytic techniques.

ISS 6972 Research and Thesis (6) Supervised interdisciplinary research and thesis for Master of Applied Social Science Program. Option: ISS 6971 or ISS 6942.

SYA 3010 Sociological Theory (3) Historical overview of the development of sociological thought with emphasis on contemporary application.

SYA 3300 Research Methods (3) Applications of the scientific method to the collection and presentation of data. Computer work required.

SYA 3400 Social Statistics (3) Prereq: SYA 3300. Statistical applications to the analysis of data. The problems of design, development, implementation and reporting of data for research projects are examined.

SYA 3931 Honors Seminar I (3) Restricted to undergraduate honor students. Survey of historic and contemporary sociological issues.

SYA 3932 Honors Seminar II (3) Restricted to undergraduate honor students. Survey of historic and contemporary sociological issues.

SYA 4131 Social Behavior (3) Within the context of three paradigms of human behavior, selected theories illustrative of each paradigm are discussed.

SYA 4654 Program Evaluation (3) Undergraduate course in research and statistics. Policies and procedures for the evaluation of public and private programs of education, social welfare, and government are examined.

SYA 4905 Directed Individual Study (1-6) Individualized study and research under faculty supervision.

SYA 4930 Seminar in Sociology (3) Comprehensive examination of sociological concepts and methods for the analysis of group interaction. Emphasis on independent study and communication skills.

SYA 4942 Internship in Sociology (1-12) Designed to provide student opportunity to apply pure research and theory-based knowledge acquired within an academic setting to an applied issue- or problem-oriented setting.

SYA 5136 Theories of Social Behavior (3) Interdisciplinary, critical analysis of selected major theories of human social behavior.

SYA 5659 Program Evaluation (3) Prereq: Graduate course in research and statistics. Policies and procedures for the evaluation of public and private programs in education, social welfare, and government.

SYA 5971 Thesis (6) Graduate students in sociology who elect to write a thesis for the Masters of Applied Social Sciences degree should enroll while completing their project.

SYA 6942 Internship (1-6) Supervised field work in sociology with faculty or placement in an appropriate agency.

SYD 3410 Urban Sociology (3) Historical and contemporary urbanization patterns, processes of urban change, the impact of urbanization upon social interaction and personal adjustment, and the future of the city.

SYD 3440 Rural Sociology (3) This course provides the student with an overview of social life in rural communities. It emphasizes the adjustment of rural communities to social, technological, and demographic change. With the growing importance of large agri-businesses and the declining influence of small farmers, the future of traditional patterns of rural life in the contemporary United States is also considered.

SYD 3600 Community Structure and Analysis (3) This course explores the tremendous changes in American communities as they have responded to increasing industrialization, an expanding service industry, and rapid technological changes. Models for analysis of community structure and guidelines for analyzing social institution in communities will be examined.

SYD 3700 Intergroup Relations in America (3) Sociological appraisal of problems in intergroup relations in contemporary America.

SYD 3770 Race and Culture (3) Assessment of the impact of race and culture on social relationships. Conceptual perspectives, experimental data and field studies will be discussed.

SYD 4020 Population Problems (3) Study of international and national population changes and resulting problems. Possible solutions to such problems are examined.

SYD 4603 Strategies of Community Development (3) The changing nature of American communities requires the mastery of techniques to better understand and manage community change.

SYD 4730 Sociology of the Black Experience (3) Sociological analysis of the Afro-American experience from the 17th century to the present.

SYD 5255 Sociology of Education (3) An examination of the theories and research ongoing in the field of education. The course examines the educational system; the impact of social factors like stratification, inequality, sex, race, and social movements; the organization of schools; the hidden curriculum; higher education; and global systems of education.

SYD 5325 Applied Sociology (3) Policy study and research in sociology, characteristics of and relationship between policy (applied) research and basic research and contributions toward social problem reduction.

SYD 5608 Strategies for Community Development (3) Theory, principles, and techniques of major contemporary strategies of community development. Comparison of merits and limitations of

each strategy for work in rural and urban communities. Applications of knowledge through simulation exercises.

SYD 5609 Program Planning for Developmental Work (3) Prereq: SYD 5608. Developmental planning as a framework for project administration. Theory, principles, and techniques of major models of program planning. Practical exercises for developing programs for projects of varying complexity.

SYD 5705 Seminar in Race and Ethnic Relations (3) An extensive examination of current problems and issues in race and ethnic relations in the United States with emphasis on the use of current research literature and theories to find solutions.

SYG 2000 Introduction to Sociology (3) Sociological concepts and theoretical perspectives; methods of research; substantive areas in sociology; social institutions; social change and disorganization, urban ecology, demography, and social stratification.

SYG 2010 Social Problems (3) This course is designed to explore and explain the social problems of human population.

SYO 3102 Family in America (3) Using several sociological paradigms, an examination of family organization in the American society is investigated. Analysis of contemporary social change and its influence on family life is examined.

SYO 3110 Men, Women & Social Change (3) Developmental approach to structure and function of marriage and family. Current issues and controversies related to men, women and relationships are examined.

SYO 3400 Medical Sociology (3) Stresses social factors in health behavior and interdisciplinary collaboration between medical and social sciences. Examines health professions and professionals, role relationship withing the therapeutic encounter, social structure of the hospital and related health facilities, and current research challenges.

SYO 3460 Sociology of Mass Media (3) Examines the function, history and role of mass media from a sociological perspective.

SYO 3530 Social Stratification (3) Development and characteristics of status grouping patterns of interaction within and between social classes and the implications of stratification for human group behavior.

SYO 4103 Parenting in America (3) Course will (1) contrast historical and contemporary parenting ideologies and practices, (2) examine four major theoretical orientations toward child behavior, (3) compare parenting techniques; and (4) explore parenting practices within alternate family structures such as single-parent and reconstituted families.

SYO 4160 American Minority Family Systems (3) Sociological analysis of structural and cultural variations among American minorities and their family systems. Comparisons and contrasts are drawn.

SYO 4250 Sociology of Education (3) Institutional approach to study of education systems and current problems and practices.

SYP 3000 Social Psychology (3) Sociological perspective of the interrelationships between the person and groups and the interaction between social structural variables and personality development.

SYP 3030 Small Groups (3) Explorations of theories and empirical studies related to small group dynamics. Topics include the structure and functions of groups, decision-making, leadership, and communication.

Visual Arts, Humanities and Theatre

The Department of Visual Arts, Humanities and Theatre offers degree programs in visual arts, philosophy and religion, and theatre. Each program leads to either the Bachelor of Science or the Bachelor of Arts degree. It also offers basic survey and special topics courses in the humanities.

The department is actively involved with special programs and events, as well as various creative, expressive, and scholarly endeavors by faculty and students. Overall, it prepares students for positions of leadership by imparting knowledge, skills, and proficiencies which they may need to perform in their professions and function in their communities. The department provides students with a sound general education, specialized instruction, practical experience, and exposure to distinguished visual and performing artists, philosophers, and theologians.

Student majors are expected to elect courses from one of the degree programs within the department.

Faculty

Professors: DeCosmo, Janet L.;; LaBossiere, Michael; Matthews, Valencia E.; Wells, Luther D.

Associate Professors: Harding, Kimberly K.;; Liu, Nan; Owens, A. Nevell Williams, Derek; Wiltsher, Harris, II; Zhang, Li Ping

Assistant Professors: Arana-Downs, Ruben; Carnley, Edith; Duncan, Marci; Faison, Stephen; Muwwakkil, Zakiya; Roache, Aja; Scriven, Darryl; Sissle, Noble; Webb, James;

Visual Arts

The Visual Arts curricula is designed to give students a knowledgeable survey of each field and expose future artists and art academics to a variety of media and academic courses for the enrichment of their creative processes to build critical, historical, philosophical and productive perspectives and prepare them for successful careers in the fine arts. Our goal is to develop persons qualified for positions in fine art, art administration, art history, multimedia design, and related two and three dimensional art / design fields.

Students in the Visual Arts program are directed in studio production through a variety of courses in two and three-dimensional design, digital media and art history. Behind each work of art lies countless hours of research, critical reflection and the application of skills acquired in the classroom. The encouragement of a cross-pollination of traditional media and digital technology is strongly encouraged and often utilized.

Requirements for a Major

The Bachelor of Arts degree in Fine Arts requires a foreign language (12 hours) prepares students to pursue advanced degrees in art history and art criticism. The Bachelor of Science degree allows for more studio work to prepare students for professional careers and / or graduate school. All Fine Arts majors are required to have a formal exhibition of creative work in their last semester of residence. Students are expected to work closely with their advisor and the exhibition committee to fulfill this requirement.

Curriculum Guide

Bachelor of Arts in Fine Arts **Sem.**

Freshman Year	**Hrs.**
SLS 1101, First Year Experience-College Transition	2
ENC 1101, 1102 Freshman Communicative Skills I, II	6
MGF 1106 **o**r 1107 Liberal Arts Math I, II	6
ART 1201C, 1202C Fundamentals of Design I, II	6
ART 2300C, 2301C Drawing I, II	6
AMH 2091: Introduction to African-American History **or** AFA 3104: The African American Experience	3
ARH Art Appreciation	3
Total	**32**

Sophomore Year	
Humanities Electives (See list of approved courses)	3
Natural Science Electives (See list of approved courses)	6
SPN 1120 & SPN 1121 Elementary Spanish I & II w/Labs, or FRE 1120 &1121: Elementary French I & II w/Labs	8
ARH 2050, 2051 Art History I, II	6
Lower Level Art Electives	6
ART 2330C: Life Drawing	3
Total	**32**

Junior Year	
Social Science Elective (see list of approved courses)	3
Upper Level Art Electives	6
ARH 3610 American Art History **or** ARH 4410 Modern Art History	3
ARH 4614: African American Art History **or** ARH 4520: African Art History	3
Advanced Studio Electives	6
SPN 2220: Intermediate Spanish I w/Lab **or** FRE 2220: Intermediate French I w/Lab	4
Approved Minor Electives	6
Total	**31**

Senior Year	
ART 3948: Practicum of Art Merchandising I (Exhibition Planning & Design)	1
Upper Level Art Course Electives	9
Approved Minor Electives	12
ART 4915 Colloquium in Art	3
ART 4928 Advanced Workshop Senior Portfolio	3
Total	28
Total Hours	**120**

Bachelor of Science in Fine Arts

Freshman Year	**Sem. Hrs.**
SLS 1101: First Year Experience-College Transition	2
ENC 1101, 1102 Freshman Communicative Skills I, II	6
MGF 1106 or 1107 Liberal Arts Math I, II	6
ART 2000: Art Appreciation	3
AMH 2091 Introduction to African American History **or** AFA 3104 African American Experience	3
ART 1201C, 1202C Fundamentals of Design I, II	6
ART 2300C, 2301C Drawing I, II	6
Total	**32**

Sophomore Year Sem. Hrs.	
Humanities Elective (see list of approved courses)	3
Natural Science Electives	6
ARH 2050, 2051 Art History I, II	6
Lower Level Art Electives	12
ART 2330C: Life Drawing	3
Total	**30**

Junior Year	
Social Sciences Elective	3
Lower Level Art Electives	6
ARH 3610 American Art History **or** ARH 4410 Modern Art History ARH 4614: African-American Art History **or** ARH 4520: African Art History	3
Upper Level Art CoursesElectives) 9	
Approved Minor Electives	6
Total	**30**

Senior Year	
ART 3948: Practicum of Arts Merchandising I (Exhibition Planning & Design)	1
Upper Level Art Electives	9
Approved Minor Electives	12
ART 4915 Colloquium in Art	3
ART 4928: Advanced Workshop: Senior Portfolio	3
Total	**28**

Total Hours	**120**

Requirements for a Minor

All Fine Arts majors must declare a minor field of study outside of the Visual Arts Program. Fine Arts majors may choose to minor in Humanities, Graphic Design, Business Administration, or any other related field.

Minor in Fine Arts (for Non-Art Majors)

Students interested in having a minor of Fine Arts are allowed to be liberal with the coursework available. However it is recommended that after meeting with the area facilitator, students identify with one of the two suggested areas of application.

CONTEMPORARY STUDIO PRACTICES

Focuses on development of practical side of Visual Arts with more experiences in Studio Art coursework.

	Sem. Hrs.
ARH 2000: Art Appreciation	3
ART 1201: Fundamentals of Design I	3
ART 2300: Drawing I	3
Art Electives	9

APPLIED ART ADMINISTRATION

Focuses on the administrative side of Visual Arts with hands-on experiences centered the Foster-Tanner Fine Arts Gallery along with some studio art knowledge.

	Sem. Hrs.

ARH 2000 Art Appreciation	3
ART 1201 Fundamentals of Design I	3
ART 2300: Drawing I	3
ART 3947: Practicum in Art Management I	3
ARH 2050: Art History I	3
Art Electives (Students can select studio art, art history or a combination of both areas.)	3
Total	**18**

Philosophy and Religion

The program in Philosophy and Religion is designed to accommodate students who want to concentrate in either philosophy or religion. The program is designed to engage the student in an examination of the chief rival philosophical and religious approaches to life (including their historical, cultural, social and practical imports); to develop within the student an enlarged capacity for logical, reflective, coherent reasoning; and to encourage the student to work out a conceptual framework for his or her life commitment.

The program is preparatory for advanced training in other fields, such as law, education, international relations, statecraft, intellectual history, philosophy, religious studies and theology.

In addition to meeting the institutional undergraduate degree requirements, majors in the program are required to earn a minimum of thirty (30) semester hours of credit in philosophy and religion courses. The Philosophy major requires 21 hours in philosophy and nine (9) hours in religion. The Religion major requires 21 hours in religion and nine (9) hours in philosophy. No grade below "C" will be accepted in any major course.
Curriculum Guide

Bachelor of Arts in Philosophy and Religion

Freshman Year	**Sem. Hrs.**
SLS 1101: First Year Experience-College Transition	2
ENC 1101, 1102 Freshman Communication Skills I, II	6
MGF 1106: Liberal Arts Math I **&** MGF 107: Liberal Arts Math II	6
PHI 2010 Introduction to Philosophy	3
REL 2000 Introduction to Religion	3
AMH 2091 African American History **or** AFA 3104: The African American Experience	3
SPN 1120 and 1121 Elementary Spanish I, II (with labs) **or** FRE 1120 and 1121 Elementary French I, II (with labs)	8
Total	**31**

Sophomore Year	
Natural Science Electives (see approved list)	6
Philosophy **or** Religion Electives	6
SPN 2220: Intermediate Spanish I (with lab) **or** FRE 2220: Intermediate French I (with lab)	4
Social Science Elective (see approved list)	3
Humanities Electives (see approved list)	6
Free Elective	3
Total	**28**

Junior Year

Free Electives	12
Philosophy or Religion Electives	9
Courses in Minor	9
Total	**30**

Senior Year	**Sem. Hrs.**
Philosophy or Religion Electives	9
Courses in Minor	9
Free Electives	13
Total	**31**
Total Semester Hours	**120**

Bachelor of Science in Philosophy and Religion
The curriculum for the Bachelor of Science degree in Philosophy and Religion is the same as the requirements for the Bachelor of Arts, except that the student does not take hours in a foreign language and must make up the twelve (12) semester hours by taking those hours as free electives to replace the 12-hour foreign language requirement. All students are urged to earn the Bachelor of Arts degree.

Requirements for a Minor
A minor may be earned in Philosophy and Religion with the completion of eighteen (18) semester hours from courses listed under Philosophy and Religion.

Theatre

The belief that theatre students profit most by a basic understanding of the totality of theatre before pursuing specializations is reflected by the present curriculum requirements. The program in theatre offers pre-professional undergraduate preparation by combining acting, directing, designing and production with literary, historical, managerial and creative study of drama.

Requirements for a Major
The theatre program offers two degree options: the Bachelor of Arts and Bachelor of Science. Students may elect concentrations in either, Performance, Design/Technical Production, or Management and should declare such interest upon choosing theatre as a major. Students who have special interests will be advised of specific courses and electives to take and be mentored by faculty in the area of interest throughout their university tenure. Declaring an area of concentration will help the student to focus his/her interests while in the major and will ease the decision of an area of interest for the senior project capstone course. Most theatre majors receive the Bachelor of Arts. However, students who concentrate in Technical Theatre or Theatre Management may elect the Bachelor of Science degree. Each concentration requires the completion of a minimum of 55 semester hours of theatre courses and a minimum of eighteen (18) hours in an approved minor.

Requirements for a Minor
Students who minor in theatre must complete (with approval by the Theatre Advisor) sixteen (16) semester hours of lecture/studio courses and a minimum of two (2) hours of laboratory courses for a total of 18 hours.

All minors are expected to participate in all theatre activities unless otherwise exempted.

Curriculum Guide
Bachelor of Arts in Theatre

Freshman Year	**Sem. Hrs.**
Fall Semester	
SLS 1101: First Year Experience-College Transition	2
*ENC 1101 Freshman Communicative Skills I	3
Natural Science Elective (see approved list)	3
THE 2000 Introduction to Theatre	3
TPP 2120 Improvisations for the Theatre	2
TPP 2190L Introduction to Creative Work (1 hr./sem.)	1
TPP 1700 Voice and Diction for Theatre	2
Total	**16**

Freshman Year	
Spring Semester	
*ENC 1102 Freshman Communicative Skills II	3
*MGF 1106 Liberal Arts Math I	3
Natural Science Elective (see approved list)	3
ORI 2000: Oral Interpretation or ORI 4310: Readers Theatre	3
TPP 2500 Basic Principles of Movement	1
TPA 2210 Introduction to Stagecraft and Production Tech	3
TPA 2290: Theatre Production Tech	1
Total	**17**

Sophomore Year	
Fall Semester	
MGF 1107: Liberal Arts Math II	3
SPN 1120: Elementary Spanish I w/ lab **or**	
FRE 1120: Elementary French I w/lab	4
TPP 2110 Elements of Acting	3
THE 3112 Theatre History I	3
TPA 3200L Production Lab (1 hr./sem.)	1
AMH 2091 Introduction to African-American History or AFA 3104 The African-American Experience	3
Total	**17**

Sophomore Year	
Spring Semester	
SPN 1121: Elementary Spanish II w/lab **or**	
FRE 1121: Elementary French II w/lab	4
* Social Science Elective (see approved list)	3
TPP 2111: Advanced Acting	3
THE 3113 Theatre History II	3
TPA 3200L Production Lab (1 hr./sem.)	1
Total	**14**

Junior Year	
Fall Semester	
SPN 2220: Intermediate Spanish I w/lab **or**	
FRE 2220: Intermediate French I w/lab	4
THE 2300 Critical Analysis of Drama	3
TPA 3230 Costume Design	3
TPA 3200L Production Lab (1 hr./sem.)	1
THE 3235: Contemporary Black Theatre	3
Total	**14**

Junior Year	
Spring Semester	
Humanities Elective (see approved list)	3
TPP 3310 Fundamentals of Play Direction	3
TPA 3200L Production Lab (1 hr./sem.)	1
General Education Elective	3
XXX XXXX Minor Elective	6
Total	**16**

Senior Year	
Fall Semester	
TPA 4060 Scene Design	3
TPA 3200L Production Lab (1 hr./sem.)	1
XXX XXXX Theatre Elective	3
XXX XXXX Minor Elective	6
Total	**13**
Spring Semester	
THE 4908 Senior Project	3
TPA 4400 Theatre Management	3
THE 4942 Arts/Theatre Management	1
XXX XXXX Minor Elective	6
Total	**13**
Total Hours	**120**

Bachelor of Science in Theatre

Freshman Year	
Fall Semester	
SLS 1101: First Year Experience-College Transition	2
*ENC 1101 Freshman Communicative Skills I	3
Natural Science Elective (see approved list)	3
THE 2000 Introduction to Theatre	3
TPP 2120 Improvisations for the Theatre	2
TPP 2190L Introduction to Creative Work (1 hr./sem.)	1
TPP 1700 Voice and Diction	2
Total	**16**

Freshman Year	
Spring Semester	
*ENC 1102 Freshman Communicative Skills II	3
*MGF 1106 Liberal Arts Math I	3
Natural Science Elective (see approved list)	3
ORI 2000 Oral Interpretation or ORI 4310 Readers Theatre	3
TPP 2500 Basic Principles of Movement	1
TPA 2210 Introduction to Stagecraft and Production Tech	3
TPA 2290L Theatre Production Lab (1 hr./sem.)	1
Total	**17**

Sophomore Year	
Fall Semester	
MGF 1107 Liberal Arts Math II	3
TPP 2110 Elements of Acting	3
THE 3112 Theatre History I	3
TPA 3200L Production Lab	1
Humanities Elective (see approved list)	3
AMH 2091 Introduction to African-American History **or** AFA 3104 The African-American Experience	3
Total	**16**

Sophomore Year
Spring Semester

Social Science Elective (see approved list)	3
General Education Elective	3
THE 3113 Theatre History II	3
TPP 2111 Advanced Acting	3
TPA 3200L Production Lab (1 hr./sem.)	1
Total	**13**

Junior Year
Fall Semester

TPA 3230 Costume Design	3
THE 2300 Critical Analysis of Drama	3
TPA 3200L Production Lab (1 hr./sem.)	1
XXX XXXX Minor Elective	6
THE 3235 Contemporary Black Theatre	3
Total	**16**

Junior Year

Spring Semester	**Sem. Hrs.**
TPP 3310 Fundamentals of Play Direction	3
TPA 3200L Production Lab (1 hr./sem.)	1
XXX XXXX Theatre/Computer Elective	6
XXX XXXX Minor Elective	3
Total	**13**

Senior Year
Fall Semester

TPA 4060 Scene Design	3
TPA 4400 Theatre Management	3
THE 4942 Arts/Theatre Management Practicum	1
XXX XXXX Minor Elective	6
Total	**16**

Spring Semester

THE 4908 Senior Project	3
TPA 3200L Production Lab (1 hr./sem.)	1
XXX XXXX Theatre/Computer Elective	6
XXX XXXX Minor Elective	3
Total	**13**
Total Hours	**120**

Humanities Minor

Students must complete eighteen (18) semester hours in humanities. In consultation with an advisor, a student may plan a program consistent with his or her interest, ability, and future educational goals.

	Sem. Hrs.
Allied Courses	18
Total	**18**

Allied Courses which may be chosen:

Humanities

HUM 2210: Historical Survey I	3
HUM 2230: Historical Survey II	3
HUM 3401: Asian Humanities	3
HUM 3425: African Humanities	3

Literature

LIT 2110 An Approach to Literature I	3
LIT 2120 An Approach to Literature II	3
AML 2010 American Literature I	3
AML 3122 American Literature II	3
ENL 3013 English Literature I	3
ENL 3034 English Literature II	3

Visual Arts

ARH 2000 Art Appreciation	3
ARH 2050 Art History I	3
ARH 2051 Art History II	3
ARH 3610 American Art	3
ARH 4410 Modern Art	3
ARH 4520 African Art	3
ARH 4614 African American Art	3

Music

MUL 2111 Introduction to Music I	3
MUL 2112 Introduction to Music II	3
MUH 3116 Jazz History	3
MUH 3211 History of Music I	3
MUH 3212 History of Music II	3
MUH 3561 African American Music	3

Philosophy and Religion

PHI 2010 Introduction to Philosophy	3
PHI 3601 Ethics	3
PHI 3930 Special Topics in Philosophy	3
PHH 3100 Ancient & Medieval Philosophy	3
PHH 3400 Modern Philosophy	3
PHH 3600 Contemporary Philosophy	3
PHM 3120 Contemporary Black Social Philosophy	3
REL 2000 Introduction to Religion	3
REL 2135 Black Religion in America	3
REL 3383 Caribbean Religion and Culture	3
REL 3936 Special Topics in Religion	3
REL 3156 Religion Personality & Race	3
REL 3145 Women in Religion	3
REL 2240 Introduction to the New Testament	3
REL 2210 Introduction to the Old Testament	3

Theatre

THE 2000: Introduction to Theatre	3
THE 2300: Critical Analysis of Drama	3
THE 3112: Theatre History I	3
THE 3113: Theatre History II	3
THE 3235: Contemporary Black Theatre	3
Applied Social Science	3
Criminal Justice Program	3
History Program	3
Political Science Program	

Public Administration Program

Course Descriptions

Master of Applied Social Science (M.A.S.S.) with Concentrations in History, Political Science, Sociology, Public Administration and Criminal Justice.

The following Departments in the College of Arts and Sciences participate in the interdisciplinary degree, Master of Applied Social Science (M.A.S.S.): History, Political Science, Public Administration, and Criminal Justice.

Courses are available in the M.A.S.S. program from the disciplines of political science, public administration, history, and criminal justice.

The unique feature of this applied, interdisciplinary program is its flexibility. Building upon a required core of three courses (9 semester hours), the student, in consultation with an advisor, may design the remainder of the program to address his/her own unique interests. The degree is designed for those who wish to pursue further graduate work in the social sciences and for those who wish to work immediately following completion of the M.A.S.S. degree.

For the full-time student, the course of study will likely span two semesters plus one summer, totaling 33 hours. Some students may be required to take several prerequisites before commencing with their academic program. The following is an outline of the degree programs:

Core Courses Required of All Students (9 Semester Hours)

Interdisciplinary Social Science Seminar, (ISS 5939); Social Science Research, (ISS 6305), and Statistics for Public Managers, (PAD 5701) or Statistics for the Social Sciences (ISS 5316). All core courses must be completed with a grade of "B" or higher.

Discipline Courses (18 Semester Hours)

Students are required to take six courses (18 hours) in their subject area concentration. Courses may be selected from one the following disciplines: (1) History; (2) Political Science; (3) Public Administration; and (4) Criminal Justice.

Those students whose undergraduate degrees are in areas outside their chosen area of concentration may be required to take designated undergraduate courses to prepare them for entrance into the M.A.S.S. program. The chair of the department of the major area and the graduate coordinator of the program shall make such a determination. Prerequisites for History, Political Science, Public Administration, and Criminal Justice are as follows:

Political Science

- Introduction to Political Science

- American National Government

History

-Nature of History

- Historiography

Criminal Justice

- Criminological Theory

- Research Methods

Public Administration

- Intro. Public Administration

- Budget and Fiscal Mgt.

Entrance Requirements

Entrance requirements for the M.A.S.S. Program include:

(1) A baccalaureate degree from an accredited institution and (2) a "B" average in the last 60 semester hours of course work or a score of 300 or better (verbal and quantitative only) on the Graduate Record Exam (GRE).

Special Students: Special students who do not meet the qualifications listed above are not permitted to take more than twelve (12) semester hours until they have successfully completed the GRE or been admitted to regular status under the 10% exception rule.

One special student may be admitted to regular status for every ten (10) fully qualified students entering the program. The selection of special students for regular status will be determined by the GPA in the twelve (12) hours taken, the undergraduate GPA, and other factors determined by the Admissions Committee.

Fully admitted students may receive credit for up to six (6) graduate semester hours of transferred courses from another institution. The Chair and/or Coordinator of the M.A.S.S. Program will determine all approved transferred credit hours.

NOTE: A cumulative GPA of 3.0 must be maintained regardless of course/ credit hour load. A student may not earn more than two (2) C's; otherwise the student will be dropped from the program. All students must take the GRE within sixty (60) days of admittance into the program. Failure to comply will result in the student not being able to register for classes the next semester.

Internship and Thesis

All students must complete an approved internship or a thesis to qualify for graduation.

Internships will be with a government agency - local, state, federal - or with a private concern. Internships should be related as nearly as possible to the student's major area and must have the prior approval of the coordinator and the professor supervising the internships.

The internship should be a new professional experience for the student. If a proposed internship does not violate internship criteria, a student may intern in another department of the agency where he/she is employed. However, the internship must not be

simply a continuation of regular duties.

The appropriateness of all internships will be determined on an individual basis by the chair of the department of the student's major and the coordinator of the M.A.S.S. Program.

A student wishing to write a thesis must select a committee of at least three faculty members. The committee chair must be from the student's major emphasis; the second member must be from the area of the concentration; and the third member may be from outside the student's area of concentration.

NOTE: For additional information and requirements pertaining to the internship, please refer to the internship packet available from the Coordinator of the M.A.S.S. Program.

Political Science Program Courses

Fall Semester	
ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
POS 5208 Psychology of Political Behavior	3
POS 5117 Prob. State & Local Govt.	3
Total	**12**

Spring Semester	
PAD 5701 Stats. for Public Managers	3
POS 6427 Seminar in Legis. & Legis.	3
POS 6247 Seminar in Political Science	3
POS 5277 Elect. & Political Participation	3
Total	**12**

Summer Semester	
ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
POS 5932 Selected Topic in Political Science	3
Total	**6 or 9**

Public Administration Program Courses

Fall Semester	
ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
PAD 5417 Prob. in Pub. Person Adm.	3
PAD 6227 Seminar Pub. Finance Adm.	3
Total	**12**

Spring Semester	
PAD 5701 Stats. for Public Managers	3
PAD 6035 Seminar in Adm. Politics	3
PAD 5025 Public Management	3
PAD 5306 Problem of Public Analysis	3
Total	**12**

Summer Semester	
ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
PAD 6060 Seminar in Public Mgmt.	3
Total	**6 or 9**

History Program Courses

Fall Semester	
ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
AMH 5930 Selected Topics in US History	3
AMH 5578 Problems in African Am. His.	3
Total	**12**

Spring Semester	
ISS 5316 Social Science Statistics	3
AFS 5151 Life & Culture of Sub Africa	3
AMH 5409 Prob. History of the South	3
AMH 5116 Civil War Reconstruction	3
Total	**12**

Summer Semester	
ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
HIS 5209 Contemporary Problems or	
AMH 5932 Seminar US History	3
Total	**6 or 9**

Criminal Justice Program

Fall Semester	
ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
CCJ 5608 Crim. Theory & Practice	3
CCJ 5446 Correctional Mgt.	3
Total	**12**

Spring Semester	
ISS 5316 Social Science Statistics	3
CCJ 5910 Ind. Res. In Corrections	3
CCJ 5940 Special Topics	3
CCJ 5022 Juvenile Justice	3
Total	**12**

Summer Semester	
CCJ 5941 Special Topics II	3
ISS 6942 Internship or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
CCJ 5669 Race, Class, Gender & Crime	3
Total	**6 or 9**

Course Descriptions

AFS 5151 Life and Culture of Sub-Sahara Africa (3) Overview from ancient times to present, emphasizing cultural traditions. **AMH 5116 Civil War Reconstruction** (3) Intensive analysis of recent interpretation of causes of Civil War and problems of Reconstruction. Oral and written reports on selected topics required. **AMH 5392 Seminar in U.S. Social History** (3) Selected topics in American social history, emphasizing conflicting interpretations. **AMH 5409 Problems in History of South** (3) A critical analysis of selective issues which influenced development of Southern history from Jamestown to present.
AMH 5578 Problems in African American History (3) Select-

ed topics in black history with emphasis on historiography and interpretations.

AMH 5579 Problems in American Constitutional History (3) Survey of origin, fundamental concepts, and principles of constitutional history. Identification and development of research topics. All students research and write substantial papers based largely on primary sources.

AMH 5930 Selected Topics in United States History (3) Emphasis on critical problems in American history, research and interpretations.

CCJ 5020 Juvenile Justice (3) Examines the various approaches to juvenile justice policies, programs and services. Also examines the array of issues central to prevention, intervention, diversion and rehabilitation of juvenile offenders.

CCJ 5446 Correctional Management (3) An overview of correctional management including history, increases in confinement, decline of community based corrections, revival of capital punishment, models in correctional management, and characteristics of correctional institutions. Comparison of traditional contemporary correctional systems will be emphasized.

CCJ 5457 Court Administration (3) This course introduces students to the rudiments of court administration. With a concern for the practical aspects of court administration, the course focuses on analysis of the administrative functions of the court, the delegation of administrative duties, the adversarial system, and other concepts relating to the court as an institution of government. Management functions, management styles, and leadership will also be explored to understand the dynamics of organizational change in courts.

CCJ 5608 Criminology Theory and Practice (3) Historical and contemporary examination of the major theories of criminology. Emphasis is placed upon critical analysis and practical applicability of theories to criminal justice policies.

CCJ 5659 Race, Class, Gender and Crime (3) The purpose of this course is to evaluate and provide a better understanding of women and crime. This course will attempt to create an understanding of women within the criminal processing system under the roles in which they encounter. This course will take a contextual approach to evaluate women in a broader social, cultural, economic and political framework.

CCJ 5910 Independent Research in Criminal Justice (3) Presents, explains, and explores viable solutions to contemporary issues facing the criminal justice systems in law enforcement, courts, prosecution, sentencing, criminal law, etc.

CCJ 5934 Contemporary Issues in Criminal Justice (3) Presents, explains, and explores contemporary issues facing the criminal justice system in law enforcement, courts, prosecution, sentencing, criminal law, etc.

CCJ 5940 Special Topics (3)

CCJ 5941 Special Topics II (3)

CCJ 6974 Internship and Internship Paper (6) Supervised graduate internship and internship paper for master of applied social science program.

HIS 5209 Contemporary Problems (3) Investigation of selected problems faced by Europe, Asia, and Africa since World War II.

HIS 6971 Masters Thesis (6) Research and defense of project selected by student with approval of thesis committee.

ISS 5316 Advanced Applications of Statistics & Research (3) – Graduate research and statistics skill development with computer applications leading to mastery of data reduction and analytic techniques.

ISS 5939 Interdisciplinary Seminar of Applied Social Science (3) – Course taught in the beginning semester of each student's work. Utilizes the approach which produces the convergence of social and behavioral science disciplines.

ISS 6305 Social Science Research Methods (3) Fundamental principles of social science research and related research design. The course is structured to develop students' abilities to think clearly, critically, and logically about social science issues through the scientific evaluation of empirical issues and evidence.

ISS 6942 Internship and Internship Paper (6) Supervised graduate internship and internship paper for master of applied social science program.

PAD 5025 Public Management: Practice and Problems (3) Meaning, content, significance, and evolutionary development of public administration; administration and politics; patterns of management; and legal bases of administration, accountability, and administrative responsibility.

PAD 5306 Problems of Public Policy Analysis (3) Problems related to approaches, predictions, and application of public policy analysis in terms of instruments of policy development and selected areas of policy.

PAD 5417 Problems of Public Personnel Administration (3) Basic problems encountered by government executives in recruiting, maintaining, and developing personnel, such as career development, leadership, motivation, and employee relations.

PAD 5701 Statistics for Public Managers (3) This course provides knowledge of data analysis as part of the scientific method of research. Students will conceptualize the principles of quantitative and qualitative data analysis and apply these principles to data analysis in research and practice. Practical knowledge and application of descriptive and inferential are anticipated.

PAD 6035 Seminar in Administrative Politics (3) Analysis of processes by which and through which administrative agencies determine and enforce policy in terms of legal and political considerations, as well as in terms of behavioral theory.

PAD 6060 Seminar in Public Management (3) Major theoretical concepts in public administration and their relationship to selected aspects of public policy, as well as their application to behavior of administrators in developing industrialized government systems.

PAD 6227 Seminar in Public Financial Administration (3) Review of administration, organization, methods, problems, and policy implications of execution of governmental fiscal policies through budgetary formulation and revenue collection.

POS 5117 Problems in State and Local Government (3) Identification and analysis of the basic problems of state and local government. Major emphasis on the current problems of functional significance.

POS 5208 Psychology of Political Behavior (3) Prereq: Role of psychological constructs and theories in political explanation; analysis of research with such topics as the effects of psychological factors on attitudes, efficacy, leadership, loyalty, participation, political change, and policy issues.

POS 5277 Elections and Political Participation (3) Identify problems confronting party organizations, the causes of those problems, and appropriate strategies for political campaigns.

POS 5932 Selected Topic in Political Science (3) Theory and research on advanced selected topics in political science, public policy, and/or public administration.

POS 6247 Seminar in Political Socialization (3) Analysis and investigation of acquisition of political orientations, as well as effec-

tuation process under different cultural conditions; attention given to related design and contemporary findings.

POS 6427 Seminar in Legislatures and Legislation (3) Analysis of recent research in the legislative process, involving both substantive and methodological aspects, as well as readings and research reports on selected problems of the legislative process and legislative behavior.

Applied Social Science

Political Science Program

Public Administration Program

Course Descriptions

Master of Applied Social Science (M.A.S.S.) with Concentrations in History, Political Science, Sociology, Public Administration and Criminal Justice.

The following Departments in the College of Arts and Sciences participate in the interdisciplinary degree, Master of Applied Social Science (M.A.S.S.).

History, Political Science, Public Administration, and Criminal Justice

Courses are available in the M.A.S.S. program from the disciplines of political science, public administration, history, and criminal justice.

The unique feature of this applied, interdisciplinary program is its flexibility. Building upon a required core of three courses (9 semester hours), the student, in consultation with an advisor, may design the remainder of the program to address his/her own unique interests. The degree is designed for those who wish to pursue further graduate work in the social sciences and for those who wish to work immediately following completion of the M.A.S.S. degree.

For the full-time student, the course of study will likely span two semesters plus one summer, totaling 33 hours. Some students may be required to take several prerequisites before commencing with their academic program. The following is an outline of the degree programs:

Core Courses Required of All Students (9 Semester Hours)

Interdisciplinary Social Science Seminar, (ISS 5939); Social Science Research, (ISS 6305), and Statistics for Public Managers, (PAD 5701) or Statistics for the Social Sciences (ISS 5316). All core courses must be completed with a grade of "B" or higher.

Discipline Courses (18 Semester Hours)

Students are required to take six courses (18 hours) in their subject area concentration. Courses may be selected from one the following disciplines: (1) History; (2) Political Science; (3) Public Administration; and (4) Criminal Justice.

Those students whose undergraduate degrees are in areas outside their chosen area of concentration may be required to take designated undergraduate courses to prepare them for entrance into the M.A.S.S. program. The chair of the department of the major area and the graduate coordinator of the program shall make such a determination. Prerequisites for History, Political Science, Public Administration, and Criminal Justice are as follows:

Political Science

- Introduction to Political Science

- American National Government

History

-Nature of History

- Historiography

Criminal Justice

- Criminological Theory

- Research Methods

Public Administration

- Intro. Public Administration

- Budget and Fiscal Mgt.

Entrance Requirements

Entrance requirements for the M.A.S.S. Program include:

(1) A baccalaureate degree from an accredited institution and (2) a "B" average in the last 60 semester hours of course work or a score of 300 or better (verbal and quantitative only) on the Graduate Record Exam (GRE).

Special Students: Special students who do not meet the qualifications listed above are not permitted to take more than twelve (12) semester hours until they have successfully completed the GRE or been admitted to regular status under the 10% exception rule.

One special student may be admitted to regular status for every ten (10) fully qualified students entering the program. The selection of special students for regular status will be determined by the GPA in the twelve (12) hours taken, the undergraduate GPA, and other factors determined by the Admissions Committee.

Fully admitted students may receive credit for up to six (6) graduate semester hours of transferred courses from another institution. The Chair and/or Coordinator of the M.A.S.S. Program will determine all approved transferred credit hours.

NOTE: A cumulative GPA of 3.0 must be maintained regardless of course/ credit hour load. A student may not earn more than two (2) C's; otherwise the student will be dropped from the program. All students must take the GRE within sixty (60) days of admittance into the program. Failure to comply will result in the student not being able to register for classes the next semester.

Internship and Thesis

All students must complete an approved internship or a thesis to qualify for graduation.

Internships will be with a government agency - local, state, federal - or with a private concern. Internships should be related as nearly as possible to the student's major area and must have the

prior approval of the coordinator and the professor supervising the internships.

The internship should be a new professional experience for the student. If a proposed internship does not violate internship criteria, a student may intern in another department of the agency where he/she is employed. However, the internship must not be simply a continuation of regular duties.

The appropriateness of all internships will be determined on an individual basis by the chair of the department of the student's major and the coordinator of the M.A.S.S. Program.

A student wishing to write a thesis must select a committee of at least three faculty members. The committee chair must be from the student's major emphasis; the second member must be from the area of the concentration; and the third member may be from outside the student's area of concentration.

NOTE: For additional information and requirements pertaining to the internship, please refer to the internship packet available from the Coordinator of the M.A.S.S. Program.

Political Science Program Courses
Fall Semester

ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
POS 5208 Psychology of Political Behavior	3
POS 5117 Prob. State & Local Govt.	3
Total	**12**

Spring Semester

PAD 5701 Stats. for Public Managers	3
POS 6427 Seminar in Legis. & Legis.	3
POS 6247 Seminar in Political Science	3
POS 5277 Elect. & Political Participation	3
Total	**12**

Summer Semester

ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
POS 5932 Selected Topic in Political Science	3
Total	**6 or 9**

Public Administration Program Courses
Fall Semester

ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
PAD 5417 Prob. in Pub. Person Adm.	3
PAD 6227 Seminar Pub. Finance Adm.	3
Total	**12**

Spring Semester

PAD 5701 Stats. for Public Managers	3
PAD 6035 Seminar in Adm. Politics	3
PAD 5025 Public Management	3
PAD 5306 Problem of Public Analysis	3
Total	**12**

Summer Semester

ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
PAD 6060 Seminar in Public Mgmt.	3
Total	**6 or 9**

History Program Courses
Fall Semester

ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
AMH 5930 Selected Topics in US History	3
AMH 5578 Problems in African Am. His.	3
Total	**12**

Spring Semester

ISS 5316 Social Science Statistics	3
AFS 5151 Life & Culture of Sub Africa	3
AMH 5409 Prob. History of the South	3
AMH 5116 Civil War Reconstruction	3
Total	**12**

Summer Semester

ISS 6942 Intern or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
HIS 5209 Contemporary Problems or AMH 5932 Seminar US History	3
Total	**6 or 9**

Criminal Justice Program
Fall Semester

ISS 6305 Social Sci. Research Methods	3
ISS 5939 Interdisciplinary Seminar	3
CCJ 5608 Crim. Theory & Practice	3
CCJ 5446 Correctional Mgt.	3
Total	**12**

Spring Semester

ISS 5316 Social Science Statistics	3
CCJ 5910 Ind. Res. In Corrections	3
CCJ 5940 Special Topics	3
CCJ 5022 Juvenile Justice	3
Total	
12	

Summer Semester

CCJ 5941 Special Topics II	3
ISS 6942 Internship or HIS 6971 Thesis	6
ISS 5939 Interdisciplinary Seminar	3
CCJ 5669 Race, Class, Gender & Crime	3
Total	**6 or 9**

Course Descriptions

AFS 5151 Life and Culture of Sub-Sahara Africa (3) Overview from ancient times to present, emphasizing cultural traditions.
AMH 5116 Civil War Reconstruction (3) Intensive analysis of recent interpretation of causes of Civil War and problems of Reconstruction. Oral and written reports on selected topics required.
AMH 5392 Seminar in U.S. Social History (3) Selected topics in American social history, emphasizing conflicting interpretations.

AMH 5409 Problems in History of South (3) A critical analysis of selective issues which influenced development of Southern history from Jamestown to present.

AMH 5578 Problems in African American History (3) Selected topics in black history with emphasis on historiography and interpretations.

AMH 5579 Problems in American Constitutional History (3) Survey of origin, fundamental concepts, and principles of constitutional history. Identification and development of research topics. All students research and write substantial papers based largely on primary sources.

AMH 5930 Selected Topics in United States History (3) Emphasis on critical problems in American history, research and interpretations.

ANT 5702 App of Anthropology (3)

CCJ 5020 Juvenile Justice (3) Examines the various approaches to juvenile justice policies, programs and services. Also examines the array of issues central to prevention, intervention, diversion and rehabilitation of juvenile offenders.

CCJ 5446 Correctional Management (3) An overview of correctional management including history, increases in confinement, decline of community based corrections, revival of capital punishment, models in correctional management, and characteristics of correctional institutions. Comparison of traditional contemporary correctional systems will be emphasized.

CCJ 5457 Court Administration (3) This course introduces students to the rudiments of court administration. With a concern for the practical aspects of court administration, the course focuses on analysis of the administrative functions of the court, the delegation of administrative duties, the adversarial system, and other concepts relating to the court as an institution of government. Management functions, management styles, and leadership

will also be explored to understand the dynamics of organizational change in courts.

CCJ 5608 Criminology Theory and Practice (3) Historical and contemporary examination of the major theories of criminology. Emphasis is placed upon critical analysis and practical applicability of theories to criminal justice policies.

CCJ 5659 Race, Class, Gender and Crime (3) The purpose of this course is to evaluate and provide a better understanding of women and crime. This course will attempt to create an understanding of women within the criminal processing system under the roles in which they encounter. This course will take a contextual approach to evaluate women in a broader social, cultural, economic and political framework.

CCJ 5910 Independent Research in Criminal Justice (3) Presents, explains, and explores viable solutions to contemporary issues facing the criminal justice systems in law enforcement, courts, prosecution, sentencing, criminal law, etc.

CCJ 5934 Contemporary Issues in Criminal Justice (3) Presents, explains, and explores contemporary issues facing the criminal justice system in law enforcement, courts, prosecution, sentencing, criminal law, etc.

CCJ 5940 Special Topics (3)

CCJ 5941 Special Topics II (3)

CCJ 6974 Internship and Internship Paper (6) Supervised graduate internship and internship paper for master of applied social science program.

HIS 5209 Contemporary Problems (3) Investigation of selected problems faced by Europe, Asia, and Africa since World War II.

HIS 6971 Masters Thesis (6) Research and defense of project selected by student with approval of thesis committee.

ISS 5316 Advanced Applications of Statistics & Research (3) – Graduate research and statistics skill development with computer applications leading to mastery of data reduction and analytic techniques.

ISS 5939 Interdisciplinary Seminar of Applied Social Science (3) – Course taught in the beginning semester of each student's work. Utilizes the approach which produces the convergence of social and behavioral science disciplines.

ISS 6305 Social Science Research Methods **(3) Fundamental** principles of social science research and related research design. The course is structured to develop students' abilities to think clearly, critically, and logically about social science issues through the scientific evaluation of empirical issues and evidence.

ISS 6942 Internship and Internship Paper (6) Supervised graduate internship and internship paper for master of applied social science program.

PAD 5025 Public Management: Practice and Problems (3) Meaning, content, significance, and evolutionary development of public administration; administration and politics; patterns of management; and legal bases of administration, accountability, and administrative responsibility.

PAD 5306 Problems of Public Policy Analysis (3) Problems related to approaches, predictions, and application of public policy analysis in terms of instruments of policy development and selected areas of policy.

PAD 5417 Problems of Public Personnel Administration (3) Basic problems encountered by government executives in recruiting, maintaining, and developing personnel, such as career development, leadership, motivation, and employee relations.

PAD 5701 Statistics for Public Managers (3) This course provides knowledge of data analysis as part of the scientific method of research. Students will conceptualize the principles of quantitative and qualitative data analysis and apply these principles to data analysis in research and practice. Practical knowledge and application of descriptive and inferential are anticipated.

PAD 6035 Seminar in Administrative Politics (3) Analysis of processes by which and through which administrative agencies determine and enforce policy in terms of legal and political considerations, as well as in terms of behavioral theory.

PAD 6060 Seminar in Public Management (3) Major theoretical concepts in public administration and their relationship to selected aspects of public policy, as well as their application to behavior of administrators in developing industrialized government systems.

PAD 6227 Seminar in Public Financial Administration (3) Review of administration, organization, methods, problems, and policy implications of execution of governmental fiscal policies through budgetary formulation and revenue collection.

POS 5117 Problems in State and Local Government (3) Identification and analysis of the basic problems of state and local government. Major emphasis on the current problems of functional significance.

POS 5208 Psychology of Political Behavior (3) Prereq: Role of psychological constructs and theories in political explanation; analysis of research with such topics as the effects of psychological factors on attitudes, efficacy, leadership, loyalty, participation, political change, and policy issues.

POS 5277 Elections and Political Participation (3) Identify problems confronting party organizations, the causes of those problems, and appropriate strategies for political campaigns.

POS 5932 Selected Topic in Political Science (3) Theory and research on advanced selected topics in political science, public policy, and/or public administration.

POS 6247 Seminar in Political Socialization (3) Analysis and investigation of acquisition of political orientations, as well as effectuation process under different cultural conditions; attention given to related design and contemporary findings.

POS 6427 Seminar in Legislatures and Legislation (3) Analysis of recent research in the legislative process, involving both substantive and methodological aspects, as well as readings and research reports on selected problems of the legislative process and legislative behavior.

FAMU-FSU College of Engineering

Dean: Yaw Yeboah

Associate Deans: Reginald Perry, Braketta Ritzenthaler

The accelerating pace of technological developments has created an ever-increasing demand for highly qualified, professional engineers. Expanding population and corresponding demands for new products, structures, designs, and improved services have posed new challenges to present and future engineers. Accordingly, the College of Engineering, through its curricula, strives to educate and train engineers to determine the best solutions to the challenges facing society today.

It is expected that students who conscientiously apply themselves and successfully complete one of the broad engineering programs will not only be technically trained, but also humanistically and socially educated, and thereby be well prepared to make a significant contribution to society.

An engineering student can pursue any one of several career plans, according to personal ambitions, interest, and abilities. The student may pursue the Bachelor of Science degree or an advanced research-oriented graduate program leading to the Master of Science or Doctor of Philosophy degrees.

History

The FAMU–FSU College of Engineering was authorized by the 1982 legislature as a joint program between Florida Agricultural and Mechanical University and Florida State University. The joint nature of the college allows a student to register at either Florida A&M University or Florida State University and receive a degree in any of the college's degree programs. A student entering the college applies for admission through one of the two universities and must satisfy the admission and general degree requirements of that university. The degree is granted through the College of Engineering by the university where the student is registered while completing upper-division studies. All College of Engineering classrooms and administrative and faculty offices are housed in a modern engineering complex located at 2525 Pottsdamer Street adjacent to Innovation Park.

Mission

The mission of the college is to provide an innovative academic program of excellence at the undergraduate and graduate levels judged by the highest standards in the field and recognized by national peers; to attract and produce greater numbers of women and minorities in professional engineering, engineering teaching, and research; and to attain national and international recognition of the college through the educational and research achievements and the professional service of its faculty and students.

Programs and Degrees

The College offers professional programs of study leading to the bachelor of science (B.S.), the master of science (M.S.), and doctor of philosophy (Ph.D). in chemical, civil, electrical, industrial, and mechanical engineering; a bachelor of science in computer engineering; and a master of science and doctor of philosophy in biomedical engineering. All undergraduate degree programs are accredited by the Engineering Accreditation Commission of ABET, Inc http://www.abet.org. More complete information can be found at the College Web site and in the department sections of this Catalog.

Facilities

The college occupies over 200,000 square feet of classroom, offices, and laboratory space in a building complex especially designed for engineering education. It is located off the main campus of each university in an area adjacent to Innovation Park, which also houses the National High Magnetic Field Laboratory (NHMFL), the Center for Advanced Power Systems, and other university, public, and private organizations engaged in research, development, and clean industry operations. The college operates for the common use of all programs a computing facility, a library and reading room, and a machine shop. In addition, each department in the college operates specialized laboratories for teaching and research. Please refer to each department's chapter for additional information on these specialized facilities.

Libraries

The main book and journal collections for FAMU engineering students are housed in the Coleman Library at Florida A&M University. The college also maintains an engineering library and reading room that functions as a satellite library for engineering students.

Computing Facilities

Students have access to many and various computing resources at the College of Engineering. Due to the unique requirements of engineering computing and the off-campus location of the college, the college is relatively autonomous in providing service to engineering students.

The college has over 2800 computing devices connected to its local network, managed by the college's Communication and Multimedia Services (CMS) unit. CMS continues to evaluate and upgrade computer workstation hardware as the computational needs grow. Computers connect to the college's gigabit fiber-optic backbone via 100Mbps Ethernet connections. One of the computer labs is open 24 hours a day when classes are in session; the other three are used as classrooms. The college also provides computing facilities in the public areas that are available to students 24 hours a day, 365 days a year. Available software includes major general-purpose packages as well as special applications oriented toward particular engineering disciplines.

In addition to local Ethernet network, the college provides wireless LAN services with access points throughout the facilities for students who may want to use their own laptops to connect to the college's computing resources.

The college has state-of-the-art instructional classrooms. The multimedia equipment in every classroom generally includes LCD projector, overhead projector and/or document camera, VCR, and

sound system. The ceiling-mounted LCD projector is used for large-scale projection, linked to the PC at the instructor's console. Multiple rooms are used for distance learning and the Florida Engineering Education Delivery System (FEEDS). Multi-point IP videoconferencing is also available.

Scholarships

Thanks to the donations from industry partners, educational programs, and private donors, the College of Engineering is able to offer a limited number of scholarships to qualified engineering students. Students can obtain scholarship information from the Office of Associate Dean for Student Affairs and Curriculum or by visiting the college's web site.

Career Services

The College provides a Career Center Office for students to obtain career related services. In addition, the University maintains a satellite office in the College Career Center to assist students in career and employment advising, including resume, cover letter and personal statement writing, internship/co-op opportunities and permanent job searches nationwide. Career Center staff also aid in preparing engineering students for interviews and presentations at career expositions, such as Engineering Day.

Requirements for Admission and Retention in an Engineering Major

Engineering is a demanding discipline, and students majoring in engineering must follow a required sequence of courses and achieve a high level of proficiency. In accordance with criteria of the Engineering Accreditation Commission of ABET, Inc., http://www.abet.org, all engineering students are subject to a uniform set of academic requirements agreed to by both FAMU and FSU, in addition to any other academic requirements stated in the respective university catalog and bulletin. These requirements have been established to ensure that program graduates receive a quality education, while making progress toward satisfying engineering major degree requirements. They are reviewed and revised as needed by the College of Engineering.

Pre-Engineering Program Requirements

All first-year engineering students (first year in college or first-year transfer students) are initially coded as pre-engineering students until they satisfy the following set of pre-engineering requirements:

Students must have an overall GPA of 2.0 or better and achieve a grade of 'C' or better, from any institution attended, in First Year Engineering Laboratory, Calculus I, Calculus II, General Chemistry I and General Physics I to be admitted to an engineering major. Intended chemical engineering students shall replace General Physics I with General Chemistry II. A single repeated attempt in only one of the five (5) courses listed above with no more than one grade of "C-" is allowed. Transfer students may receive an exemption from First-Year Engineering Laboratory if they have completed all of the other courses listed above prior to their matriculation to the college. Students should contact the College of Engineering if they feel they qualify for an exemption.

Any student who needs two repeated attempts to complete the five courses or has two or more grades of "C-" may be considered for continuation in engineering if additional grade and coursework requirements are satisfied. Any student who needs more than two repeated attempts to complete the five courses listed above does not satisfy this requirement and will not be allowed to continue in the engineering program. There are NO exceptions. Grades of "W" are not considered as a repeated attempt.

Pre-engineering students are strongly encouraged to contact an academic advisor prior to enrolling in any of the five retention courses to ensure they have completed the proper course prerequisites. Once a pre-engineering student satisfies all the pre-engineering requirements, he/she may visit the Office of Associate Dean to initiate the transfer process to his/her intended engineering major prior to the beginning of the following semester.

Course Grade Requirement and Practice

1. It is the practice of the college not to use "plus and minus (/–)" grading for any undergraduate engineering course;

2. Engineering majors must earn a grade of "C" or better in all engineering courses that apply toward the degree. This requirement may be waived by the academic dean upon recommendation from the department chair for no more than one (1) such course; and

3. **A** student who is failing a course cannot receive a grade of Incomplete (I). The student receiving an "I" must complete all course requirements during the next term of his enrollment.

4. The College of Engineering does not allow students to use "Grade Forgiveness." Students transferring to the College from another major may be required to relinquish grade forgiveness prior to the transfer. Any "Grade Forgiveness" incorrectly applied will be removed prior to graduation.

Repeated Course Attempts Policy

A student who fails to earn a grade of "C" or better after a second attempt in the same engineering course or who has an excessive number of repeated engineering course attempts may be transferred from his/her current engineering major to the pre-engineering major. The student may be reinstated back to his/her original engineering major only upon the approval of his/her academic department.

Engineering Course Prerequisites Policy

It is the student's responsibility to be aware of the prerequisites of an engineering course prior to enrollment in that course. A student may contact the engineering dean or department chair for additional information concerning course prerequisites and this policy. Failure to fulfill course prerequisites may result in the removal of the course from the student's enrollment at any time during the semester with no refund of tuition or fees.

College of Engineering Course Withdrawal Policy

For accreditation reasons, the Course Withdrawal policy at the College of Engineering is different from the policy used at Florida A&M University. Undergraduate engineering students may withdraw from or "drop" any course in the current semester for any reason up to and including the 7th week of classes. There may be

financial aid and other implications withdrawing from a course, so you should always contact with your academic advisor before withdrawing. The time period between weeks 7 and 10 of each semester is considered the Engineering "Late Drop" Period. The late drop deadline varies each semester, but generally occurs at the 10th week of classes. Depending on your academic classification, there are restrictions on the number of times you will be permitted to "late drop" a course during this period.

These restrictions are as follows: (a) all pre-engineering students are limited to a total of two (2) "late drops" during their tenure in the pre-engineering program. Students who reach their "two late drops" limit will NOT be permitted another late drop until they enter their intended engineering major. Students who are coded in a degree granting engineering major are permitted an unlimited number of "late drops" between the 7th week and the late drop deadline of the semester.

No course drops for any engineering student will be permitted after the late drop deadline of classes except in documented cases of administrative error, death in the immediate family, personal illness, or a military service obligation. The withdrawal deadlines are posted on the College of Engineering (http://www.famu.edu/engineering) webpage each semester and provided in an email sent to all engineering accounts. Students will be responsible for the grades they receive in all courses enrolled in the semester after the course withdrawal deadline.

College of Engineering Council of Academic Program Coordinators

The College of Engineering Council of Academic Program Coordinators (CAPC) has been assigned the responsibility to ensure that these academic requirements are equitably and consistently applied to all engineering students.

Transfer Students

Students who plan to enroll in another institution for the first two years and then transfer into the College of Engineering should use great care in selecting freshman and sophomore course work. To be admitted to an engineering major, transfer students must have satisfied the same set of pre-engineering requirements as students who take all their course work at FAMU. Additionally, transfer students who will earn an AA or have 60 or more hours of transfer credit prior to enrollment must have successfully completed Calculus I and at least one other pre-engineering course (excluding First-Year Engineering Laboratory). We prefer that AA transfer students have the majority of the pre-engineering courses completed prior to enrollment. Students are advised to consult with the college as early as possible concerning their first two years of study. Students who transfer out of the engineering program and then desire to transfer back may be subject to additional academic requirements before their request to transfer is considered. Please consult with the office of the associate dean for more information.

Bachelor of Science Degree Requirements

A student who has taken a college preparatory curriculum in high school including algebra, geometry, trigonometry, physics, and chemistry can complete the requirements for the bachelor of science (BS) degree in four years and one summer with an average load of sixteen (16) hours per semester. A student with superior high school training may take advantage of opportunities for advanced placement through the University's programs for acceleration. In order to satisfy the State of Florida, Division of Colleges and Universities' requirement of summer attendance, it is recommended that students enroll in the summer session at the end of the first year. Students who are not prepared to begin with calculus I (MAC 2311) will be required to complete the necessary prerequisite mathematics course. This may require one or two additional semesters of coursework.

General Education Component

Engineering students must take a total of twenty-four semester hours in the areas of English, history, humanities, and social sciences.

First-Year Engineering Laboratory

All engineering students must complete the one-hour laboratory (or its equivalent) EGN 1004L. Students who enter the engineering program having completed all of the requirements listed under "Pre-engineering Requirements" except for completion of EGN 1004L may receive a waiver of this requirement if they attend the New Engineering Student Orientation. Students who are pursuing a second baccalaureate degree in engineering may also receive a waiver with permission of the engineering dean. Any student who transfers out of engineering and then desires to transfer back to engineering must complete the course or its equivalent.

Mathematics and Basic Science Core

All graduates of the college must master a common body of knowledge in mathematics and basic science. This has been addressed by the adoption of a mathematics and basic science core for all students seeking the BS in engineering. Some of these courses may be completed at a community college. The required courses are listed below:

Course	Credit Hours
*CHM 1045C General Chemistry	4
*CHM 1045L General Chemistry I Lab	0
*MAC 2311 Calculus with Analytical Geometry I	4
*MAC 2312 Calculus with Analytical Geometry II	4
*MAC 2313 Calculus with Analytical Geometry III	5
*MAP 2302 Differential Equations	3
or Equivalent	
*PHY 2048C General Physics A	5
*PHY 2049C General Physics B	5

* This is a state common prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

State of Florida Common Course Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program. Students are

strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

The following lists the common program prerequisites or their substitutions necessary for admission into this upper-division degree program:

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283
4. MAP X302 or MAC X305
5. CHM X045/X045L or CHMX045C or CHS X440
6. CHMX046/X046L or CHMX046C*
7. PHY X048/X048L or PHYX048C or PHYX043/X048L
8. PHY X049/X049L or PHYX049C or PHYX044/X049L

Common Program Prerequisites can also be found at http://www.facts.org

Engineering Major Area

Course requirements for engineering major areas consist of additional mathematics and basic science courses, engineering core courses (e.g. thermodynamics, engineering mechanics, electrical circuit analysis), engineering required courses, and engineering technical courses. A current statement of requirements for engineering major areas is available as advising materials in the academic departments.

Definition of Prefixes

EEL—Electrical Engineering

EGM—Engineering Mechanics

EGN—General Engineering

EML—Mechanical Engineering

Undergraduate Courses

EEL 3003 Introduction to Electrical Engineering (3) Prerequisites: MAC 2312; PHY 2048. Corequisite: EEL 3003L. This course is an introduction to electrical engineering concepts for non-electrical engineering majors. It covers a broad range of topics, including basic circuit theory, semiconductor devices, microprocessors, instrumentation amplifiers, and machines.
EEL 3003L Introduction to Electrical Engineering Laboratory (1) Prerequisites: MAC 2312; PHY 2048. Corequisite: EEL 3003. This laboratory is in support of EEL 3003. Must be taken concurrently with first enrollment in EEL 3003. Must be dropped if EEL 3003 is dropped.
EGM 3512 Engineering Mechanics (4) Prerequisites: MAC 2312; PHY 2048. Corequisite: MAC 2313. Course topics include statics and dynamics of particles and rigid bodies using vector analysis, free body diagrams, equilibrium of particles and rigid bodies, particle and general rigid body motion, work/energy, impulse and momentum methods.
EGN 1004L First Year Engineering Laboratory (1) This course places an emphasis on student time management, a variety of products and processes, and computer-aided problem solving. Product/process involves sketching and drawing pertinent diagrams by hand and learning the history and engineering concepts involved.
EGN 2123 Computer Graphics for Engineers (2) Prerequisite: MAC 2311. Course covers principles of engineering graphics: visualization, spreadsheet applications, graphical calculus, and descriptive geometry. Also introduces the engineering design process and CAD systems.
EGN 3613 Principles of Engineering Economy (2) Prerequisite: MAC 2313. This course places an emphasis on discrete cash flow diagrams, cash flow equivalence factors, standard criteria for comparison of project proposals, special cash flow topics, special analysis, and case studies.
EML 3100 Thermodynamics (2) Prerequisites: MAC 2312; PHY 2049. This course is an introduction to engineering thermodynamics, basic concepts, properties of pure substances, work and heat, first and second laws of thermodynamics, closed and open systems, formulations, engineering applications.

Graduate Admission Requirements

A candidate must fulfill the following minimum requirements for admission into the graduate program:

1. A Bachelor of Science degree in engineering or a closely allied field from an accredited institution of higher learning;

2. Score of at least 1000 on Graduate Records Examinations (GRE), quantitative and verbal portions combined. All candidates must submit official exam scores prior to being admitted as a regular graduate student;

3. A grade point average of 3.0 or better on a 4.0 scale on all works while registered as an upper-division student;

4. A minimum of 550 on the TOEFL examination (for international students only);

5. Any admission requirements of the department.

For additional information, refer to the degree requirements under each department.

Graduate Financial Assistance Opportunities

Many graduate students in the College of Engineering are being supported through teaching or research assistantships. Fellowships are available for exceptionally qualified students. Interested students should contact the department of their selected major for detailed information and application materials.

FAMU-FSU College of Engineering Graduate Programs

Department of Chemical and Biomedical Engineering

Department of Civil and Environmental Engineering

Department of Electrical and Computer Engineering

Department of Industrial Engineering

Department of Mechanical Engineering

Chemical and Biomedical Engineering Department

Department of Chemical and Biomedical Engineering Faculty

Rufina Alamo, Professor; Ph.D. University of Madrid, 1981. Polymer crystallization and characterization; structure - property relations; morphology of semi-crystalline polymers.

Ravindran Chella, Associate Professor; Ph.D. University of Massachusetts, 1984. Biomolecular transport in microchannels and nano-channels; morphogen transport in tissue constructs.

Hoyong Chung, Assistant Professor, Ph.D., Carnegie Mellon University, 2011. Polymer synthesis, biomaterials, smart materials, bio-inspired polymers, catalytic polymerization.

John R. Collier, Professor Emeritus; Ph.D. Case Institute, 1966. Rheology; processing of polymers; biomass conversion; whiskey processing.

Wright C. Finney, Senior Research Associate; M.S. Florida State University, 1978. Environmental science and engineering; aerosol dynamics and characterization.

Samuel C. Grant, Associate Professor; Ph.D. University of Illinois-Chicago, 2001. Magnetic resonance microscopy; neurodegenerative diseases; bioengineered constructs & materials; high field MRI contrast; single cell diffusion analysis; spectroscopy and osmoregulation.

Jingjiao Guan, Associate Professor; Ph.D. Ohio State University, 2005. Micro and nano-devices for drug delivery.

Daniel J. Hallinan, Assistant Professor; Ph.D. Drexel University, 2010. Modern battery technology, solid state electrolytes, polymer physics.

Egwu E. Kalu, Professor; Ph.D. Texas A&M University, 1991. Electrochemical engineering; electrophysiological processes.

Yan Li, Assistant Professor, Ph.D. Ohio State University, 2002, Stem cell technology and engineering, biomaterials.

Bruce R. Locke, Distinguished Research Professor and Associate Vice-President; Ph.D. North Carolina State University, 1989, P.E. Transport/reaction in tissues and complex media; transport process using NMR/MRI; reaction kinetics in non-thermal plasmas.

Biwu Ma, Associate Professor; Ph.D., University of Southern California, 2005. Development of new functional materials for applications in technological areas such as energy, environment, and information; examples are solar energy conversion devices, energy storage devices, light emitting devices, transistors, and sensors.

Teng Ma, Professor and Department Chair; Ph.D. Ohio State University, 1999. Cell and tissue engineering; biomaterials.

Jose Mendoza-Cortes, Assistant Professor; Ph.D., California Institute of Technology, 2012. Energy storage; electrochemistry; materials and catalysts design, chemical and crystallization mechanisms, biomaterials.

Anant K. Paravastu, Associate Professor; Ph.D., University of California – Berkeley, 2004. Protein self-assembly, amyloid diseases; regenerative medicine; solid state nuclear magnetic resonance spectroscopy.

Subramanian Ramakrishnan, Associate Professor; Ph.D., University of Illinois Champaign-Urbana, 2001. Colloidal and interfacial science; nanoparticle self-assembly; structure-property relationships in soft condensed matter.

Loren B. Schreiber, Professor; Ph.D., California Institute of Technology, 1975. Engineering education; batch reaction and batch distillation; physical properties of fine organic chemicals.

Theo M. Siegrist, Professor; Ph.D., ETH Switzerland, 1982. Organic semiconductors; structural analysis of organic nanoscale materials.

John C. Telotte, Associate Professor; Ph.D,. University of Florida, 1985. Chemical thermodynamics; radon transport; semiconductor processing, fuel cell development.

Yaw Yeboah, Professor and Dean of the College of Engineering, Ph.D., Massachusetts Institute of Technology, 1979. Electrocatalysis/heterogeneous catalysis; combustion and emission control; oilfield scale formation; coal and/or biomass conversion processes; petroleum and natural gas production and processing; energy, materials, and the environment.

Affiliate Faculty

Ching-Jen Chen, Affiliate Professor; Ph.D., Case Western Reserve, 1967. Heat transfer, fluid mechanics, numerical simulation, biomagnetics.

Chang S. Hsu, Affiliate Professor and Assistant Scholar/Scientist; Ph.D., University of Kentucky, 1974. Petroleum chemistry, exploration, and processing; hydrocarbon science and technology; environmental chemistry, monitoring, and controls; lubricant oils and petrochemicals; biomass fuels and chemicals.

Mandip Sachdeva, Professor of Pharmacy (FAMU); Ph.D., Dalhouise University, 1994. Drug delivery systems, pharmaceutics.

Sachin Shanbhag, Assistant Professor, Department of Scientific Computing (FSU); Ph.D., Michigan, 2004. Computer modeling of polymer rheology; modeling of biological cell morphology and interactions.

Undergraduate Program Overview

The vision of the Department of Chemical and Biomedical Engineering as an educational unit is to be recognized as a place of excellence in fundamental and applied chemical and biomedical engineering education and life-long learning, and to maintain a national research leadership in modern areas of engineering challenge. To attain this vision, the department realizes that it has to continually satisfy its major stakeholders: students, industrial employers, alumni, departmental faculty, the college, the universities, the community, the Engineering Accreditation Commission of ABET, Inc., http://www.abet.org., and other professional societies.

Chemical engineering encompasses the development, application, and operation of processes in which chemical, biological, and/or physical changes of material are involved. The work of the chemical engineer is to analyze, develop, design, control, construct, and/or supervise chemical processes in research and development, pilot-scale operations, and industrial protection. Chemical engineers are employed in the manufacture of inorganic chemicals (e.g., acids, alkalis, pigments, fertilizers), organic chemicals (e.g., petrochemicals, polymers, fuels, propellants, pharmaceuticals, specialty chemicals), biological products (e.g., enzymes, vaccines, biochemicals, biofuels), and materials (e.g., ceramics, polymeric materials, paper, biomaterials). The graduate in chemical engineering is particularly versatile. Industrial work may involve production, operation, research, and development. Graduate education in medicine, dentistry, and law, as well as chemical engineering, biomedical engineering, and other engineering and scientific disciplines are viable alternatives for the more accomplished graduate.

The Department of Chemical and Biomedical Engineering has made a long-term commitment to emphasize a biological component in its curriculum. The increasing importance of biological and medical subjects within the field of engineering cannot be underestimated. Many of the remarkable breakthroughs in medical science can be directly attributed to advances in chemicals, materials, and devices spearheaded by biochemical and biomedical engineers. Currently, biomedical engineering represents the fastest growing engineering discipline in the U.S., and it is likely to continue as such. The biomedical/biotechnology industries are also the fastest growing of all current industries that employ engineers. Training in biological and biomedical engineering provides an excellent background for graduate and/or medical school, especially in light of the increasing technological complexity of medical education.

The Department currently offers the Bachelor of Science (BS) degree in Chemical Engineering with three major options (Chemical Engineering, Biomedical Engineering, and Chemical-Materials Engineering). The BS degree takes between four and five years to complete. The undergraduate curriculum emphasizes the application of experimental and computer analysis to classical chemical engineering principles. This includes laboratory instruction in modern, state-of-the-art facilities in the transport phenomena, unit operations, and process control laboratories. Students are instructed in and utilize state-of-the-art computational programs such as MATLAB, Aspen, and COMSOL Multiphysics. In order to meet newly developed interests in chemical engineering and related fields, elective courses are available in bioengineering, polymer engineering, materials engineering, electrochemical engineering, environmental engineering, and biomedical engineering. The major options in Materials Engineering and Biomedical Engineering build upon the core classical chemical engineering principles developed initially for the original major in Chemical Engineering. Consult an advisor for specific requirements for the three major options.

Please contact the Department of Chemical and Biomedical Engineering at Suite A131, 2525 Pottsdamer Street, Tallahassee, Florida, 32310–6046; phone: (850) 410-6149 or 410-6151; fax: (850) 410-6150; e-mail: chemical@eng.fsu.edu.

Program Objectives and Outcomes

The Department of Chemical and Biomedical Engineering is nationally accredited by the Accreditation Board for Engineering and Technology (ABET). As part of the accreditation process, the Department has developed program educational objectives and program outcomes to reflect the educational goals of the Department. These objectives and outcomes are continually assessed and modified to meet the changing demands of the departmental stakeholders.

Program Educational Objectives

The Department of Chemical and Biomedical Engineering shall prepare its students for academic and professional work through the creation and dissemination of knowledge related to the field, as well as through the advancement of those practices, methods, and technologies that form the basis of the chemical engineering profession. Accordingly, the Department of Chemical and Biomedical Engineering has identified the following three departmental educational objectives for the Bachelor of Science Degree in Chemical Engineering:

1. Successfully pursue careers in a wide range of industrial, professional and academic settings through application of their rigorous foundation in chemical engineering and strong communication skills

2. Successfully adapt and innovate to meet future technological challenges and evolving regulatory issues, while addressing the ethical and societal implications of their work at both the local and global level

3. Successfully function on interdisciplinary teams and assume participatory and leadership roles in professional societies, and interact with educational, community, state, and federal institutions.

Program Outcomes

These objectives are further expanded and detailed through eleven program student outcomes:

Program Outcome A: Scientific Knowledge. Students graduating from the program will have the ability to apply knowledge of mathematics, physics, chemistry, biology, and chemical engineering to analyze chemical engineering processes (c3.a).

Program Outcome B: Chemical Engineering Process Experimentation. Students graduating from the program will be able to design and conduct chemical engineering experiments and analyze and interpret fundamental data of importance to the design and operation of chemical processes (c3.b).

Program Outcome C: Design Skills. Students graduating from the program will have the ability to design and analyze new and existing chemical systems and processes to meet desired needs (c3.c).

Program Outcome D: Multidisciplinary Teams. Students graduating from the program will have the ability to function on multidisciplinary teams (c3.d).

Program Outcome E: Problem Solving. Students graduating from the program will have the ability to identify, formulate and solve chemical engineering problems (c3.e).

Program Outcome F: Professional and Ethical Responsibility. Students graduating from the program will have an understanding of professional and ethical responsibility (c3.f).

Program Outcome G: Effective Communications and Team Participation. Students graduating from the program will have the ability to communicate effectively (c3.g).

Program Outcome H: Global and Societal Impact of Chemical Engineering. Students graduating from this program will have an understanding of the global and societal impact of chemical engineering practice (c3.h).

Program Outcome I: Lifelong Learning. Students graduating from the program will be able to assess the need for, and engage in, lifelong learning (c3.i).

Program Outcome J: Contemporary Issues in Chemical Engineering. Students graduating from this program will have an understanding of contemporary issues in chemical engineering (c3.j).

Program Outcome K: Modern Engineering Skills and Tools. Students graduating from the program will be able to use the modern engineering skills and tools necessary for chemical engineering practice either in industry or in pursuit of advanced education (c3.k).

Note: Identifiers beginning with c3, such as c3.a above, refer to specific outcomes in Criterion 3 of the ABET Engineering Criteria 2000. They indicate the ABET outcome that the Department of Chemical and Biomedical Engineering outcome addresses.

The Department sees ABET Engineering Criteria 2000 as encouraging each engineering department to pursue its own unique BS degree program objectives in accordance with its own environment and stakeholder demands. ABET EC 2000 also stipulates that the outcomes of program implementation must be assessed and evaluated regularly, and the results of such assessments and evaluations must be utilized as needed in future program objectives and implementation.

Undergraduate Laboratory and Computational Facilities

Undergraduate teaching laboratories in measurements and transport phenomena, unit operations, and process control are designed to augment classroom instruction. The undergraduate chemical engineering laboratory experiments feature a 20 stage distillation column for the study of organic chemical separations, several reactor vessels for the design and analysis of batch and continuous reactor configurations, and a liquid/liquid continuous extraction process system, among others. All experiments include computer data control and computer data acquisition systems in order to provide a "real world" experience for our students.

The Department has extensive computational and laboratory facilities in a number of areas. In addition to the University computing center facilities accessible by remote terminals, students have access to College of Engineering computer labs that have either remote terminals or workstations connected to college-wide servers. Within the Department of Chemical and Biomedical Engineering, undergraduate students working on research projects utilizing laboratory computer terminals connected to the college servers and workstations dedicated to research use. The Department requires the use of computers for data acquisition, process control, experimental design and analysis, report writing, and homework problem calculations in the chemical engineering curriculum.

Areas of Study (Majors)

Although the department offers one Bachelor of Science degree (BS) in Chemical Engineering, students may choose from among three diverse areas of study that reflect new directions in the broader field of chemical engineering. These major options include chemical engineering, chemical-materials engineering, and biomedical engineering.

Chemical Engineering

The most common major, it prepares students for employment or further study in traditional areas of chemical engineering (described above).

Chemical - Engineering Materials

Chemical engineers have extensively developed and studied the molecular structures and dynamics of materials—including solids, liquids, and gases—in order to develop macroscopic descriptions of the behavior of such materials. In turn, these macroscopic descriptions have allowed the construction and analysis of unit processes that facilitate desired chemical and physical changes. This constant interplay between molecular scale understanding and macroscopic descriptions is unique and central to the field of chemical engineering.

Chemical - Biomedical Engineering

Biomedical engineering concerns the application of chemical engineering principles and practices to large scale living organisms, most specifically human beings. As one of the newest subdisciplines of chemical engineering, the field is a rapidly evolving one involving chemical engineers, biochemists, physicians, and other health care professionals. Biomedical research and development is carried out at universities, teaching hospitals, and private companies, and it focuses on conceiving new materials and products designed to improve or restore bodily form or function. Biomedical engineers are employed in diverse areas such as artificial limb and organ development, genetic engineering research, development of drug delivery systems, and cellular and tissue engineering. Many chemical engineering professionals are engaged in medical research to model living organisms (pharmacokinetic models), and to make biomedical devices (e.g., drug delivery capsules, synthetic materials, and prosthetic devices). Because of increasing interest in this field of study, the major in chemical–biomedical engineering also provides an avenue for students interested in pursuing a career in medicine, biotechnological patent law, or biomedical product sales and services.

State of Florida Common Program Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program. Students are

strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

The following lists the common program prerequisites or their substitutions necessary for admission into this upper-division degree program:

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283
4. MAP X302 or MAC X305
5. CHM X045/X045L or CHMX045C or CHS X440
6. CHMX046/X046L or CHMX046C
7. PHY X048/X048L or PHYX048C or PHYX043/X048L
8. PHY X049/X049L or PHYX049C or PHYX044/X049L

Note: The Department also requires CHM X1046/X1046L and EGN 1004L for acceptance into one of the Department's majors from the Pre-Engineering major. Courses marked with an asterisk (*) have at least one acceptable substitute. Contact the department for details.

Requirements for a BS Degree in Chemical Engineering

A program of study encompassing at least one hundred thirty-one (131) semester hours is required for the Bachelor of Science (BS) degree in chemical engineering. A candidate for the Bachelor's degree is required to earn a "C" or higher in all engineering courses, and must achieve a 2.0 grade point average (GPA) in the forty-five semester hours of chemical engineering major courses. In addition, students must achieve a grade of "C–" or higher in all courses transferred into the Department of Chemical and Biomedical Engineering. Students should contact the department for the most up-to-date information concerning the chemical engineering curriculum requirements.

CLAST Requirement: Effective July 1, 2011, CLAST scores nor CLAST alternative are required for graduation.

There are three majors within the chemical engineering Bachelor's degree program. These include chemical engineering, chemical-materials engineering, and biomedical engineering. Most of the curriculum is common to all three majors, and includes topics in general education, mathematics, basic science, computer science, advanced chemistry, general engineering science, and chemical engineering science and design. History/social science and humanities/fine arts electives are to be selected to satisfy the Florida A&M University general education requirement. Students in all three majors should successfully complete the following courses in addition to the general education sequence, other University, and College of Engineering requirements:

Freshman Year	**Sem. Hrs.**
Fall Semester	
*CHM 1045 General Chemistry I	3
*CHM 1045L General Chemistry I Lab	1
*MAC 2311 Calculus with Analytical Geometry I	4
ENC 1101 Freshman Communication Skills I	3
AMH 2091 African-American History	3
EGN 1004L	1
Total	**15**

Freshman Year	**Sem. Hrs.**
Spring Semester	
*CHM 1046 General Chemistry II	3
*CHM 1046L General Chemistry II Lab	1
*MAC 2312 Calculus with Analytical Geometry II	4
ENC 1102 Freshman Communication Skills II	3
*BSC 1010 Biological Science I	3
Total	**14**

Freshman Year	**Sem. Hrs.**
Summer Semester	
Humanities Elective II (Gordon Rule)	3
Humanities Elective III (Gordon Rule)	3
Social Science Elective I	3
Total	**9**

Sophomore Year	**Sem. Hrs.**
Fall Semester	
ECH 3023 Mass and Energy Balances I	3
CHM 2210 Organic Chemistry I	3
*MAC 2313 Calculus with Analytical Geometry III	5
*PHY 2048C General Physics I w/Lab	5
Total	**16**

Sophomore Year	**Sem. Hrs.**
Spring Semester	
ECH 3024 Mass and Energy Balances II	3
ECH 3301 Introduction to Process Analysis and Design	4
CHM 2211 Organic Chemistry II	3
*PHY 2049C General Physics II w/Lab	5
History/Humanities III	3
Total	**18**

Junior Year	**Sem. Hrs.**
Fall Semester	
ECH 3101 Chemical Engineering Thermodynamics	3
ECH 3266 Transport Phenomena I	3
ECH 3854 Chemical Engineering Computations	4
CHM 4410 Physical Chemistry I	3
CHM 4410L Physical Chemistry I Lab	1
Total	**14**

Junior Year	**Sem. Hrs.**
Spring Semester	
ECH 3274L Transport Phenomena Lab	3
ECH 3418 Separations Processes	3

ECH 4267 Transport Phenomena	3
CHM/BCH XXXX Advanced Chemistry Elective	3
EGM 3512 Engineering Mechanics	4
Total	**16**

Senior Year	**Sem. Hrs.**
Fall Semester	
ECH 4504 Kinetics and Reactor Design	3
ECH 4604 Chemical Engineering Process Design II	4
ECH 4XXX Chemical Engineering Elective I	3
Humanities Elective IV (Gordon Rule)	3
Total	**11**

Senior Year	**Sem. Hrs.**
Spring Semester	
ECH 4323 Process Control	3
ECH 4323L Process Control Lab	1
ECH 4615 Chemical Engineering Process Design II	3
ECH 4XXX Chemical Engineering Elective II	3
EEL 3003 Intro Electrical Engineering	3
Total	**13**
Total Semester Hours	**131**

*This is a state common prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Requirements for the Three Major Options

In addition to the courses listed above that are required for all majors, the following courses are specifically required for each of the three majors.

Major in Chemical Engineering

Advanced Chemistry Elective

The advanced chemistry elective is to be selected from the following courses offered in the Department of Chemistry and Biochemistry, or selected other courses in either chemical engineering or biological sciences specifically approved by the Chair of the Department of Chemical and Biomedical Engineering.

CHM 3120 Quantitative Analysis or	3
CHM 4411 Physical Chemistry or	3
CHM 4130 Instrumental Analysis or	3
BCH 4053 General Biochemistry I	3
ECH 4937 Computational Chemistry and Molecular Structure	3

Chemical Engineering Electives

The two chemical engineering electives (three [3] semester hours each) are to be selected from the 4000-level elective courses offered in the Department of Chemical and Biomedical Engineering. Note: A six credit-hour sequence in the department's Undergraduate Research Program, consisting of the course designations ECH 4904 (ECH URP), ECH 4906 (ECH Honors in the Major), BME 4904 (BME URP), or BME 4906 (BME Honors in the Major), will substitute for this requirement.

Major in Engineering-Materials

Advanced Chemistry Elective

CHM 3120 Quantitative Analysis 3

Chemical Engineering Electives – Select Two

ECH 4823 Introduction to Polymer Science and Engineering or	3
ECH 4824 Chemical Engineering Materials or	3
ECH 4825 Polymer Process Engineering or	3
ECH 4937 Special Topics in Chemical Engineering [Molecular Engineering	

Note: A six-credit hour sequence in the department's Undergraduate Research Program, consisting of the course designations ECH 4904 (ECH-URP), ECH 4906 (ECH-Honors in the Major), will substitute for the Chemical Engineering Electives requirement.

Major in Biomedical Engineering

Biomedical Engineering Science and Design	3
BME 3009 Intro to Biomedical Engineering	3
BME 4403C, 4404C Quantitative Anatomy and Systems Physiology I and II [two course sequence]	3, 3
Biomedical Engineering Elective (take one)	
BME 4007 Biomedical Engineering	3
ECH 4743 Bioengineering	3

Note: A six credit hour sequence in the department's Undergraduate Research Program consisting of the course designations BME 4904 (BME-URP), or BME 4906 (BME-Honors in the Major), will substitute for the Biomedical Engineering Elective requirement.

Pre-Med Electives (recommended)

BCH 4033 General Biochemistry I and Lab	3/1
BSC 2211 Biological Science II	3
BSC 2011L Biological Science II Laboratory	2
CHM 2210L Organic Chemistry I Lab	1
CHM 2210L Organic Chemistry I Lab	1
PCB 3063 General Genetics	3
PCB 3743 Vertebrate Physiology	3

Academic Requirements and Policies

In accordance with ABET criteria, all engineering students are subject to a uniform set of academic requirements agreed upon by Florida State University and Florida A&M University. Students should consult the "FAMU-FSU College of Engineering" chapter of the General Catalog and the Department of Chemical and Biomedical Engineering web site for a list of all academic requirements and policies.

Prerequisite Grade Requirements

In addition to the college course prerequisite requirements, the Department of Chemical and Biomedical Engineering requires students to have obtained a grade of at least "C-" in all courses listed as prerequisites for the department's engineering courses.

Undergraduate Research Program (URP)

The Department of Chemical and Biomedical Engineering offers an Undergraduate Research Program (URP) in chemical and biomedical engineering to encourage talented juniors and seniors to undertake independent and original research as part of the undergraduate experience. The program is two-tiered, with those students meeting a more stringent set of academic requirements being admitted to the Honors in the major (Chemical and Biomedical Engineering) program. For requirements and other information, contact the department, and see the "University Honors Office and Honor Societies" chapter of this General Bulletin.

Course Descriptions

Definition of Prefixes

BME—Biomedical Engineering
ECH—Engineering: Chemical
EGN—Engineering: General

Undergraduate Courses

Biomedical Engineering

BME 3009. Introduction to Biomedical Engineering (3). Prerequisites: BSC 2010, MAC 2312, PHY 2048C, all with a grade of "C" or higher. Corequisites: ECH 3024, ECH 3301, MAC 2313 and PHY 2049C. This course presents an introduction to the field of biomedical engineering, building on previous basic coursework in biological science, physics, and calculus. Topics in cell physiology and modeling, bioinstrumentation, biomaterials, tissue engineering, and bioimaging are covered. The course provides sophomore-level biomedical engineering students with both fundamentals and applications in contemporary biomedical science and engineering.

BME 4007. Biomedical Engineering (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course offers an introduction to the field of biomedical engineering, with emphasis on the role of general engineering. Topics cover hemodynamics, human physiology, pharmacodynamics, artificial organs, biomaterials, biomechanics, and clinical engineering.

BME 4082. Biomedical Engineering Ethics (3). Prerequisite: Senior or graduate standing in biomedical engineering. This course is an introduction to the key theories, concepts, principles, and methodology relevant to the development of biomedical professional ethics. The student is facilitated in his/her development of a code of professional ethics through written work, class discussion, and case analysis.

BME 4403C. Quantitative Anatomy and Systems Physiology I (3). Prerequisites: BME 3009, ECH 3024, ECH 3301, and PHY 2049C, all with a grade of "C" or higher. Corequisites: ECH 3101, ECH 3266, and ECH 3854. This course, the first of a two-semester sequence, introduces engineering students to principles of anatomy and physiology of the human body. The lecture portion of the course focuses on relating fundamental biomedical engineering concepts to the human physiological system. The laboratory portion of the course involves a practical, in-depth study of the physical and chemical interrelationships in the form and function of all human anatomical and physiological subsystems.

BME 4404C. Quantitative Anatomy and Systems Physiology II (3). Prerequisites: BME 4403C, ECH 3101, ECH 3266, and ECH 3854. Corequisites: ECH 3274L, ECH 3418, and ECH 4267. This course, the second in a two-semester sequence, introduces engineering students to principles of anatomy and physiology of the human body. The lecture portion of the course focuses on relating fundamental biomedical engineering concepts to the human physiological system. The laboratory portion of the course involves a practical, in-depth study of the physical and chemical interrelationships in the form and function of all human anatomical and physiological subsystems.

BME 4801. Biomedical Engineering Process Design I (3). Prerequisite: BME 4404C. Corequisite: Senior standing. This course is the first of a two-semester sequence on the design of biomedical engineering processes and products. The first semester consists of introducing students to the principles of engineering economics and cost estimation techniques relating to principles of biomedical engineering design. Included is an introduction to computer-aided design calculations.

BME 4802. Biomedical Engineering Process Design II (3). Prerequisites: BME 4403C and BME 4801. Corequisite: Senior standing. This course is the second of a two-semester sequence on the design of biomedical engineering processes and products. The second term focuses on the actual design of a biomedical engineering process or product using computer-aided design calculations. This is the capstone senior design course in biomedical engineering. An individual design project is completed by each student.

BME 4904r. Undergraduate Research Project (1–3). Prerequisites: BME 4403C, ECH 3101, ECH 3266, ECH 3854, a 3.0 GPA, and instructor permission. Corequisites: BME 4404C, ECH 3274L, ECH 3418, and ECH 4267. This course involves the completion of an Honors Undergraduate Research Program (URP) for six hours with a minimum grade of "C". This program requires independent student research on a topic relevant to biomedical engineering and may be used to satisfy the Biomedical Engineering Elective requirement. May be repeated to a maximum of six semester hours.

BME 4905r. Directed Individual Study (3). Prerequisite: Department Chair permission. This course offers a supervised program of study approved by the Department Chair. May be repeated to a maximum of twelve credit hours.

BME 4906r. Honors URP in Biomedical Engineering (1–3). Prerequisites: BME 4403C, ECH 3101, ECH 3266, ECH 3854, a 3.2 GPA, and instructor permission. Corequisites: BME 4404C, ECH 3274L, ECH 3418, and ECH 4267. This course involves the completion of an Honors Undergraduate Research Program (URP) for six hours with a minimum grade of "C". This program requires independent student research on a topic relevant to biomedical engineering and may be used to satisfy the Biomedical Engineering Elective requirement. May be repeated to a maximum of six semester hours.

BME 4937r. Special Topics in Biomedical Engineering (3). Prerequisites: BME 4404C, ECH 3274L, ECH 3418, and ECH 4267.

Corequisite: ECH 4504. This course emphasizes recent developments in the field of biomedical engineering. Selected readings are assigned by the instructor. Structure of the course varies by instructor and topic, but generally involve lectures and a final project on a topic in biomedical engineering. May be repeated within the same term to a maximum of twelve semester hours.

Chemical Engineering

ECH 2050. Engineering Communications (2). Prerequisite: ENC 1101. This course includes techniques for effective oral communication in settings most frequently encountered by the practicing engineer. Speaking skills are applied in informal presentations, formal presentations, and interviews.

ECH 3023. Mass and Energy Balances I (3). Prerequisites: CHM 1046 and MAC 2312. Corequisites: CHM 2210, MAC 2313, and PHY 2048C. This course covers mass and energy balances related to chemical process systems and measurements, as well as to the development of problem-solving methodologies in mass and energy balances.

ECH 3024. Mass and Energy Balances II (3). Prerequisites: CHM 2210, ECH 3023, MAC 2313, and PHY 2048C, all with a grade of "C" or higher. Corequisites: BSC 2010, ECH 3301, and PHY 2049C. This course is the second in a two-part series introducing the general concepts of chemical engineering. Applications of mass and energy balances are extended to include reactive systems, systems undergoing phase changes, and transient processes. MATLAB is used to demonstrate the use of a structured programming language for material and energy balances.

ECH 3101. Chemical Engineering Thermodynamics (3). Prerequisites: ECH 3024, ECH 3301, and PHY 2049C, all with a grade of "C" or higher. Corequisites: ECH 3266 and ECH 3854. This course exposes students to the basics of classical and solution thermodynamics, forming a link between the mass and energy balance courses and separations.

ECH 3266. Transport Phenomena I (3). Prerequisites: ECH 3024, ECH 3301, and PHY 2049C, all with a grade of "C" or higher. Corequisites: ECH 3101 and ECH 3854. This course examines integral balance equations for conservation of momentum, energy, and mass. Topics include: application to chemical processes involving fluid flow and heat and mass transfer; estimation of friction factors and of heat and mass transfer coefficients; pump selection and sizing; piping network analysis; and design of heat exchangers.

ECH 3274L. Transport Phenomena Lab (3). Prerequisites: ECH 3101, ECH 3266, and ECH 3854. Corequisites: ECH 3418 and ECH 4267. This course enables students to design and conduct experiments on fluid mechanics and heat transfer; analyze and interpret data; apply spreadsheets, statistical methods, and process models; as well as gain proficiency in operating basic chemical-engineering equipment and instruments. Emphasis is placed on safety, professionalism, teamwork, and oral/written communication.

ECH 3301. Process Analysis and Design (4). Prerequisite: MAC 2312 with a grade of "C" or higher. Corequisites: ECH 3023 and MAC 2313. This course examines the development of process models for equilibrium and dynamic systems (including stagewise processes) that arise in chemical engineering applications. It also includes analysis of process models using exact and approximate techniques.

ECH 3330. Statistical Approach to Process Improvement (3). Prerequisite: Completion of the academic requirements through the sophomore year in chemical engineering or in other engineering disciplines. This course covers ways to apply statistical process control and methods of planned experimentation to the design of products and processes, as well as to continuous quality improvement. Topics covered include control charts; process-capability studies; loss functions; acceptance sampling; design of experiments for screening studies and response-surface modeling; and analysis of variance. The course also introduces case studies in chemical processes, food engineering, and health care.

ECH 3418. Separations Processes (3). Prerequisites: ECH 3101, ECH 3266, ECH and 3854. Corequisites: ECH 3274L and ECH 4267. This course examines the principles of equilibrium and transport-controlled separations. Topics include analysis and design of stagewise and continuous separation processes, including distillation, absorption, extraction, filtration, and membrane separations.

ECH 3854. Chemical Engineering Computations (4). Prerequisites: ECH 3024, ECH 3301, and PHY 2049C, all with a grade of "C" or higher. Corequisites: ECH 3101 and ECH 3266. This course covers structured programming techniques, solutions of ordinary differential equations, as well as numerical techniques useful in the solution of chemical engineering processes, as follows: root-finding techniques, direct and iterative approaches for solving linear systems, linear and nonlinear regression, interpolation, numerical differentiation and integration, and statistical analysis of data.

ECH 3949r. Experiential Learning (0). (S/U grade only.) This non-credit, experiential learning course offers students an opportunity to gain "real world" on-the-job work experience related to a specific academic field of study. Students must register for this course through the Career Center.

ECH 4267. Transport Phenomena II (3). Prerequisites: ECH 3101, ECH 3266, and ECH 3854. Corequisites: ECH 3274L and ECH 3418. This course is the second in a two-semester sequence on transport phenomena. Emphasis is on critical analytical and mathematical skills for analyzing and applying fundamental concepts in transport phenomena (including fluid mechanics, heat transfer, and mass transfer), as well as on the analysis of similarities and differences among these three processes.

E**CH 4323. Process Contro**l (3). Prerequisites: ECH 4404L, ECH 4504, and ECH 4604. Corequisite: ECH 4615. This course is a systematic introduction to dynamic behavior and automatic control of industrial processes. Synthesis of feedback control loops for linear systems and synthesis of control structures.

ECH 4323L. Process Control Lab (1). Prerequisites: ECH 4404L, ECH 4504, and ECH 4604. Corequisite: ECH 4615. This lab is comprised of experiments designed to illustrate and apply control theory, measurement techniques, calibration, tuning of controls, characterization of sensors, and control circuits.

E**CH 4404L. Unit Operations Lab** (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4504 and ECH 4604. This course involves preparing experimental plans and doing experimental work with unit operations equipment to meet specific objectives. Emphasis is on computer data analysis and on oral communication skills.

E**CH 4504. Kinetics and Reactor Design (**3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. This course covers the following topics: homogeneous and heterogeneous reaction kinetics; analysis of batch, mixed, plug, and recycle reactors; analysis of

multiple reactions and multiple reactors; reactor temperature control; and catalytic reactor design.

ECH 4604. Chemical Engineering Process Design I (4). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L and ECH 4504. This course is the first in a two-semester sequence on the analysis, synthesis, and design of chemical processes, preparing students for engineering practice. Students integrate knowledge from prior courses with process economics, computer-aided design, engineering standards, and realistic constraints to solve open-ended process problems.

E**CH 4615. Chemical Engineering Process Design II** (3). Prerequisites: ECH 4404L, ECH 4504, and ECH 4604. Corequisites: ECH 4323 and ECH 4323L. This course is the second in a two-semester sequence on the analysis, synthesis, and design of chemical processes, and prepares students for engineering practice. Students integrate knowledge from prior courses with process economics, computer-aided design, engineering standards, and realistic constraints to the design of chemical-process facilities.

ECH 4743. Bioengineering (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course is an introduction to the major principles of the life sciences (microbiology, biochemistry, biophysics, genetics) that are important for biotechnological applications. Ext ension of the chemical engineering principles of kinetics, reactor design, heat and mass transport, thermodynamics, process control, and separation processes to important problems in bioengineering.

ECH 4781. Chemical Engineering—Environmental (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course is an introduction to applications of environmental engineering from a chemical engineering perspective. Thermodynamics, stoichiometry, chemical kinetics, transport phenomena, and physical chemistry are utilized in addressing pollution control and prevention processes. Analysis of particle phenomena, including aerosols and colloids. Applications of fundamentals to analyze gas and liquid waste treatment processes.

ECH 4800C. Distilled Spirits Processing and Properties (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course involves the production of a distilled-spirit sample at a commercial facility, followed by an in-depth chemical analysis of the product through the use of sophisticated instrumentation located at a university chemistry laboratory in Scotland. This intensive course takes place over a two week period in which students are instructed in the operational procedure of the plant and given hands-on involvement in an actual production run. Lecture and laboratory sessions following the production run focus on a detailed chemical and physical analysis of the distilled spirit sample using spectroscopic, chromatographic, and NMR techniques.

ECH 4823. Polymer Science and Engineering (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course offers an introduction to different types of polymers and their physical properties. Topics include major synthetic paths and reaction kinetics, properties of macromolecules in solution, methods of molecular weight determination, and the role of phase transitions in amorphous and crystalline polymers.

ECH 4824. Chemical Engineering—Materials (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course is an introduction to materials science and engineering from a chemical engineering perspective. Fundamentals of engineering materials, including polymers, metals, and ceramics are studied. Emphasis is placed on the strong interrelationship between materials structure and composition, synthesis and processing, and properties and performance.

ECH 4825. Polymer Process Engineering (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisites: ECH 4404L, ECH 4504, and ECH 4604. This course explores polymeric systems, interrelationships between material properties, processing conditions, and final properties with an emphasis on viscoelastic rheological behavior of polymer melts, concentrated solutions, and the relationship to the processing operations.

ECH 4904r. Undergraduate Research Project in Chemical Engineering (1–3). Prerequisites: ECH 3101, ECH 3266, ECH 3854, a 3.0 GPA, and instructor permission. Corequisites: ECH 3274L, ECH 3418, and ECH 4267. This course involves the completion of an Honors Undergraduate Research Program (URP) for six hours with a minimum grade of "C". This program requires independent student research on a topic relevant to chemical engineering and may be used to satisfy the Chemical Engineering

Elective requirement. May be repeated to a maximum of six semester hours.

ECH 4905r. Directed Individual Study (1–3). Prerequisite: Permission of Department Chair. This is a supervised program of study. May be repeated to a maximum of twelve semester hours.

ECH 4906r. Honors—URP in Chemical Engineering (1–3). Prerequisites: ECH 3101, ECH 3266, ECH 3854, a 3.2 GPA, and instructor permission. Corequisites: ECH 3274L, ECH 3418, and ECH 4267. This course involves the completion of an Honors Undergraduate Research Program (URP) for six hours with a minimum grade of "C". This program requires independent student research on a topic relevant to chemical engineering and may be used to satisfy the Chemical Engineering Elective requirement. May be repeated to a maximum of six semester hours.

ECH 4937r. Special Topics in Chemical Engineering (3). Prerequisites: ECH 3274L, ECH 3418, and ECH 4267. Corequisite: ECH 4504. This course covers selected topics in chemical engineering with emphasis on contemporary developments in the field. May be repeated within the same term to a maximum of twelve semester hours.

General Engineering

EGS 3032. Engineering Ethics (3). Prerequisite: EGN 1004L. This course introduces the key theories, concepts, principles, and methodology relevant to the development of professional engineering ethics. Students are guided in their development of a code of professional ethics through written work, class discussion, and case analysis.

General Engineering

EGS 3032. Engineering Ethics (3). Prerequisite: EGN 1004L. This course introduces the key theories, concepts, principles, and methodology relevant to the development of professional engineering ethics. Students are guided in their development of a code of professional ethics through written work, class discussion, and case analysis.

Graduate Courses

BME 5086. Biomedical Engineering Ethics (3).

BME 5620. Biophysical Chemistry and Biothermodynamics (3).

BME 5905r. Directed Individual Study (1–3).

BME 5910. Supervised Research (3). (S/U grade only.)

BME 5935r. Biomedical Engineering Seminar (0). (S/U grade only.)

BME 5937r. Special Topics in Biomedical Engineering (3).

BME 6530. NMR and MRI Methods in Biology and Medicine (3).

BME 6938r. Special Topics in Biomedical Engineering (3).

ECH 5052. Research Methods in Chemical Engineering (3).

ECH 5126. Advanced Chemical Engineering Thermodynamics I (3).

ECH 5261. Advanced Transport Phenomena I (3).

ECH 5262. Advanced Transport Phenomena II (3).

ECH 5526. Advanced Reactor Design (3).

ECH 5740. Fundamentals of Biomolecular Engineering (3).

ECH 5828. Introduction to Polymer Science and Engineering (3).

ECH 5840. Advanced Chemical Engineering Mathematics I (3).

ECH 5841. Advanced Chemical Engineering Mathematics II (3).

ECH 5852. Advanced Chemical Engineering Computations (3).

ECH 5905r. Directed Individual Study (1–3).

ECH 5910. Supervised Research (3). (S/U grade only.)

ECH 5934r. Special Topics in Chemical Engineering (3).

ECH 5935r. Chemical Engineering Seminar (0). (S/U grade only.)

ECH 6272. Molecular Transport Phenomena (3).

For listings relating to graduate course work for thesis, dissertation, and master's and doctoral examinations and defense, consult the Graduate portion of this catalog.

Chemical and Biomedical Engineering Graduate Programs

Department of Chemical and Biomedical Engineering Faculty

Rufina Alamo, Professor; Ph.D., University of Madrid, 1981. Polymer crystallization and characterization; structure - property relations; morphology of semi-crystalline polymers.

Ravindran Chella, Associate Professor; Ph.D., University of Massachusetts, 1984. Biomolecular transport in microchannels and nano-channels; morphogen transport in tissue constructs.

Hoyong Chung, Assistant Professor; Ph.D., Carnegie Mellon University, 2011. Polymer synthesis, biomaterials, smart materials, bio-inspired polymers, catalytic polymerization.

John R. Collier, Professor Emeritus; Ph.D., Case Institute, 1966. Rheology; processing of polymers; biomass conversion; whiskey processing.

Wright C. Finney, Senior Research Associate; M.S., Florida State University, 1978. Environmental science and engineering; aerosol dynamics and characterization.

Samuel C. Grant, Associate Professor; Ph.D. University of Illinois-Chicago, 2001. Magnetic resonance microscopy; neurodegenerative diseases; bioengineered constructs & materials; high field MRI contrast; single cell diffusion analysis; spectroscopy and osmoregulation.

Jingjiao Guan, Associate Professor; Ph.D. Ohio State University, 2005. Micro and nano-devices for drug delivery.

Daniel J. Hallinan, Assistant Professor; Ph.D. Drexel University,

2010. Modern battery technology, solid state electrolytes, polymer physics.

Egwu E. Kalu, Professor; Ph.D. Texas A&M University, 1991. Electrochemical engineering; electrophysiological processes.

Yan Li, Assistant Professor, Ph.D. Ohio State University, 2002. Stem cell technology and engineering, biomaterials.

Bruce R. Locke, Distinguished Research Professor and Associate Vice-President; Ph.D., North Carolina State University, 1989, P.E. Transport/reaction in tissues and complex media; transport process using NMR/MRI; reaction kinetics in non-thermal plasmas.

Biwu Ma, Associate Professor; Ph.D., University of Southern California, 2005. Development of new functional materials for applications in technological areas such as energy, environment, and information; examples are solar energy conversion devices, energy storage devices, light emitting devices, transistors, and sensors.

Teng Ma, Professor and Department Chair; Ph.D. Ohio State University, 1999. Cell and tissue engineering; biomaterials.

Jose Mendoza-Cortes, Assistant Professor; Ph.D., California Institute of Technology, 2012. Energy storage; electrochemistry; materials and catalysts design, chemical and crystallization mechanisms, biomaterials.

Anant K. Paravastu, Associate Professor; Ph.D. University of California – Berkeley, 2004. Protein self-assembly, amyloid diseases; regenerative medicine; solid state nuclear magnetic resonance spectroscopy.

Subramanian Ramakrishnan, Associate Professor; Ph.D. University of Illinois Champaign-Urbana, 2001. Colloidal and interfacial science; nanoparticle self-assembly; structure-property relationships in soft condensed matter.

Loren B. Schreiber, Professor; Ph.D. California Institute of Technology, 1975. Engineering education; batch reaction and batch distillation; physical properties of fine organic chemicals.

Theo M. Siegrist, Professor; Ph.D. ETH Switzerland, 1982. Organic semiconductors; structural analysis of organic nanoscale

materials.

John C. Telotte, Associate Professor; Ph.D. University of Florida, 1985. Chemical thermodynamics; radon transport; semiconductor processing, fuel cell development.

Yaw Yeboah, Professor and Dean of the College of Engineering, Ph.D., Massachusetts Institute of Technology, 1979. Electrocatalysis/heterogeneous catalysis; combustion and emission control; oilfield scale formation; coal and/or biomass conversion processes; petroleum and natural gas production and processing; energy, materials, and the environment.

Affiliate Faculty

Ching-Jen Chen, Affiliate Professor; Ph.D., Case Western Reserve, 1967. Heat transfer, fluid mechanics, numerical simulation, biomagnetics.

Chang S. Hsu, Affiliate Professor and Assistant Scholar/Scientist; PhD, University of Kentucky, 1974. Petroleum chemistry, exploration, and processing; hydrocarbon science and technology; environmental chemistry, monitoring, and controls; lubricant oils and petrochemicals; biomass fuels and chemicals.

Mandip Sachdeva, Professor of Pharmacy (FAMU); Ph.D., Dalhouise University, 1994. Drug delivery systems, pharmaceutics.

Sachin Shanbhag, Assistant Professor, Department of Scientific Computing (FSU); Ph.D., Michigan, 2004. Computer modeling of polymer rheology; modeling of biological cell morphology and interactions.

Department Overview

The Department of Chemical and Biomedical Engineering at the FAMU-FSU College of Engineering offers the degrees of Doctor of Philosophy (PhD) and Master of Science (MS) in both chemical and biomedical engineering, and the Bachelor of Science (BS) degree in chemical engineering. The bachelor's degree is fully accredited by the Engineering Accreditation Commission of ABET, Inc. The Department is strongly committed to building a graduate research program of national reputation in both applied and fundamental areas. The faculty believes that graduate programs must be diverse, interdisciplinary, and flexible in order to prepare chemical and biomedical engineers who can handle the challenging applications in modern research, industry and society.

- Major research areas include:
- Polymers and Complex Fluids
- Cellular and Tissue Engineering
- Multi-Scale Theory, Modeling and Simulations
- Nanoscale Science and Engineering
- Plasma Reaction and Electrochemical Engineering
- Biomedical Imaging

Many of these efforts are conducted in close cooperation with the Florida State University High Performance Materials Institute (HPMI), Aero-Propulsion, Mechatronics, and Energy (AME) Center, and Institute of Molecular Biophysics (IMB); the FSU Departments of Biological Sciences, Chemistry and Biochemistry, Physics, and Scientific Computing; the National High Magnetic Field Laboratory (NHMFL); the FSU College of Medicine and Department of Biomedical Sciences; the Florida A&M University School of Pharmacy and Pharmaceutical Sciences; as well as with the Departments of Mechanical, Industrial and Manufacturing, and Electrical and Computer Engineering in the College of Engineering.

Please contact the Department of Chemical and Biomedical Engineering at: Suite 131, 2525 Pottsdamer Street, Tallahassee, Florida, 32310–6046; phone: (850) 410-6149; fax: (850) 410-6150; e-mail: chemical@eng.fsu.edu.

Research Facilities

The Department of Chemical and Biomedical Engineering has extensive graduate research laboratory facilities located in the College of Engineering buildings. Three undergraduate teaching laboratories, a design classroom, and fifteen graduate research laboratories comprise the current physical resources. All laboratories are well equipped with modern experimental apparatus. These facilities include laboratories dedicated to polymer science and engineering, electrochemical engineering, gas/liquid phase pollutant treatment by non-thermal plasma, biomass processing, nuclear magnetic resonance, and cell and tissue engineering.

Research facilities include: a 500-MHz (11.75-T) NMR spectrometer; a 4.7-T MRI system; an atomic-force microscope; extensive cell and tissue growth facilities; rheological apparatus; pulsed and DC power supplies; analytical instruments (GC, GC/MS, HPLC, UV-IR, spectrophotometers, TOC, etc.); and analytical microscopes. Process equipment including various types of gas and liquid phase chemical reactors, controlled temperature fermenters, and polymer production reactors are also located in these laboratories. Infrastructure includes autoclaves, controlled environment incubators, water polishing systems, refrigerated/heating circulating baths, isotherm ovens, high purity gas production and mixing systems, refrigerated centrifuges, and additional support equipment.

Faculty and students have access to the FSU Research Computing Center's high level computing facilities. The High Performance Computing (HPC) cluster provides 403 compute nodes and 6,464 CPU cores with 75.4 peak teraflops to promote the advancement of scientific research. Jobs are managed by the MOAB and TORQUE scheduling software. Many faculty are also closely affiliated with the world-class National High Magnetic Field Laboratory (www.magnet.fsu.edu) and make extensive use of NHMFL resources and instrumentation.

Program in Chemical Engineering

Chemical engineering (ChE) encompasses the development, application, and operation of the processes in which chemical and/or physical changes of material are involved. The work of a chemical engineer is to analyze, develop, design, control, construct, and/or supervise chemical processes in research and development, pilot-scale operations, and industrial production. Emphasis is placed on the application of computer analysis to problems encountered in the above areas. Chemical engineers are employed in the manufacture of inorganic chemicals (i.e., acids, alkalis, pigments, and

fertilizers), organic chemicals (i.e., petrochemicals, polymers, fuels, propellants, pharmaceuticals, and specialty chemicals), biological products (i.e., enzymes, vaccines, biochemicals, biofuels, etc.), foods, semiconductors, and paper.

Graduate-level chemical engineers with graduate degrees work in a wide range of organizations for which their technical skills are needed. These organizations may include: local, state, and federal governments; private and public corporations; and education. Chemical engineers are involved in process and plant operation, technical services groups, research and development laboratories, plant design groups, occupational and safety programs, technical sales, technical training, and technical management. Graduate education can lead to careers in the medical sciences, chemical engineering, and other engineering and scientific disciplines as well as business and law.

The thesis MS degree requires thirty semester hours for completion, the non-thesis MS degree requires thirty-three semester hours, and the PhD requires a total of fifty-seven semester hours.

Master of Science (MS)

Admission Requirements

1. A baccalaureate degree in chemical engineering or an allied field from an accredited college or university;

2. Fulfillment of the requirements for the baccalaureate degree or its equivalent. Students may be required to satisfy deficiencies by taking undergraduate courses or can enroll in a transitional summer program if they do not have a degree from an accredited chemical engineering degree program;

3. An undergraduate or graduate GPA of 3.0 (on a 4.0 scale);

4. A minimum revised GRE percentile of at least 48% on the verbal portion and 75% on the quantitative portion of the test. It is noted that the GRE percentiles of funded graduate students on assistantship are typically higher than these minima;

5. Three letters of recommendation from persons familiar with the student's work and background;

6. A personal statement of professional goals; and

7. International students: For students whose native language is not English and who did not graduate from an accredited US institution with either a BS or MS degree, minimum scores on the TOEFL are 550 (paper-based), 213 (computer-based), or 80 (Internet-based).

Note: All students must present GRE scores prior to being admitted. Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this new test, go to www.ets.org/gre.

Students who do not possess a bachelor's degree in chemical engineering may be required to complete a department-designated sequence of undergraduate courses with grade of "B" or higher in each course or must participate in a summer transition program, for students with bachelor's degrees in either another engineering discipline or basic science (e.g., physics, chemistry or biology). In all cases, an applicant must have taken a course in differential equations prior to their matriculation.

Typical undergraduate course sequences (in preparation for graduate courses) may include, but are not limited to, the following courses:

ECH 3023	Mass and Energy Balances I	(3)
ECH 3024	Mass and Energy Balances II	(3)
ECH 3101	Chemical Engineering Thermodynamics	(3)
ECH 3266	Introductory Transport Phenomena	(3)
ECH 3418	Separations Processes	(3)
ECH 3854	Chemical Engineering Computations	(3)
ECH 4267	Advanced Transport Phenomena	(3)
ECH 4504	Kinetics and Reactor Design	(3)

Additional courses in subjects including mathematics, chemistry, physics, and general engineering also may be required. Departmental financial support may not be available for graduate students taking undergraduate courses. Up to six semester hours of 4000-level coursework approved by the department may be counted as graduate electives. Transfer credit from another institution is limited to six semester hours with departmental approval. Acceptance of equivalent courses is evaluated on a case-by-case basis, following petition to the Graduate Committee. Departmental financial support may not be available for graduate students taking undergraduate courses.

Eligible candidates for the summer transition program for non-ChE majors, which would replace the majority of the above course requirements, will be identified and notified by the Graduate Admissions Committee. Additional information about the summer transition program can be found below and at the departmental web site or by contacting the Graduate Coordinator.

Degree Requirements

The Department of Chemical and Biomedical Engineering offers both thesis-type and course-type (non-thesis) options leading to the Master of Science (MS) degree. Each semester, all graduate students are required to enroll in and attend ECH 5935r: Chemical Engineering Seminar (0) (S/U grade only). In addition, all students are required to take required safety training courses and annual refreshers. All graduate students are required to attend the Program for Instructional Excellence (PIE) Teaching Conference/ TA Orientation (pie.fsu.edu/PIE-TA-Orientations-Conference) to prepare for teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. For international graduate students, the SPEAK (Speaking Proficiency English Assessment Kit) is a test for evaluating the English speaking ability of non-native speakers of English. The SPEAK test is administered by the Center for Intensive English Studies to international students who have been appointed or will be appointed as teaching assistants in an academic department. The SPEAK exam requirement must be cleared (scores greater than 45 or 50 for graders or TAs, respectively) before students can serve as teaching assistants.

I. Thesis Option (thirty semester hours)

The thesis-type master's degree is awarded upon successful completion of the following requirements:

1. Twelve semester hours of chemical engineering core courses (see below);
2. Nine semester hours of approved electives;
3. Nine semester hours of ECH 5971r: Thesis (1-12) (S/U grade only);
4. Oral defense of the master's thesis, ECH 8976: Thesis Defense (0) (P/F grade only);
5. Registration and attendance at all departmental seminars,

ECH 5935r: Chemical Engineering Seminar (0) (S/U grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Required Core Engineering Courses (twelve semester hours)

ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5126 Advanced Chemical Engineering Thermodynamics I (3)
ECH 5261 Advanced Transport Phenomena I (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)
ECH 8976 Thesis Defense (0) (P/F grade only)

Elective Courses (nine semester hours)
Typical chemical engineering elective courses:
ECH 5262 Advanced Transport Phenomena II (3)
ECH 5526 Advanced Reactor Design (3)
ECH 5828 Introduction to Polymer Science and Engineering (3)
ECH 5934r Special Topics in Chemical Engineering (3)
ECH 5841 Advanced Chemical Engineering Mathematics II (3)
ECH 5852 Advanced Chemical Engineering Computations (3)
ECH 5905 Directed Individual Study (3)
ECH 5910 Supervised Research (3)
ECH 6272 Molecular Transport Phenomena (3)

Other elective courses may be found in the University Graduate Bulletin.

Thesis Hours (nine semester hours)
ECH 5971r Thesis (1-12) (S/U grade only.)

In addition to the thirty semester hours of coursework and thesis, an oral examination in defense of the thesis (ECH 8976) is required for the MS in the chemical engineering thesis option.

II. Course (non-thesis) Option (thirty-three semester hours)

The course-type master's degree is awarded upon successful completion of the following requirements:

1. Twelve semester hours of chemical engineering core courses (see below);
2. Twenty-one semester hours of approved electives;
3. Registration and attendance at all departmental seminars, ECH 5935r: Chemical Engineering Seminar (0) (S/U grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements.

No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.
Note: Departmental support is generally not available for students pursuing a non-thesis master's degree.

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Note: Departmental support is generally not available for students pursuing a non-thesis master's degree.

Required Courses (twelve semester hours)
ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5126 Advanced Chemical Engineering Thermodynamics I (3)
ECH 5261 Advanced Transport Phenomena I (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)

Elective Courses (twenty-one semester hours)
Typical chemical engineering elective courses:
ECH 5262 Advanced Transport Phenomena II (3)
ECH 5526 Advanced Reactor Design (3)
ECH 5828 Introduction to Polymer Science and Engineering (3)
ECH 5934r Special Topics in Chemical Engineering (3)
ECH 5841 Advanced Chemical Engineering Mathematics II (3)
ECH 5852 Advanced Chemical Engineering Computations (3)
ECH 5905 Directed Individual Study (3)
ECH 5910 Supervised Research (3)
ECH 6272 Molecular Transport Phenomena (3)
Other elective courses may be found in the University Graduate Bulletin

Doctor of Philosophy (PhD)

Admission Requirements

1. Fulfillment of the Department's admission and core course requirements for the master's degree or its substantive equivalent (see above);

2. Maintenance of a high scholastic record for graduate coursework at the previous college or university attended;

3. Demonstrated proficiency in conducting research in chemical engineering by passing the departmental PhD Qualifying Examination (see PhD Qualifying Examination requirements below and on the departmental web site for more details).

Students who meet the admission requirements are encouraged to apply directly for the PhD program. Students who maintain a 3.0 graduate GPA and demonstrate proficiency in conducting research in chemical engineering by passing the departmental PhD Qualifying Examination (see PhD Qualifying Examination requirements below and on the departmental Web site for more details) are admitted to PhD candidacy if they have satisfied departmental core course requirements for the master's degree. Students who fulfill these requirements may elect, upon approval of the Graduate

Committee and major supervisor, to proceed directly toward the PhD without first obtaining a thesis-based master's degree.

Students with a thesis-type master's degree in chemical engineering from the FAMU-FSU College of Engineering may, with approval of the Graduate Committee and major professor, take nine additional approved semester hours beyond the master's requirements to satisfy the thirty-three hour course requirement for the PhD. All other requirements must be fulfilled as stated below.

Students with master's degrees from other institutions will be given a specific course plan by the departmental Graduate Committee and have the option of transferring up to six hours towards their PhD requirements.

Degree Requirements

Each semester, all graduate students are required to enroll in and attend ECH 5935r: Chemical Engineering Seminar (0) (S/U grade only). In addition, all students are required to take required safety training courses and annual refreshers. All graduate students are required to attend the Program for Instructional Excellence (PIE) Teaching Conference/TA Orientation (pie.fsu.edu/PIE-TA-Orientations-Conference) during the summer prior to their graduate enrollment to prepare for teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. For international graduate students, the SPEAK (Speaking Proficiency English Assessment Kit) is a test for evaluating the English speaking ability of non-native speakers of English. The SPEAK test is administered by the Center for Intensive English Studies to international students who have been appointed or will be appointed as teaching assistants in an academic department. The SPEAK exam requirement must be cleared (scores greater than 45 or 50 for graders or TAs, respectively) before students can serve as teaching assistants or progress to full PhD candidate status.

Fifty-seven semester hours and the following requirements must be completed successfully for the award of the PhD degree in Chemical Engineering:

1. Passage of ECH 8965: Doctoral Preliminary Examination within two consecutive exam attempts (see PhD Qualifying Examination requirements below for more details). Successful completion will result in formal admission to PhD candidacy;
2. Completion of thirty-three semester hours of advanced coursework (including twelve semester hours of core graduate coursework as indicated above);
3. Completion of at least twenty-four semester hours of dissertation research, ECH 6980r: Dissertation (1-9) (S/U grade only);
4. Registration and attendance at all departmental seminars, ECH 5935r: Chemical Engineering Seminar (0) (S/U grade only);
5. Selection of a research topic and major professor(s);
6. Formation of a supervisory committee in consultation with the major professor(s);
7. Submission and defense of a prospectus on the dissertation topic to the supervisory committee. Successful completion will result in formal admission to candidacy for the PhD degree;
8. One semester teaching assistantship in an undergraduate laboratory;
9. Presentation of a research topic at one local, regional, national or international professional meeting;
10. Submission or publication of scholarly articles based on original dissertation research in peer-reviewed journals;
11. Satisfaction of the University residency requirement; and
12. Successful passage of ECH 8985: Dissertation Defense (0) (P/F grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Program in Biomedical Engineering

Dramatic advances in health care and medical technology made possible by the merger of engineering and medicine have prompted the development of new graduate degree programs in biomedical engineering at many of the top institutions in the United States. Currently, biomedical engineering is the most rapidly growing graduate engineering discipline in the U.S with expectations of more labor force growth than any other engineering discipline over the next ten years. The overall goal of this program is to implement education and research in biomedical engineering that will prepare graduates for industrial, governmental, and academic careers in clinical research, bioengineering, biotechnology, and related professions. Biomedical engineers analyze and design solutions to problems in medicine and biology, with the goal of improving the quality and effectiveness of patient care.

The graduate program in biomedical engineering (BME) provides special emphasis in cellular and tissue engineering, biomaterials and bioimaging. Advanced engineering, medicine, chemistry, physics, and biology students will gain the necessary knowledge and skills that will allow them to contribute to improved technology in health and medical care, and to solve real-world engineering problems in biology and medicine, both in research and industrial settings.

The thesis MS degree requires thirty semester hours for completion, the non-thesis MS degree requires thirty-three semester hours, and the PhD requires a total of fifty-seven semester hours.

Master of Science (MS)

Admission Requirements

1. A baccalaureate degree in chemical engineering, or an allied field from an accredited college or university;

2. Fulfillment of the requirements for the baccalaureate degree or its equivalent. Students may be required to satisfy deficiencies by taking undergraduate courses or can enroll in a transitional summer program if they do not have a degree from an accredited chemical engineering degree program;

3. An undergraduate or graduate GPA of 3.0 (on a 4.0 scale) or higher;

4. A minimum revised GRE percentile of at least 48% on the verbal portion and 75% on the quantitative portion of the test. It is noted that the GRE percentiles of funded graduate students on assistantship are typically higher than these minima;

5. Three letters of recommendation from persons familiar with the student's work and background;

6. A personal statement of professional goals; and

7. International students: For students whose native language is not English and who did not graduate from an accredited US institution with either a BS or MS degree, minimum scores on the TOEFL are 550 (paper-based), 213 (computer-based), or 80 (Internet-based).

Note: All students must present GRE scores prior to being admitted. Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this new test, go to www.ets.org/gre.

Students who do not possess a bachelor's degree in chemical engineering may be required to complete a department-designated sequence of undergraduate courses with grade of "B" or higher in each course or must participate in a summer transition program for students with bachelor's degrees in either another engineering discipline or basic science (e.g., physics, chemistry or biology). In all cases, an applicant must have taken a course in differential equations prior to their matriculation.

Typical undergraduate course sequences (in preparation for graduate courses) may include, but are not limited to, the following courses:

ECH 3023 Mass and Energy Balances I	(3)
ECH 3024 Mass and Energy Balances II	(3)
ECH 3266 Transport Phenomena	(3)
ECH 3418 Separations Processes	(3)
ECH 4267 Transport Phenomena II	(3)
ECH 4504 Kinetics and Reactor Design	(3)
BME 4403C Quantitative Anatomy and Systems Physiology I	(3)
BME 4404C Quantitative Anatomy and Systems Physiology II	(3)

In addition, students should also have taken: Biological Sciences I and II (if not included in their degree program). Additional courses in subjects including mathematics, chemistry, physics and general engineering may also be required. Up to six semester hours of 4000-level coursework approved by the department may be counted as graduate electives. Transfer credit from another institution is limited to six semester hours with departmental approval. Acceptance of equivalent courses is evaluated on a case-by-case basis, following petition to Graduate Committee.

Eligible candidates for the summer transition program for non-BME majors, which would replace the majority of the above course requirements, will be identified and notified by the Graduate Admissions Committee. Additional information about the summer transition program can be found below and at the departmental web site or by contacting the Graduate Coordinator.

Degree Requirements

The Department of Chemical and Biomedical Engineering offers both thesis-type and course-type (non-thesis) options leading to the MS degree. Each semester, all graduate students are required to enroll in and attend the departmental seminar, BME 5935r: Biomedical Engineering Seminar (0) (S/U grade only). In addition, all students are required to take required safety training courses and annual refreshers. All graduate students are required to attend the Program for Instructional Excellence (PIE) Teaching Conference/ TA Orientation (/pie.fsu.edu/PIE-TA-Orientations-Conference) during the summer prior to their graduate enrollment to prepare for teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. For international graduate students, the SPEAK (Speaking Proficiency English Assessment Kit) is a test for evaluating the English speaking ability of non-native speakers of English. The SPEAK test is administered by the Center for Intensive English Studies to international students who have been appointed or will be appointed as teaching assistants in an academic department. The SPEAK exam requirement must be cleared (scores greater than 45 or 50 for graders or TAs, respectively) before students can serve as teaching assistants.

I. Thesis Option (thirty semester hours)

The thesis-type master's degree is awarded upon successful completion of the following requirements:

6. Twelve semester hours of chemical engineering core courses (see below);
7. Nine semester hours of approved electives;
8. Nine semester hours of BME 5971r: Thesis (1-9) (S/U grade only);
9. Oral defense of the master's thesis, BME 8976: Thesis Defense (0) (P/F grade only);
10. Registration and attendance at all departmental seminars, BME 5935r: Biomedical Engineering Seminar (0) (S/U grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Required Courses (twelve semester hours)

ECH 5052 Research Methods in Chemical Engineering	(3)
ECH 5261 Advanced Transport Phenomena I	(3)
ECH 5840 Advanced Chemical Engineering Mathematics I	(3)
BME 8976 Thesis Defense (0) (P/F grade only)	

XXX XXXX Approved course in physiology or cell biology (3)

An approved course in physiology or cell biology is required for completion of the graduate BME degree. Approved courses include: PCB 5137: Advanced Cell Biology; PCB 5525: Molecular Biology; PCB 5795: Sensory Physiology; and PCB 5845: Cell and Molecular Neuroscience. Additional courses may satisfy the physiology/biology requirement but require petition to the Graduate committee for approval as a core substitute.

Elective Courses (nine semester hours)

Elective Courses (nine semester hours)
Typical biomedical engineering elective courses:
BME 5086 Biomedical Engineering Ethics (3)
BME 5620 Biophysical Chemistry and Biothermodynamics (3)
BME 5905 Directed Individual Study (3)
BME 5910 Supervised Research (3)
BME 5937r Special Topics in Biomedical Engineering (3)
BME 6530 NMR and MRI Methods in Biology and Medicine (3)
BME 6938 Special Topics in Biomedical Engineering (3)

Other elective courses may be found in the University Graduate Bulletin.

Thesis Hours (nine semester hours)

BME 5971r Thesis (1- 9) (S/U grade only)

In addition to the thirty semester hours of coursework and thesis, an oral examination in defense of the thesis (BME 8976) is required for the MS in the chemical engineering thesis option.

II. Course (non-thesis) Option (thirty-three semester hours)

The course-type master's degree is awarded upon successful completion of the following requirements:

1. Twelve semester hours of chemical engineering core courses (see below);
2. Twenty-one semester hours of approved electives;
3. Registration and attendance at all departmental seminars, BME 5935r: Biomedical Engineering Seminar (0) (S/U grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Note: Departmental support is generally not available for students pursuing a non-thesis master's degree.

Required Courses (twelve semester hours)
ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5261 Advanced Transport Phenomena I (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)
XXX XXXXApproved course in physiology or cell biology (3)

An approved course in physiology or cell biology is required for completion of the graduate BME degree. Approved courses include: PCB 5137: Advanced Cell Biology; PCB 5525: Molecular Biology; PCB 5796: Sensory Physiology; and PCB 5845: Cell and Molecular Neuroscience. Additional courses may satisfy the physiology/biology requirement but require petition to the Graduate committee for approval as a core substitute.

Elective Courses (twenty-one semester hours)

Typical biomedical engineering elective courses:
BME 5086 Biomedical Engineering Ethics (3)
BME 5620 Biophysical Chemistry and Biothermodynamics (3)
BME 5905 Directed Individual Study (3)
BME 5910 Supervised Research (3)
BME 5937r Special Topics in Biomedical Engineering (3)
BME 6530 NMR and MRI Methods in Biology and Medicine (3)
BME 6938 Special Topics in Biomedical Engineering (3)

Other elective courses may be found in the University Graduate Bulletin.

Doctor of Philosophy (PhD)

Admission Requirements

1. Fulfillment of the department's admission and core course requirements for the chemical engineering master's degree or its substantive equivalent (see above);
2. Maintenance of a high scholastic record for graduate coursework at the previous college or university attended; and
3. Demonstrated proficiency in conducting research in chemical engineering by passing the departmental PhD Qualifying Examination (see PhD Qualifying Examination requirements below and on the departmental web site for more details).

Students who meet the admission requirements are encouraged to apply directly for the PhD program. Students who maintain a 3.0 graduate GPA and demonstrate proficiency in conducting research in biomedical engineering by passing the departmental PhD Qualifying Examination (see PhD Qualifying Examination requirements below and on the departmental web site for more details) are admitted to PhD candidacy if they have satisfied the departmental core course requirements for the master's degree. Students who fulfill these requirements may elect, upon approval of the Graduate Committee and major supervisor, to proceed directly toward the PhD without first obtaining a thesis based master's degree.

Students with a thesis-type master's degree in chemical or biomedical engineering from the FAMU-FSU College of Engineering may, with approval of the Graduate Committee and major professor, take nine additional approved semester hours beyond the thesis-type master's course requirements to satisfy the thirty-three hour course requirement for the PhD. All other requirements must be fulfilled as stated below.

Students with master's degrees from other institutions will be given a specific course plan by the departmental Graduate Committee and have the option of transferring up to six hours towards their

PhD requirements.

Degree Requirements

Each semester, all graduate students are required to enroll in and attend the departmental seminar, BME 5935r: Biomedical Engineering Seminar (0) (S/U grade only). In addition, all students are required to take required safety training courses and annual refreshers. All graduate students are required to attend the Program for Instructional Excellence (PIE) Workshop to prepare for teaching assistant (TA) duties. This requirement is mandatory regardless of the student's classification as a teaching assistant or research assistant. For international graduate students, the SPEAK (Speaking Proficiency English Assessment Kit) is a test for evaluating the English speaking ability of non-native speakers of English. The SPEAK test is administered by the Center for Intensive English Studies to international students who have been appointed or will be appointed as teaching assistants in an academic department. The SPEAK exam requirement must be cleared (scores greater than 45 or 50 for graders or TAs, respectively) before students can serve as teaching assistants or progress to full PhD candidate status.

Fifty-seven semester hours and the following requirements must be completed successfully for the award of the PhD degree in Biomedical Engineering, as follows:

1. Passage of BME 8965: BME Doctoral Qualifying Examination within two consecutive exam attempts (see PhD Qualifying Examination requirements below for more details). Successful completion will permit the student to continue work towards PhD candidacy;
2. Completion of a minimum of thirty-three semester hours of advanced coursework (including twelve semester hours of core coursework);
3. Completion of at least twenty-four semester hours of dissertation research, BME 6980r: Dissertation (1-9) (S/U grade only);
4. Registration and attendance at all departmental seminars, BME 5935r: Biomedical Engineering Seminar (0) (S/U grade only);
5. Selection of a research topic and major professor(s);
6. Formation of a supervisory committee in consultation with the major professor(s);
7. Submission and defense of a prospectus on the dissertation topic to the supervisory committee. Successful completion will result in formal admission to candidacy for the PhD degree;
8. One semester teaching assistantship in an undergraduate laboratory;
9. Presentation of a research topic at one local, regional, national, or international professional meeting;
10. Submission or publication of at least one scholarly article based on original dissertation research in peer-reviewed journals;
11. Satisfaction of the University residency requirement; and
12. Successful passage of BME 8985: Dissertation Defense (0) (P/F grade only).

No course with a grade below "C" will be counted toward fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted toward fulfillment of degree requirements.

Transition Program for Non-Chemical or Non-Biomedical Engineering Majors

The Graduate Committee of the Department of Chemical and Biomedical Engineering has instituted an accelerated transition program for prospective graduate students who are non-Chemical or Biomedical Engineering Majors. These students should follow the summer preparatory curriculum shown below in order to formally enter the FAMU-FSU Chemical and Biomedical Engineering graduate program. More details are available online at the departmental web site.

Target Applicants and Eligibility

1. Applicants with non-ChE or non-BME BS degrees in engineering.
2. Applicants with Physics BS degrees.
3. Applicants with Chemistry, Biochemistry, or Biology BS degrees having strong math skills (through Ordinary Differential Equations).

Transition Program Requirements

The transition program requires that students take one online course and one accelerated transition course during the preparatory summer prior to taking the graduate core courses offered in the Fall semester, as follows:

1. ACS online course or equivalent – Beakers to Barrels: Chemical Engineering for Chemists Online Short Course. This course will be replaced in subsequent years by a departmental online course;
2. Graduate preparatory course – combined summer course of Mass and Energy Balances, Transport I and II, and Thermodynamics for accelerated preparation of entering students. Two three credit hour six-week courses (Summer terms B and C) will be taken during the Summer before core ECH/BME coursework; and
3. Required completion of the graduate section of ECH 4504 – Kinetics and Reactor Design.

Requirements 1 and 2 must be completed successfully prior to matriculation in the Fall Semester core graduate courses. Students who do not successfully complete all three requirements before their third semester in the graduate program will not be allowed to continue.

Notes:

- Students needing to take any mathematics course(s) through

differential equations would need to complete these prior to entrance. Students needing a course in ordinary differential equations should take ECH 3301: Process Analysis.

- Other graduate electives or thesis hours can be taken during the first two years if prerequisites are met.
- Courses prior to the first Fall semester will be at the student's expense or supported by the department based on available funds.
- The PhD Qualifying Examination (see below) follows the first Spring semester.

Academic Regulations and Procedures for Graduate Students

Selection of Course Plan

Selection of courses for the first semester should be done in consultation with the departmental Graduate Coordinator. All students must also register for the departmental seminar ECH/BME 5935r, Chemical/Biomedical Engineering Seminar, every semester. After the first semester in the graduate program, the supervising major professor will develop a course plan for MS-thesis and PhD candidates. For course-based MS students, the departmental Graduate Coordinator will assist in developing the course plan, acting as the de facto supervisor.

Selection of Major Professor

All full-time graduate students following the MS thesis or PhD options are required to select a research topic and major professor by the end of the first term in which they enter the Department. A form for this purpose is available online at the departmental web site. The completed form should be submitted to the departmental Graduate Coordinator.

The major professor is responsible for directing the student's research and progress toward a degree. Once a major professor has been approved, a supervisory committee should be established and a program of study prepared in consultation with the major professor before the end of the second semester of enrollment in the graduate program.

Supervisory Committee

The supervisory committee for a master's degree candidate must consist of a minimum of three faculty members with graduate faculty status. The major professor is the chair of the supervisory committee and must be a faculty member from the Department of Chemical and Biomedical Engineering. At least one other member of the committee must be from the Department of Chemical and Biomedical Engineering; the third member of the committee should be from outside the department. Additional members may be appointed to the committee if deemed desirable by the major professor.

The supervisory committee for a doctoral candidate must have at least four members (including major professor) with graduate faculty status. The major professor is the chair of the supervisory committee and must be a faculty member from the Department of Chemical and Biomedical Engineering. Two of the remaining members of the committee must be from the Department of Chemical and Biomedical Engineering, and the fourth member must be from outside the Department. Additional members may be appointed if deemed desirable. Members of the supervisory committee must be approved by the Department Chair.

Program of Study

A program of study should be prepared by the student in conjunction with the major professor and submitted to the supervisory and graduate committees. For graduate students working toward a thesis-based MS or PhD, the program of study should be defined based on the student's background and research objectives, in consultation with the major professor and supervisory committee. For graduate students working toward a course-based MS, the program of study should be defined in consultation with the Graduate Committee. The program of study is a complete plan of courses to be taken and research objectives to be achieved. On approval of the program of study, this form will also be placed in the student's permanent file. If changes to the initially approved program of study become necessary, a new program of study form must be submitted for approval.

PhD Qualifying Examination and Prospectus

All students admitted to the PhD program will be required to take the PhD qualifying examination after completion of the core course ECH 5052, Research Methods in Chemical Engineering. A research topic will be assigned by the graduate qualifying examination committee. The student must write a research proposal and defend it orally in front of the graduate qualifying-examination committee by the end of the first Summer Semester, unless otherwise approved by the Graduate Committee. This examination must be passed within two consecutive attempts, or the individual will not be allowed to continue as a doctoral student. For additional details, see PhD Qualifying Examination Requirements on the departmental Web site.

Upon successful completion of the qualifying examination, the student may continue work toward the PhD degree. Within five semesters of admission to the graduate program (within the three semesters following the PhD qualifying examination), students are expected to present a prospectus detailing their program of study for PhD dissertation work. If this timeframe cannot be met, the student must petition the graduate program chair for special dispensation, stating specific reasons the delay. The PhD prospectus will consist of a written plan of research that must be orally defended in a formal presentation before the student's major professor and supervisory committee. After the successful completion of the PhD prospectus, the student will be admitted formally to the PhD candidacy and their research program.

The doctoral committee should provide continual feedback to the PhD candidate throughout the progression of the student's research. As such, it is important to maintain regular and at least annual meetings of the student and doctoral committee so that updates on research can be presented and feedback can be received by the student. For additional details, see Academic Regulations and Procedures for Graduate Students and the College of Engineering's website.

Maintenance of Good Standing

In order to maintain good standing in the department, the student must maintain an overall GPA of at least 3.0, with no more than two grades in the "C" range. No more than one course in the "C" range will be counted toward fulfilling the degree requirements. No grades below "C" will be counted toward degree requirements. Students without an undergraduate degree in chemical or biomedical engineering should obtain a grade of "B" or better in all required undergraduate courses.

Master's and doctoral degree students must submit a brief written annual report on research progress, goals, and completed courses during the Spring Semester for evaluation by the graduate and supervisory committees. A form for this purpose is available on the departmental web site. An assessment of the progress of the student in research and courses by the student's supervisory committee will be placed in the student's permanent file. Continuance of assistantships and/or tuition waivers is contingent upon satisfactory evaluations.

Time to Degree Completion

Students with undergraduate degrees in chemical or biomedical engineering normally complete the thesis-type master's program in four to five semesters, including one Summer Semester. Although the availability of departmental support ultimately is subject to budgetary constraints, the Graduate Committee will not normally recommend continuation of assistantships and tuition waivers beyond a period of two years subsequent to the student's admission to the master's program. Students without an undergraduate degree in chemical or biomedical engineering will be given one additional year for completion. However, these students are normally not supported financially during their first year, when they are primarily taking preparatory undergraduate chemical/biomedical engineering courses.

Students with undergraduate degrees in chemical or biomedical engineering normally complete the doctoral program within five years of their admission to graduate school, with reduced time expected if the student enters the program with a master's degree. Although the availability of departmental support ultimately is subject to budgetary constraints, departmental/college commitments and research grant availability, doctoral candidates will be recommended for departmental support only for a period of three years subsequent to being admitted to candidacy for the doctoral program following the successful completion of the PhD Qualifying Examination. PhD students should submit and defend a prospectus on the dissertation topic to the supervisory committee within five semesters from admission to the graduate program.

Assistantship Duties

Graduate student support is generally in the form of research or teaching assistantships (RAs or TAs), although University fellowships are also available. Research assistantships derived from contracts and grants focus mainly on the performance of research leading to their degree but may be required to perform service to the department in the form of minimal teaching duties. However, research assistants who receive departmental support for tuition waivers will be required to grade, TA, or run recitation sections for lecture courses in addition to research responsibilities. Doctoral candidates will also have to satisfy the teaching requirements of the degree (TA for one laboratory course). Typical TA duties include grading homework and/or exams, conducting problem-solving recitation sections, and having office hours for answering student questions. Specific duties are assigned by the course instructor.

University Doctoral Residency Requirements

The residency requirement for the Department of Chemical and Biomedical Engineering states that after having finished thirty (30) semester hours of graduate work or being awarded the Master's degree, the student must be enrolled continuously on either the FSU or FAMU Tallahassee campus for a minimum of twenty-four (24) graduate semester hours credit in any period of 12 consecutive months.

Definition of Prefixes

BME—Biomedical Engineering

ECH—Engineering: Chemical

Biomedical Engineering

BME 5086. Biomedical Engineering Ethics (3). Prerequisite: Senior or graduate standing in Biomedical Engineering. This course offers an introduction to the key theories, concepts, principles, and methodology relevant to the development of biomedical professional ethics. The student is facilitated in his/her development of a code of professional ethics by written work, class discussion and case analysis.

BME 5620. Biophysical Chemistry and Biothermodynamics (3). Prerequisites: CHM 4410, CHM 4411, and ECH 3101. This course examines engineering thermodynamics and physical chemistry of living systems, as well as biochemical pH monitoring and analysis.

BME 5905r. Directed Individual Study (1–3). Prerequisite: Instructor permission. Detailed examination of some topic in biomedical engineering. Conducted on a personal basis with the instructor. A maximum of only three semester hours can be used toward the MS or PhD. May be repeated to a maximum of twelve semester hours.

BME 5910. Supervised Research (3). (S/U grade only.) Prerequisites: Graduate standing in Biomedical Engineering and instructor permission. Performance of research project required for the non-thesis MS degree.

BME 5935r. Biomedical Engineering Seminar (0). (S/U grade only.) Prerequisite: Graduate standing in Biomedical Engineering. Presentations by faculty, students, and visiting scientists. Full-time graduate students must enroll each term.

BME 5937r. Special Topics in Biomedical Engineering (3). Prerequisite: Instructor permission. Detailed study of some topic of special interest to biomedical engineers. May be repeated to a maximum of six semester hours in the same term, as topics vary.

BME 5971r. Thesis (1–9). (S/U grade only.) Prerequisite: Graduate standing in Biomedical Engineering. Performance of research and preparation of the master's thesis. May be repeated as often as approved by the department. Only six semester hours can be counted toward the degree requirements. A minimum of six hours is required. May be repeated to a maximum of twelve semester hours.

BME 6530. NMR and MRI Methods in Biology and Medicine

(3). Prerequisite: Doctoral candidate status in Biomedical Engineering. This course investigates MR imaging methods, spin echo methods, Bloch equations, proton diffusion, imaging, and micro-imaging NMR spectrometers in research.

BME 6938r. Special Topics in Biomedical Engineering (3). Prerequisites: Doctoral candidate status in Biomedical Engineering and instructor permission. Detailed study of some topic of special interest to biomedical engineers. May be repeated with different topics to a maximum of six semester hours.

B**ME 6980r. Dissertation** (1–9). Prerequisite: Doctoral candidate status in Biomedical Engineering. Research on the dissertation topic. May be repeated as often as approved by the supervisory committee. May be repeated to a maximum of twenty-four semester hours.

BME 8965r. Doctoral Qualifying Exam (0). (P/F grade only.) Prerequisite: Doctoral candidate status in Biomedical Engineering. All doctoral students must enroll in this course the semester they intend to take the qualifying exam.

BME 8976. Thesis Defense (0). (P/F grade only.) Prerequisite: Instructor permission. All students must register for this course for the term during which they intend to defend their thesis.

BME 8985. Dissertation Defense (0). (P/F grade only.) Prerequisites: Doctoral candidate status in Biomedical Engineering and instructor permission. This course must be included in the final semester schedule for all doctoral students.

Chemical Engineering

ECH 5052. Research Methods in Chemical Engineering (3). Course for first-term graduate students includes instruction in the performance of scientific research, including problem definition, literature review, project proposal development, laboratory and computational research, oral presentations, technical report writing, and professional conduct.

ECH 5126. Advanced Chemical Engineering Thermodynamics I (3). Prerequisite: ECH 3101 or equivalent. Presents the fundamental aspects of classical thermodynamics, and its application to multicomponent, multiphase, and chemically reacting systems. Introduction to the thermodynamics of irreversible processes and statistical mechanics.

ECH 5261. Advanced Transport Phenomena I (3). Prerequisite: ECH 5842 or instructor permission. Development of the fundamental aspects of continuum mechanics in order to describe the transport of momentum, energy, and mass. The basic equations of fluid mechanics are developed, and a number of applications to chemical engineering problems are considered. Also emphasizes boundary conditions at phase interfaces, and derivation of the point and macroscopic balance equations for these transport processes.

ECH 5262. Advanced Transport Phenomena II (3). Prerequisite: ECH 5261. Rigorous analysis of transport phenomena at the micro- and macroscopic scales in systems with mixtures of several components and featuring more than one phase. Boundary layer flows, mixing effects, transport in porous and structured media, transport processes at interfaces.

ECH 5526. Advanced Reactor Design (3). Prerequisite: ECH 4504. A study of catalytic and noncatalytic reactor design for homogeneous and heterogeneous systems. Includes non-ideal flow and mixing, including distribution functions and modeling.

ECH 5828. Introduction to Polymer Science and Engineering (3). Prerequisites: Graduate standing and instructor permission. This course explores the classification and characterization of polymeric systems. Topics include the introduction to the physical chemistry, synthesis and reaction kinetics, reaction engineering, characterization, and the processing and properties of polymeric systems.

ECH 5840. Advanced Chemical Engineering Mathematics I (3). Prerequisite: ECH 4403 and MAP 3305. This course is an introduction at the graduate level to the mathematical formulation and solution of chemical engineering problems involving transport phenomena and reaction. Course includes dimensional analysis and scaling, linear algebraic, ordinary, and partial differential equations, vector and tensor analysis, Fouier series, Integral (Fouier and Laplace) transforms, boundary value problems.

ECH 5841. Advanced Chemical Engineering Mathematics II (3). Prerequisite: ECH5840. Advanced mathematical techniques for chemical engineering applications presented within a unified framework of operator-theoretic methods. Green's functions solution of partial differential equations, regular and singular perturbation techniques, boundary value problems, and boundary-element and finite-element techniques.

ECH 5852. Advanced Chemical Engineering Computations (3). Prerequisites: ECH 5841. Presentation of the central concepts of practical numerical analysis techniques and their application to chemical engineering problems. Includes interpolation and approximation theory, solution of linear and nonlinear systems, solution of ordinary differential and partial differential equations, single step and multi-step methods, stiff systems, and two-point boundary problems.

ECH 5905r. Directed Individual Study (1–3). Prerequisite: Instructor permission. Detailed examination of some topic in chemical engineering. Conducted on a personal basis with the instructor. May be repeated with different topics. Only three semester hours may be used toward the MS degree.

ECH 5910. Supervised Research (3). (S/U grade only.) Prerequisite: Instructor permission. Performance of research project required for the nonthesis MS degree.

ECH 5934r. Special Topics in Chemical Engineering (3). Prerequisite: Instructor permission. Detailed study of some topic of special interest to chemical engineers. Typical topics might include: aerosol mechanics, polymer processing, combustion, bioseparations, fluidization. May be repeated to a maximum of six semester hours with different topics. May be repeated in the same semester.

ECH 5935r. Chemical Engineering Seminar (0). (S/U grade only.) Presentations by faculty, students, and visiting scientists. Full-time graduate students must enroll each term.

ECH 5971r. Thesis (1–12). (S/U grade only.) Performance of research and preparation of master's. May be repeated as often as approved by the department. Only six hours can be counted toward degree requirements. A minimum of six semester hours is required.

ECH 6272. Molecular Transport Phenomena (3). Prerequisite: Graduate standing. This course covers the theory of transport phenomena from a molecular viewpoint. Classical concepts from statistical mechanics and derivation of the Boltzmann equation. The transport theory and properties of dilute gases are developed from the Boltzmann equation, with a more general treatment given for the case of liquids. A brief introduction to time correlation functions is presented.

ECH 6980r. Dissertation (1–24). (S/U grade only.) Prerequisite: Doctoral candidate status. Research on the dissertation topic. May

be repeated as often as approved by the supervisory committee. A maximum of twenty-four hours can be applied to the doctoral degree.

ECH 8965r. Doctoral Preliminary Exam (0). (P/F grade only.) All doctoral students must enroll in this course the semester they intend to take the qualifying exam.

ECH 8976. Thesis Defense (0). (P/F grade only.) Prerequisites: ECH 5126, ECH 5261, and ECH 5842. Corequisite: ECH 5971r. All students must register for this course for the term in which they intend to defend their thesis.

ECH 8985. Dissertation Defense (0). (P/F grade only.) Corequisite: ECH 6980r. Must be included in the final semester schedule for all doctoral students.

Department of Civil and Environmental Engineering

Faculty

Chair: Tawfiq, Kamal S.
Professors: Ping, Wei-Chou Virgil; Twafiq, Kamal S.; Wekezer, Jerry W.
Associate Professors: AbdelRazig, Yassir; Abichou, Tarek; Hilton, Amy B. Chan; Huang,Wenrui; Mtenga; Moses, Renatus; Sobanjo, John; Spainhour, Lisa
Assistant Professors: Chen, Gang; Rambo-Roddenberry, Michelle

The Department of Civil and Environmental Engineering has the mission of teaching the fundamentals of civil engineering science, analysis, design, and management to empower students to assume careers as professional engineers, to conduct basic and applied research, to improve the state of knowledge of civil engineering, to serve as a source of information and advice to the community on engineering matters, and to assist in the continuing education of professional engineers and other interested individuals. The department has a special mission to provide an opportunity for a civil engineering education for minorities and women.

Opportunities and Facilities. Many opportunities exist in the field of civil engineering that encompass planning, designing, and managing a variety of projects. Your work could be on site at a project or at a computer work station. Civil and environmental engineers often find themselves involved in many of the public work projects funded by federal, state, and municipal governments, as well as those projects undertaken by the private sector. As a structural engineer, you might analyze and design structures out of steel, concrete, aluminum, timber, plastic, and other new materials that are able to support required loads and withstand natural disasters. An environmental engineer, with a background in either physical, chemical, or biological science, helps to prevent and solve environmental problems. Engineers in the geotechnical realm apply technology, field test information, and laboratory analyses related to mechanics and mathematics to create the infrastructure facilities within and on top of the earth. The structure and stability of soils determine how and where to construct tunnels, pipelines, and deep foundations as well as highways and other buildings. In hydraulic and water resources engineering, you might design, construct, or maintain facilities related to the quality and quantity of water, flood prevention, wastewater treatment, and water front erosion protection. As a professional in transportation engineering, your purpose is to move people and things in a safe and efficient manner locally and through mass transportation systems. Transportation facilities include highways, airfields, railroads, and sea ports. Several courses are also offered in construction engineering.

Instructional equipment includes the MTS structures and material testing systems with computer control for data acquisition and analysis, triaxial, CBR, LBR, and shear testing equipment and seismographs for in situ and laboratory measurements of engineering properties of soils and rocks; and a self-contained glass-sided tilting flume for investigations of flow phenomena and sediment transport. A complete stand-alone automated data acquisition and analysis system is available for undergraduate student laboratory work and research. A fully equipped water quality testing lab as well as portable field testing kits are used both for classroom teaching as well as for student research and design projects.

Students have access to a large number and variety of computer systems. A network of nearly 700 computing devices is available for the academic and research efforts of the college.

The department houses the Center for Accessibility and Safety for an Aging Population (ASAP).

ASAP concentrates its efforts on Florida where it is projected that 22 percent of the population will be 65 or older as early as 2020, the highest percentage in the nation, but the center's research is valuable in addressing transportation issues for an aging population nationwide. The center addresses two of USDOT's strategic goals: improving highway safety and strengthening transportation planning. Providing seniors with safe and convenient access to the goods and services they need to participate fully in society is a key issue explored by ASAP personnel. The center also focuses on transportation issues of rural and minority segments within the elderly population. The center focuses on four interdisciplinary areas: (1) Accessibility and community connectivity among older adults; (2) Human factors affecting the older population, especially regarding acceptance of emerging technologies; (3) Geometric design research, especially regarding elder crash mitigation and (4) Health, wellness and safety of seniors as it relates to multimodal transportation and emergency operations. ASAP also supports educational and outreach activities, including an annual K-12 Transportation Day, brown bag lunches, student research seed grants and dissertation fellowships and annual student research colloquia.

Additionally, the department manages a large research program called TraCS Florida. This program is funded by a grant from the Florida Department of Transportation (FDOT) to provide Florida law enforcement agencies (LEAs) with a cost effective way to collect and transmit electronic crash and citation data, to submit crash data electronically to the Florida Department of Highway Safety and Motor Vehicles (DHSMV), and to submit citation data to local county clerks of court. The TraCS Florida team uses TraCS to develop Florida specific forms to meet the data submission requirements set by DHSMV.

Programs Offered. The department offers a program of study for the Bachelor of Science (BS) degree in civil engineering. The civil engineering major is broad-based, emphasizing all aspects of civil engineering practice, including structural analysis and design; geotechnical, construction/transportation, hydraulics, and water resources; and environmental engineering. Within the civil engi-

neering program, the environmental engineering major is a course of study that focuses primarily on environmental engineering, hydraulics, hydrology, water resources, and the management of all types of wastewater systems. The department also offers a minor in environmental engineering science. Regardless of focus, all students are taught to apply state-of-the-art technologies to the solutions of problems in these areas.

The department offers graduate programs leading to the Master of Science (MS) and Doctor of Philosophy (PhD) degrees in civil engineering. Within the MS program, the Master of Engineering (MEng) option is available. These programs provide areas of concentration in structural, geotechnical, environmental/water resources, and construction/transportation engineering. For more detailed information, please see the CEE Graduate Handbook which is available on the department website the College of Engineering's website.

Program Educational Objectives

Consistent with the mission and goals of the FAMU-FSU College of Engineering and based upon the input and needs of its constituents, the Civil Engineering Program will produce graduates who will achieve the following program educational objectives several years after graduation. Graduates will:

1. Graduates will progress in successful professional careers in civil and environmental engineering or related fields, and/or enroll in studies at the graduate level;
2. Graduates will apply engineering principles to address the needs of society, including sustainability; and practice effective management, communication, and leadership skills;
3. Graduates will respond to the rapid pace of change in civil and environmental engineering by becoming professionally licensed, engaging in ongoing continuing education and participating in professional society activities; and
4. Graduates will contribute to work force diversity as members and leaders of multidisciplinary teams.

.Student Outcomes.

By the time students graduate from the Civil Engineering program, they should attain the following outcomes:

1. An ability to apply knowledge of mathematics through differential equations, science (including calculus-based physics, general chemistry, and one additional area of science), and engineering;
2. An ability to design and conduct civil engineering experiments, as well as to analyze and interpret the resulting data;
3. An ability to design systems, components, or processes in more than one civil engineering context to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;
4. An ability to function on multidisciplinary teams;
5. An ability to identify, formulate, and solve civil engineering problems;
6. An understanding of professional and ethical responsibility, and an ability to explain basic concepts in management, business, public policy, and leadership as well as the importance of professional licensure;
7. An ability to communicate effectively;
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;
9. A recognition of the need for and ability to engage in lifelong learning;
10. A knowledge of contemporary issues;
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice;

Engineering Design

Following engineering design criteria established by the Accreditation Board for Engineering and Technology (ABET), the civil engineering curricula provide excellent design experiences for students. The Faculty of the Department of Civil and Environmental Engineering has carefully integrated design components into the curriculum with increased complexity as students' progress toward graduation. These design components offer opportunities for students to work individually and in teams on meaningful engineering design experiences building upon the fundamental concepts of mathematics, basic sciences, humanities, social sciences, engineering topics, and oral and written communication skills. Design components in engineering course work help students develop an appreciation for and apply the knowledge of the wide variety of courses they have studied. Consequently, they participate in meaningful solutions and effective design development for practical engineering problems.

A majority of the design experiences are integrated into junior and senior level courses. For example, design experience is expanded in the civil engineering curriculum when students have completed EGM 3512 Engineering Mechanics, and progress to EGN 3331 Strength of Materials, then to CES 3100 Structural Analysis. Students are exposed to extensive design experiences in CES 4702 Concrete Design or CES 4605 Steel Design.

A major in environmental engineering includes ENV 4001 Environmental Engineering, which builds on material covered in EES 3040 Introduction to Environmental Engineering Science, CWR3201 Hydraulics, and is followed by CWR 4202 Hydraulic Engineering I and CWR 4101 Engineering Hydrology. CGN 4800 Pre-Senior Design and Professional Issues, and CGN 4802 Civil Engineering Senior Design Project, provide significant, culminating design experiences that are applied to one or two actual engineering situations for students working in multidisciplinary teams and majoring in either civil or environmental engineering.

Additional information about design credits may be obtained from departmental brochures and by contacting faculty advisers at the Department of Civil and Environmental Engineering.

State of Florida Common Program Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program. Students are strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

The following lists the common program prerequisites or their substitutions necessary for admission into this upper-division degree program:

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283
4. MAP X302 or MAC X305
5. CHM X045/X045L or CHMX045C or CHS X440
6. PHY X048/X048L or PHYX048C or PHYX043/X048L
7. PHY X049/X049L or PHYX049C or PHYX044/X049L

Common Program Prerequisites can also be found at http://www.facts.org

Requirements for the Bachelor of Science in Civil Engineering: Civil Engineering Major

In addition to college requirements, a candidate for the BS degree in civil engineering will be expected to successfully complete the following requirements:

Mathematics and Basic Engineering Sciences

CCE 3101	Construction Materials (3)
CEG 2202	Introduction to Geomatics Engineering (3)
CEG 2202L	Introduction to Geomatics Engineering Lab (1)
EGM 3512	Engineering Mechanics (4)
EGN 1004L	First Year Engineering Lab (1)
EGN 2123	Computer Graphics for Engineers (2)
STA 3034	Mathematical Statistics (3)
EGN 3331	Strength of Materials (3)
EGN 3613	Principles of Engineering Economy (2)
EEL 3003	Introduction to Electrical Engineering (3)
EML 3100	Thermodynamics (2)

Group A Science Elective: An additional three-credit hour science elective course is required to allow students to develop increased breadth in the basic sciences, while completing existing curricular requirements. Students should SELECT ONE COURSE from the following group.

BSC 1010C	Biological Science (4)
EVR 3235	Atmospheric Processes (3)
GLY 2010	Principles of Geology (3)
MET 2700	General Meteorology (3)
EVR 3023	Introduction to Marine Environment (3)

Civil Engineering Core Courses

CEG 3011	Soil Mechanics (3)
CCE 3101	Construction Materials (3)
CES 3100	Structural Analysis (4)
CGN 3508L	Civil Engineering Materials Laboratory (1)
CWR 3201	Hydraulics (3)
CWR 3200L	Environmental and Hydraulic Engineering Laboratory (1)
EES 3040	Introduction to Environmental Engineering Science (3)
TTE 3004	Transportation Engineering (3)

Civil Engineering Design and Professional Courses

Students must take the courses in the following areas plus three additional electives* for a total of twenty-one hours credit. To meet the requirement, students may select elective courses (as indicated below) to specialize their degree program to suit their individual objectives.

Structures

CES 4605 Steel Design (3) OR CES 4702 Concrete Design (3)

Geotechnical

CEG 4801 Geotechnical Design (3) OR CEG 4111 Foundations Engineering (3)

Construction/Transportation

CCE 4XXX Construction elective (3) OR TTE 4XXX Transportation elective (3)

Environmental/Water Resources

ENV 4001 Environmental Engineering (3) OR CWR 4XXX Hydraulics, Hydrology, or Water Resources elective (3)

Additional Electives

Group B Elective 1* (3)

Group B Elective 2* (3)
Group C Elective 1** (3)

***Group B Engineering/Math/Science Elective**: Any 4000-level course offered by the Department of Civil and Environmental Engineering that isn't being used to meet another requirement can be used to meet this requirement OR specified 3000 or 4000-level courses selected from engineering, math, or science departments at the university. See department for details.

****Group C Professional/Technical Elective:** A course outside of the CEE department emphasizing professional development, computing, and other professional/technical skills.

Major Design Experience

CGN 4800 Pre-senior Design and Professional Issues (2)
CGN 4802 Senior Design Project (3)

Below is a suggested academic curriculum map which is subject to change. See a department advisor for current requirements.

Freshman Year	**Sem. Hrs.**
Fall Semester	
ENG 1004L First-year Engineering Lab (College Requirement)	1
MAC 2311 Calculus I	4
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry I Lab	1
ENC 1101 Communication Skills I	3
Liberal Studies Elective	3
Total	**15**
Spring Semester	
MAC 2312 Calculus II	4
ENC 1102 Communication Skills II	3
PHY 2048C Physics I with Lab	5
Liberal Studies Elective	3
Total	**15**
Summer Semester	
Liberal Studies Elective	3
Liberal Studies Elective	3
Liberal Studies Elective	3
Required Science Elective*	3
Total	**12**
Sophomore Year	
Fall Semester	
MAC 3313 Calculus III	5
PHY 3049C Physics II with Lab	5
EGN 2123 Engineering Graphics	2
STA 3034 Mathematical Statistics	3
Total	**15**
Spring Semester	
EGM 3512 Engineering Mechanics	4
CEG 2202 Intro to Geomatics	3
CEG 2202L Into to Geomatics Lab	1
EGN 3613 Engineering Economy	2
Liberal Studies Elective	3
MAP 3305 E-Math or MAP 2032 Differential Equations	3
Total	**16**
Junior Year	**Sem. Hrs.**
Fall Semester	
CWR 3201 Hydraulics	3
EES 3040 Intro. to Environmental Engineering Science	3
EGN 3331 Strength of Materials	3
CWR 3200L Env. & Hyd. Engineering Lab	1
EEL 3003 Introduction to Electrical Engineering	3
EML 3100 Thermodynamics	2
Total	**15**
Spring Semester	
CCE 3101 Construction Materials	3
CEG 3011 Soil Mechanics	3
CES 3100 Structural Analysis I	4
TTE 3004 Transportation Engineering	3
CGN 3508L CE Material Lab	1
Total	**14**
Senior Year	**Sem. Hrs.**
Fall Semester	
Group B Elective	3
CGN 4800 Pre-Senior Design and Professional Issues	2
CEG 4802 Geotech Design or CEG 4111 Foundation Eng.	3
TTE/CCE/ENV/CWR 4XXX Transp/Construc/Env Eng/Wtr Res Elective	3
Total	**14**
Spring Semester	
Group B Elective	3
Group C Elective	3
CGN 4802 Senior Design Project	3
CES 4605 Steel Design or CES 4702 Concrete Design	3
Total	**12**
Total Semester Hours	**128**

*It is recommended that the science elective be completed prior to the junior year.

Requirements for the Bachelor of Science in Civil Engineering: Environmental Engineering Major

In addition to college requirements, a candidate for the BS degree in civil engineering with a major in environmental engineering will be expected to successfully complete the following course requirements:

Mathematics and Basic Engineering Sciences

CCE 3101	Construction Materials (3)
CEG 2202	Introduction to Geomatics Engineering (3)
CEG 2202L	Introduction to Geomatics Engineering Lab (1)
EGM 3512	Engineering Mechanics (4)
EGN 1004L	First Year Engineering Lab (1)
EGN 2123	Computer Graphics for Engineers (2)
STA 3034	Mathematical Statistics (3)
EGN 3331	Strength of Materials (3)
EGN 3613	Principles of Engineering Economy (2)
EEL 3003	Introduction to Electrical Engineering (3)
EML 3100	Thermodynamics (2)

Group A Science Elective: An additional three-credit hour science elective course is required to allow students to develop increased breadth in the basic sciences, while completing existing curricular requirements. Students should **select ONE course** from the following group.

BSC 1010C	Biological Science (4)
EVR 3235	Atmospheric Processes (3)
GLY 2010	Principles of Geology (3)
MET 2700	General Meteorology (3)
EVR 3023	Introduction to Marine Environment (3)

Environmental Engineering Core Courses

CCE 3101	Construction Materials (3)
CEG 3011	Soil Mechanics (3)

CGN 3508L	Civil Engineering Materials Laboratory (1)
CWR 3200L	Environmental and Hydraulic Engineering Laboratory (1)
CWR 3201	Hydraulics (3)
EES 3040	Introduction to Environmental Engineering (3)
TTE 3004	Transportation Engineering (3)

Environmental Engineering Design and Professional Course

Students are required to take courses in the following areas plus three additional electives* for a total of twenty-one credit hours. To meet the requirement, students may select elective courses (as indicated below) to specialize their degree program to suit their individual objectives.

Environmental:

ENV 4001 Environmental Engineering (3)

Water Resources:

CWR 4XXX Water Resources, Hydraulics or Hydrology elective (3)

Geotechnical:

CEG 4801 Geotechnical Design (3) OR CEG 4111 Foundations Engineering (3)

Construction /Transportation:

TTE 4XXX Transportation elective (3) OR CCE 4XXX Construction elective (3)

Additional Electives

Group B Elective 1* (3)
Group B Elective 2* (3)
Group C Elective 1** (3)

*Group B Engineering/Math/Science Elective: Any 4000-level course offered by the Department of Civil and Environmental Engineering that is not being used to meet another requirement can be used to meet this requirement OR 3000 or 4000-level courses selected from engineering, math, or science departments at the university. See department for details.

**Group C Professional/Technical Elective: A course outside of the CEE department emphasizing professional development, computing, and other professional/technical skills.

Major Design Experience

CGN 4800 Pre-senior Design and Professional Issues (2)
CGN 4802 Senior Design Project (3)

Below is a suggested academic semester map which is subject to change. See a department advisor for current requirements.

Freshman Year	**Sem. Hrs.**
Fall Semester	
ENG 1004L First-year Engineering Lab (College Requirement)	1
MAC 2311 Calculus I	4
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry I Lab	1
ENC 1101 Communication Skills I	3
Liberal Studies Elective	3
Total	**15**
Spring Semester	
MAC 2312 Calculus II	4
ENC 1102 Communication Skills II	3
PHY 2048C Physics I with Lab	5
Liberal Studies Elective	3
Total	**15**
Summer Semester	
Liberal Studies Elective	3
Liberal Studies Elective	3
Liberal Studies Elective	3
*Required Science Elective	3
Total	**12**
Sophomore Year	
Fall Semester	
MAC 3313 Calculus III	5
PHY 3049C Physics II with Lab	5
EGN 2123 Engineering Graphics	2
STA 3034 Mathematical Statistics	3
Total	**15**
Spring Semester	
EGM 3512 Engineering Mechanics	4
CEG 2202 Into to Geomatics	3
CEG 2202L Into to Geomatics Lab	1
EGN 3613 Engineering Economy	2
Liberal Studies Elective	3
MAP 3305 E-Math or MAP 2032 Differential Equations	3
Total	**16**
Junior Year	
Fall Semester	
CWR 3201 Hydraulics	3
EES 3040 Intro. to Environmental Engineering Science	3
EGN 3331 Strength of Materials	3
CWR 3200L Env. & Hyd. Engineering Lab	1
EEL 3003 Introduction to Electrical Engineering	3
EML 3100 Thermodynamics	2
Total	**15**
Spring Semester	
CEG 3011 Soil Mechanics	3
CEG 3508L CE Materials Lab	1
TTE 3004 Transportation Engineering	3
CCE 3101 Construction Materials	3
ENV 4001 Environmental Engineering	3
Total	**13**
Senior Year	
Fall Semester	
CGN 4800 Pre-Senior Design & Professional Issues	2
CEG 4801 Geotech Design or CEG 4111 Foundations Eng.	3
CHM 1046 Chemistry II or MCB 3005C	4
CWR 4XXX Water Resources Elective	3
GROUP B Elective	3
Total	**15**

Spring Semester	
CGN 4802 Senior Design Project	3
TTE 4XXX Transportation Elec. **Or**	
CCE 4XXX Construction Elec.	3
GROUP B Elective	3
GROUP C Elective	3
Total	**12**
Total Semester Hours	**128**

*It is recommended that the science elective be completed prior to the junior year.

Department Requirements

Transfer students and students within the program in civil engineering must achieve a grade of "C" or better in calculus I (MAC 2311 [4]), calculus II (MAC 2312 [4]), physics I (PHY 2048C [5]) and chemistry I (CHM 1045 [4], CHM 1045L [1]) prior to enrolling in any upper-level civil and environmental engineering classes. Students who do not meet this requirement may be directed to take additional academic work. Pre-Engineering students must adhere to the policies set by the College of Engineering. Students must achieve a grade of "C" or better in all transfer courses and in all courses that are prerequisites to any required or elective engineering course. In addition, students are required to earn a "C" or better in all engineering courses without any waiver as a graduation requirement. These courses cover the areas of mathematics and basic design, basic engineering science and design, civil engineering science and design, environmental engineering science and design, proficiency and core courses, and electives.

Course Repeat Policy

Criteria

A student in the Department of Civil and Environmental Engineering will be placed on probationary status if the student falls into any of the following situations:

1. Accrues two grades below "C–" in a single engineering course that is required under his/her curriculum, or in MAC 2313/3313, MAP 3305/2302, or PHY 2049/3049
2. Accrues a total of three grades below "C–" in engineering
3. courses that are required under his/her curriculum, MAC 2313/3313, MAP 3305/2302, and PHY 2049/3049.
4. Has an overall GPA below 2.0

Consequences

A student who meets the above criteria will be placed on academic probation during the subsequent semester and will be required to sign an academic probation/readmit contract with the department. A student may not graduate while on probation.

Reinstatement

To be reinstated, the following conditions must be met:

1. The student will have one semester (the probationary semester) to raise his/her GPA above 2.0
2. The student must retake all courses that were the cause for probation according to an agreed upon schedule (during the probationary semester, if available) and achieve a grade of "C–"or better.

Dismissal

A student on probation will be permanently dismissed from the CEE program and will not be eligible for further reinstatement upon the following conditions:

1. If a student who is on probation does not raise his/her GPA above 2.0 and/or achieve a grade of "C–"or better in all courses taken during the probationary semester.
2. If a student who has been reinstated to the program subsequently falls below an overall GPA of 2.0 and/or fails to achieve a grade of "C–" or better in any math, science, or engineering course.
3. A student who has already reached or exceeded the course repeat limits stated above prior to declaring the civil or environmental major is considered to be on reinstatement, and must achieve a grade of "C–" or better in all subsequent courses to avoid permanent dismissal.

Fundamental of Engineering Exam

All undergraduate students are encouraged to take the Fundamentals of Engineering (FE) exam in the civil engineering discipline during their senior year.

Honors in the Major

The Department of Civil and Environmental Engineering offers Honors in the Major to encourage students to undertake independent and original research to enhance their undergraduate experience. For requirements and other information, see the "University Honors Office and Honor Societies" chapter of this General Bulletin.

Undergraduate Course Descriptions

Definition of Prefixes

CCE, Civil Construction Engineering
CEG, Civil Engineering
CES, Civil Engineering Structures
CGN, Civil Engineering
CWR, Civil Water Resources
EES, Environmental Engineering Science
EGN, General Engineering
ENV, Environmental Engineering
TTE, Transportation and Traffic Engineering

CCE 3101. Construction Materials (3). Prerequisite: EGN 3331. This course covers properties and characteristics of construction materials for civil and highway engineering; metals, aggregates, cements, timber, concrete, and asphalt.
CCE 4004. Construction Engineering (3). Prerequisites: CCE 3101 and EGN 3613. This course covers theories, principles, and applications of construction engineering and management. Em-

phasis is placed on construction preplanning, delivery systems, contracts and bidding, estimation, scheduling, project control, and professional issues.

CCE 4014. Construction Cost Estimating (3). Prerequisite: CCE 4004. This course covers construction contracts, organization and cost accounting systems; preliminary cost estimation, and cost indices; estimating material, labor, and equipment costs; construction bidding practices, and bid proposals; and project budgeting and cost systems.

CCE 4031. Construction Planning and Scheduling (3). Prerequisite: CCE 4004. This course includes topics such as: planning, basic arrow diagramming, basic precedence diagramming, establishing activity duration, scheduling computations, bar charts, project controls, overlapping networks, resource leveling, and program evaluation review technique (PERT).

CEG 2202. Introduction to Geomatics (3). Prerequisite: MAC 2311. Corequisite: CEG2202L. Co- or prerequisite: EGN 2123. This course explores methods and procedures of surface mapping and subsurface sectioning including distance measurements, traverse computations and topographic mapping, and Global Positioning Systems. Use of field equipment and procedures to measure distances, elevations, angles, and perform complete surveys.

CEG 2202L. Introduction to Geomatics Lab (1) Corequisite: CEG 2202. Co- or prerequisite: EGN 2123. Methods and procedures of surface mapping including distance measurements, elevations measurements, traverse computations and topographic mapping, and Global Positioning Systems. Use of field equipment and procedures to measure distances, elevations, angle, and perform complete surveys. Computer Aided Design (CAD) Laboratory for basic engineering drafting.

CEG 3011. Soil Mechanics (3). Co- or prerequisite: EGN 3331. This course covers physical, index, hydraulic and mechanical properties of soils. Topics include classification, compaction, stress distribution, permeability and seepage, consolidation settlement, and shear strength of soil.

CEG 4111. Foundation Engineering (3). Prerequisite: CEG 3011. This course covers the design of spread footing, pile and caisson foundations, as well as retaining and waterfront structures. The course offers an investigation of slope stability and a choice between alternative methods of foundation design.

CEG 4701. Environmental Geotechnics (3). Prerequisite: CEG 3011. This course covers the geotechnical aspects of waste containment and storage. Aspects of design, construction, and performance of earthen structures for storing or disposing waste of remediation contaminated sites.

CEG 4801. Geotechnical Design (3). Prerequisite: CEG 3011. Co- or prerequisite: CGN 3508L. This course covers geotechnical investigation, analysis, and design of different geotechnical structures, including earth retaining structures, slopes and embankments, earthwork with geosynthetics, as well as shallow foundations.

CES 3100. Structural Analysis (4). Prerequisite: EGM 3512. Co- or prerequisites: EGN 3331 and MAP 2302 or MAP 3305. This course covers loads, load paths, as well as advanced topics on shear and bending moment, including frames and superposition. Additional topics include influence lines, deflection of determinate structures, as well as indeterminate analysis methods including flexibility, slope-deflection, moment distribution, and stiffness methods.

CES 4101. Advanced Structural Analysis (3). Prerequisites: CES 3100 and EGN 3331. This course covers matrix algebra review, direct stiffness method for truss analysis, computer applications, statically indeterminate structures, slope-deflection and moment distribution methods, as well as computer modeling and analysis of structures using commercial FE codes.

CES 4605. Steel Design (3). Prerequisites: CES 3100 and EGN 3331. Co- or prerequisite: CGN 3508L. This course covers the design of tension, compression, and flexural steel members. The course also covers the design of bolted and welded connections for steel members, according to AISC specifications.

CES 4702. Concrete Design (3). Prerequisites: CES 3100 and EGN 3331. Co- or prerequisite: CGN 3508L. This course covers design of reinforced concrete structures using the current ACI specifications and building codes. Topics include flexural design of reinforced concrete beams, flanged beams, and one-way slabs. The course also presents column design, shear reinforcement design, bond and anchorage, and control of deflections and cracks.

CES 4711. Prestressed Concrete (3). Prerequisites: CES 3100 and EGN 3331. Co- or prerequisite: CGN 3508L. This course covers the behavior and design of prestressed concrete structures. Topics include the design of prestressed concrete beams for flexure and shear, design of slabs, prestressing losses, serviceability of prestressed concrete members, and precast members.

CES 4800. Timber Design (3). Prerequisites: CES 3100 and EGN 3331. Co- or prerequisite: CGN 3508L. This course covers the design of basic timber structures including beams, columns, walls, and diaphragms – all using NDS specifications.

CES 4830. Masonry Design (3). Prerequisites: CES 3100 and EGN 3331. Co- or prerequisite: CGN 3508L. This course covers the design of basic reinforced masonry structures including walls, columns, and foundations. SBC and code applications are used.

CGN 3508L. Civil Engineering Materials Laboratory (1). Prerequisite: EGN 3331. Co- or prerequisite: CEG 3011 or CCE 3101. This course is a study of the principal construction materials used in civil engineering practice (soils, concrete, timber, steel, etc.) with special attention to measuring mechanical properties through laboratory testing according to ASTM standards. Hands-on experience in conducting tests, including preparation and instrumentation of test specimens, test execution, data acquisition, and interpretation of test results using statistical analysis.

CGN 3949r. Cooperative Work Experience (0). (S/U grade only). This non-credit course offers field-work experience in an approved civil engineering agency program for integration of theory and professional practice.

CGN 4800. Pre-senior Design and Professional Issues (2). Co- or prerequisites: CEG 2202L and senior standing. This course covers the following topics: engineering and professional ethics; professional practice issues relevant to the design and construction of engineering projects; project planning and scheduling; design under engineering and societal constraints; importance of licensure and continuing education; as well as oral and written communication issues. Inter- or multidisciplinary teams prepare formal proposals addressing engineering challenges; the full design of these proposals is completed during the following semester in the CGN 4802, Senior Design Project course.

CGN 4802. Senior Design Project (3). Prerequisites: CGN 4800, must be in last full semester of CEE program. This course is a capstone senior-level design course integrating the knowledge and skills gained in undergraduate studies in civil and environmental engineering. The course involves the completion of a team-based

interdisciplinary design project covering several sub-disciplines in civil or environmental engineering. Industry and professional participation.

CGN 4906r. Honors Work in Civil and Environmental Engineering (1–6). Prerequisite: Admission to the honors program. This course is for faculty-directed independent research conducted by students in the honors program. Research is conducted on a topic agreed upon by the student and a faculty mentor and relevant to civil and/or environmental engineering. Variable credit is given consistent with the nature and scope of the research project to be cond**ucted. May be repeated to a maximum of nine semester hours.**

CGN 4930r. Special Topics (1–3). Prerequisite: Varies. This course covers topics in civil and environmental engineering, with an emphasis on recent developments. Topics and credit may vary. May be repeated to a maximum of twelve semester hours. May be repeated within the same term.

CWR 3200L. Environmental and Hydraulic Engineering Laboratory (1). . Co- or prerequisite: EES 3040 or CWR 3201. This course is a hands-on introduction to environmental and hydraulic engineering topics. Physical experiments that demonstrate fundamental concepts such as hydrostatics, pipe flow, open channel flow, water quality, and water treatment processes are performed.

CWR 3201. Hydraulics (3). Prerequisite: EGM 3512. This course covers fundamental concepts of fluid properties, hydrostatics, kinematics, ideal flow viscous effects, transport phenomena; drag, laminar, and turbulent flow in pipes and channels; and dimensional analysis.

CWR 4101. Engineering Hydrology (3). Prerequisites: CWR 3201.and CWR3200L. This course covers the processes of the hydrologic cycle, hydrologic analyses for the planning and design of water management systems, and the use of application program packages.

CWR 4120. Groundwater Hydrology (3). Prerequisites: CWR 3201 and EES 3040. This course examines the fundamentals of groundwater flow and contaminant transport. Topics include Darcy's law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties, 3-D equation of groundwater flow, regional circulation, unsaturated flow, recharge, stream-aquifer interaction, well hydraulics, slug test analyses, and contaminant transport processes.

CWR 4202. Hydraulic Engineering I (3). Prerequisites: CWR 3201 and CWR 3200L. This course covers principles of hydrology and hydraulics as they apply to the design of water supply, urban drainage, flood control, and hydraulic energy-conversion systems. Students use computer-aided design to devise hydraulics systems.

CWR 4203. Hydraulic Engineering II (3). Prerequisite: CWR 4202. This course covers methods for analyzing a broad range of unsteady flow conditions and for designing facilities to cope with resulting problems. Based on these methods, students learn to apply computer programs to practical water distribution and open-channel systems.

CWR 4540. Water Resources Engineering (3). Prerequisite: CWR 4101 or CWR 4202. This course offers a systems approach to complex water resources problems as well as a systems analysis of water resources operations, design, and planning.

CWR 4822. Coastal and Estuarine Hydraulics (3). Prerequisites: CWR 3201 and MAC 2313. This course covers coastal hydraulic principles and waves in estuaries and coastal oceans, wave properties and wave forces on coastal structures, tidal motions, mixing and transport in estuaries, and coastal -engineering analysis.

EES 3040. Introduction to Environmental Engineering (3). Prerequisites: CHM 1045, CHM 1045L, MAC 2311, and PHY 2048C. This course is a broad introduction to environmental engineering topics. Includes fundamental concepts in mass balance, water quality, water and wastewater treatment, air quality, and solid/hazardous waste management, with considerations to environmental and societal impacts, as well as technical limitations. This course serves as the foundation for all other environmental engineering courses.

EGM 3512. Engineering Mechanics (4). Prerequisites: MAC 2312 and PHY 2048. Co- or prerequisite: MAC 2313. This course covers statics and dynamics of particles and rigid bodies. Topics include free-body diagrams, couples, resultants, equilibrium of particles and rigid bodies in two and three dimensions, and forces in trusses, frames, and machines. Other topics include centroids, centers of mass, internal shear forces and bending moments in beams, shear and moment diagrams, friction, area moments of inertia, parallel axis theorem, work/energy, as well as impulse and momentum methods.

EGN 3331. Strength of Materials (3). Prerequisite: EGM 3512. This course covers axial, torsional, and flexural stresses and strains, as well as normal and shear stress. Topics include Mohr's circle, transformation of stress, safety factors, and engineering applications.

ENV 4001. Environmental Engineering (3). Prerequisites: CWR 3201, EES 3040, and CWR 3200L. This course covers the design of water and wastewater treatment plants, wastewater collection systems, air and water pollution control, as well as solid waste management and contemporary environmental issues.

ENV 4022. Remediation Engineering (3). Prerequisite: ENV 4001. This course reviews various innovative remediation technologies used for cleanup of contaminated soil and groundwater at a site such as air sparging, soil vapor extraction, reactive walls, reactive zones, stabilization technologies, as well as hydraulic and pneumatic fracturing pump-and-treat systems.

ENV 4031. Applied Environmental Engineering Microbiology (3). Prerequisite: ENV 4001. This course surveys environmentally important microbes and their roles in the environmental restoration processes. Major topics include basics of microbiology, stoichiometry and bacterial energetics; bioremediation and other environmental microbiology applications; as well as detoxification of hazardous chemicals.

ENV 4041. Environmental Systems Analysis (3). Prerequisites: EES 3040, CWR 3200L, and MAP 2302 or MAP 3305. This course covers systems analysis techniques applied to the solution of environmental problems, with particular emphasis on linear and dynamic programming.

ENV 4053. Chemical Fate and Transport in the Environment (3). Prerequisites: CWR 3201, EES 3040, and MAP 2302 or MAP 3305. This course covers the processes of pollutant transport and transformation in and between air, water, and soil or sediments. Topics include advection, dispersion, diffusion, sorption, degradation, and phase-change processes.

ENV 4341. Solid and Hazardous Waste Engineering (3). Prerequisites: EES 3040 and CWR 3200L. This course covers definitions and characteristics of solid and hazardous wastes. Topics include history, growth, and magnitude of the problem; legislative, regulatory, and technical aspects of waste generation, storage, col-

lection, transportation, processing, transformation, and disposal; design of waste minimization and recycling programs; and case studies of waste management.

ENV 4405. Water Reuse Engineering (3). Prerequisites: EES 3040 and CWR 3200L. This course covers sources of water for reuse, treatment processes and systems, monitoring and control instrumentation, health and social aspects, and design of facilities/ systems.

ENV 4417C. Applied Environmental Engineering Chemistry (3). Co- or prerequisite: ENV 4001. This course covers applications of fundamental principles from general, organic and biological chemistry, to major environmental engineering processes. Emphasis is placed on the chemistry of water treatment.

ENV 4500. Environmental Unit Processes and Operations (3). Co- or prerequisite: ENV 4001. This course covers the operational and design features of the physical, chemical, thermal, and biological treatments used in engineering for water and wastewater treatment and the management of solid and hazardous waste.

ENV 4561. Design of Water Quality Management Facilities (3). Prerequisite: ENV 4001. This course covers analysis of operations, processes, and systems used in the design of facilities for maintaining water supply quality, wastewater control, and aquatic pollution control. Design of small and decentralized wastewater management systems.

ENV 4611. Environmental Impact Analysis (3). Prerequisites: CWR 3200L and EES 3040. This course covers topics such as analysis of various measures of environmental quality, impact of human activity on water, land, and air resources, and benefit-cost analysis in environmental-impact assessment.

TTE 3004. Transportation Engineering (3). Prerequisites: CEG 2202, CEG2202L, and STA 2122 or equivalent. This course is an introductory study of transportation engineering in the United States with special emphasis on highway and traffic engineering, planning and design, construction, operation, management, and safety.

TTE 4201. Traffic Engineering (3). Prerequisite: TTE 3004. This course covers nature, characteristics, and theories of traffic problems. Topics include traffic survey procedures, origin-destination studies, as well as an introduction to theory and design of automat ic control of traffic systems.

TTE 4250. Traffic Operations (3). Prerequisite: TTE 3004. This course covers operation of transportation systems, monitoring, regulation, and control traffic.

TTE 4271. Intelligent Transportation Systems (3). Prerequisite: TTE 3004. This course covers advanced traffic management systems (ATMS), advanced traveler information systems , advanced vehicle control systems, commercial vehicle operations, rural ITS, human factors, institutional issues, architecture and standards, as well as simulation and modeling.

TTE 4804. Highway Geometric Design (3). Prerequisite: TTE 3004. This course covers principles and procedures for the geometric design of highways and streets, consideration of traffic, land use, and aesthetic factors.

TTE 4830. Hot Mix Asphalt Mixture Design (3). Prerequisite: CCE 3101. Co- or prerequisite: CGN 3508L. This course covers aggregate properties and tests, tests of asphalt and asphalt concrete mixes, fundamental engineering characteristics of hot-mix asphalt concrete, mix design methods for asphalt concrete, as well as Superpave-mix design methodology and production and placement of hot-mix asphalt.

Graduate Courses

CCE 5035 Construction Planning and Scheduling (3).
CCE 5036 Project Controls in Construction (3).
CEG 5015 Advanced Soil Mechanics (3).
CEG 5115 Foundation Engineering (3).
CEG 5127 Highway and Airport Pavement Design (3).
CEG 5705 Environmental Geotechnics (3).
CES 5105 Advanced Mechanics of Materials (3).
CES 5106 Advanced Structural Analysis (3).
CES 5144 Matrix Methods for Structural Analysis (3).
CES 5209 Structural Dynamics (3).
CES 5218 Fundamentals of Structural Stability Theory (3).
CES 5325 Bridge Engineering (3).
CES 5585 Earthquake/Wind Engineering (3).
CES 5606 Advanced Steel Design (3).
CES 5706 Advanced Concrete Design (3).
CES 5715 Prestressed Concrete (3).
CES 5845 Composites in Civil Engineering (3).
CES 6116 Finite Elements in Structures (3).
CGN 5310 Engineering Data Systems (3).
CGN 5905r Directed Individual Study (1–6). (S/U grade only.)
CGN 5910r Supervised Research (1–5). (S/U grade only.)
CGN 5930r Special Topics in Civil Engineering (1–6).
CGN 5935 Civil Engineering Seminar (0). (S/U grade only.)
CGN 6942 Supervised Teaching (3). (S/U grade only.)
CWR 5125 Groundwater Hydrology (3).
CWR 5205 Hydraulic Engineering II (3).
CWR 5305 Urban Stormwater Runoff (3).
CWR 5516 Numerical Models in Hydraulics (3).
CWR 5635 Water Resources Planning and Management (3).
CWR 5824 Coastal and Estuarine Hydraulics (3).
ENV 5028 Remediation Engineering (3).
ENV 5030 Applied Environmental Engineering Microbiology(3).
ENV 5045 Environmental Systems Analysis (3).
ENV 5055 Chemical Fate and Transport in the Environment (3).
ENV 5105 Air Pollution Control (3).
ENV 5407 Water Reuse Engineering (3).
ENV 5504 Environmental Engineering Processes and Operations (3).
ENV 5565 Design of Water Quality Management Facilities (3).
ENV 5615 Environmental Impact Analysis (3).
TTE 5205 Traffic Engineering (3).
TTE 5206 Advanced Traffic Flow Analysis (3).
TTE 5256 Traffic Operations (3).
TTE 5270 Intelligent Transportation Systems (3).
TTE 5805 Highway Geometric Design (3).

Civil and Environmental Engineering Graduate Programs

Description. The Department of Civil and Environmental Engineering offers Master of Science (MS) and Doctor of Philosophy (PhD) programs with concentrations in structural, geotechnical, transportation, water resources and environmental engineering. Within the MS program, the Master of Engineering (MEng) option is available. Special areas of emphasis in civil engineering are bridge design, bridge management systems, construction man-

agement, coastal construction, structural stability, and structural reliability; geo-environment, pavements, and soil dynamics; transportation networks and multimodal system; and computer-aided design and decision support systems as well as the integration of physical and numerical models of civil engineering systems. In water resources, the focus is on hydraulics, hydrology, hydrodynamics, groundwater, and the modeling of watersheds and coastal areas. Emphasis within environmental engineering includes water quality, drinking water and wastewater treatment, remediation, hazardous waste management, environmental systems analysis, and environmental sustainability.

Research Laboratories. The college has many instructional and research laboratories. Specific laboratories for the Department of Civil and Environmental Engineering are geotechnical, environmental, hydraulic, pavement, construction materials, structures, the traffic automation and innovation laboratory (TRAIL), and traffic engineering laboratory.

Geotechnical laboratory facilities include equipment for soil classification, compaction, hydraulic conductivity, slurry evaluation, shear strength, and compressibility of soils. Electronic data acquisition systems, personal computers, sampling devices, and a machine shop are also available for student use.

The environmental engineering laboratories include both an undergraduate teaching lab and a graduate research lab. The facilities include equipment and instrumentation needed for physical, chemical, and microbiological analysis of water quality, sampling and filtering devices, and space for bench scale experiments.

The hydraulic laboratory is used by students to reinforce the basic concepts of hydraulics and become familiar with hydraulic equipment and instrumentation, and to learn procedures of data collection and analysis. Students can perform experiments of hydrostatic pressure, hydrostatic forces on submerged bodies, flow measurement, friction in pipe flow, pump power, open channel flow, hydraulic jump, and wave mechanics.

Pavement laboratory facilities include equipment for resilient modulus characterization of highway materials (MTS Load System, TestStar Control Unit, Triaxial Testing System, and Compaction Set). Electronic data acquisition systems, PC computers, and pavement engineering software systems are available for research and instructional use.

Construction materials laboratory facilities include equipment for compression strength testing, concrete, mixer, MTS shock tester, L.A. abrasion test machine, and MTS test system.

A structures lab, two stories high, has a three-foot reinforced concrete reaction slab with 100-kip anchorage pods spaced at four-foot intervals. This facility provides undergraduate and graduate students with applied instruction on specialized testing of materials and structures, support for high quality research in developing and testing innovative structural systems for bridges, buildings, etc. The laboratory is equipped with state-of-the-art vertical and lateral loading systems, together with automated data acquisition systems.

The department houses the Center for Accessibility and Safety for an Aging Population (ASAP).

ASAP concentrates its efforts on Florida where it is projected that 22 percent of the population will be 65 or older as early as 2020, the highest percentage in the nation, but the center's research is valuable in addressing transportation issues for an aging population nationwide. The center addresses two of USDOT's strategic goals: improving highway safety and strengthening transportation planning. Providing seniors with safe and convenient access to the goods and services they need to participate fully in society is a key issue explored by ASAP personnel. The center also focuses on transportation issues of rural and minority segments within the elderly population. The center focuses on four interdisciplinary areas: (1) Accessibility and community connectivity among older adults; (2) Human factors affecting the older population, especially regarding acceptance of emerging technologies; (3) Geometric design research, especially regarding elder crash mitigation and (4) Health, wellness and safety of seniors as it relates to multimodal transportation and emergency operations. ASAP also supports educational and outreach activities, including an annual K-12 Transportation Day, brown bag lunches, student research seed grants and dissertation fellowships and annual student research colloquia.

Additionally, the department manages a large research program called TraCS Florida. This program is funded by a grant from the Florida Department of Transportation (FDOT) to provide Florida law enforcement agencies (LEAs) with a cost effective (FREE) way to collect and transmit electronic crash and citation data, to submit crash data electronically to the Florida Department of Highway Safety and Motor Vehicles (DHSMV), and to submit citation data to local county clerks of court. The TraCS Florida team uses TraCS to develop Florida specific forms to meet the data submission requirements set by DHSMV.

Computer Resources. Students have access to a large number and variety of computer systems. A network of nearly 700 computing devices is available for the academic and research efforts of the college. The Crashworthiness and Impact Analysis Laboratory is another major research endeavor housed in the department. The laboratory is a well-equipped state-of-the-art; high-performance computing environment consists of a cluster of workstations for fast visualization, and pre- and post- processing. This advanced computing environment is available primarily to graduate students working as research assistants with departmental faculty. The department also has a Sun Ultra-10 workstation that is used for environmental engineering research.

The college computers are connected to a high-speed, switched, fiber-optic LAN and to the Internet via the Florida State University connection to the NSF v BNS network. Other computation resources include the Department of Scientific Computing, FSU Academic Computing and Network Services (ACNS), and FAMU Computing Services. A small collection of reference works and heavily used books and journals is located in the College of Engineering Reading Room/ Library Services.

Students may also participate in engineering clubs such as the National Society of Black Engineers (NSBE); Society of Women Engineers (SWE); American Society of Civil Engineers (ASCE); Institute of Transportation Engineers (ITE); Engineering Honor Society, Tau Beta Pi; Engineers Without Borders (EWB); and the Society of Hispanic Professional Engineers (SHPE).

Assistantships

Teaching and research assistantships are available on a competitive basis. Students who have teaching assistantships supervise laboratory courses, conduct tutorial sessions, and grade homework assignments. Research assistants work on externally sponsored research projects under the supervision of a faculty member. Letters of recommendation, evidence of communication skills, as well as GRE scores, are important considerations in the award of assistantships.

Annual stipends range from $10,000 to $16,000 for 20-hours of work per week during the academic year. A full time course load is nine (9) hours for students with at least a quarter-time (10 hour) assistantship and twelve (12) hours for those who do not have an assistantship. Out-of-state tuition and matriculation fee waivers are available on a competitive basis and on the availability of department funds for graduate assistants.

Correspondence and Information

For information concerning financial aid, research facilities, or any question on degree requirements, you may contact the graduate program coordinator, Department of Civil and Environmental Engineering, FAMU-FSU College of Engineering, Tallahassee, Florida 32310-6046. For applications, you may contact Florida A & M University Admissions. For more detailed information, please see the CEE Graduate Handbook which is available on the department website at www.eng.fsu.edu.

Requirements for the Master of Science Degree in Civil Engineering Admission. The CEE department admissions requirements for the Master of Science (MS) degree program are as follows:

- Have a bachelor's degree in Civil Engineering, Environmental Engineering, or closely related engineering science discipline from an accredited college or university.
- Good academic standing in the academic institution last attended.
- A minimum grade point average (GPA) of 3.0 on a 4.0 scale on all coursework attempted as an upper division student (beyond 60 semester credit hours).
- A minimum graduate record examination (GRE) percentile ranks of 25% (score of 144) on the verbal reasoning section and 65% (score of 153) on the quantitative section. For valid GRE tests taken prior to August 2011, minimum of 370 on the verbal reasoning section and 680 on the quantitative reasoning section.
- Three letters of recommendation from academics or professionals attesting to the M.S. study potential of the applicant.
- Statement of purpose describing reasons for pursuing the Master of Science degree and career goals.
- International students whose native language is not English will be required to pass the TOEFL examination and demonstrate proficiency in English prior to admission per university guidelines. The minimum score is 550 (paper-based), 213 (computer-based) or 80 (Internet-based) on the Test of English as a Foreign Language (TOEFL). This requirement may be waived for students who have obtained a prior degree from a U.S. institution.

The Master's of Science (MS) in Civil Engineering provides students with training in advanced civil engineering topics as well as research experience.

Curriculum

The MS curriculum includes a total of 30 semester hours, consisting of coursework and thesis research. For all courses in the curriculum, students must satisfy prerequisites to enroll in a course. Students entering the major without a civil or environmental engineering degree also must satisfy a set of articulation courses Students are expected to enroll in Graduate Seminar (CGN 5935) each semester they have full-time status.

The specialty (depth) area courses provide students with advanced training beyond the bachelor's degree in a specific civil engineering sub--discipline. The majority of the specialty area courses should be taken from the CEE department.

The supplementary electives are intended to assist the student with developing complementary multidisciplinary skills and knowledge. Supplementary electives may include courses from other civil and environmental engineering areas outside of the chosen specialty, other engineering disciplines, the sciences, computer/computational science, urban and regional planning, and geography.

Mathematics and quantitative skills are critical in civil engineering work. Therefore, a student will be required to take at least one course (a minimum of three (3) credit hours) in mathematics, statistics, or computational science in the MS curriculum.

Major Professor and Supervisory Committee

The MS student selects a major professor and a Supervisory Committee by the beginning of the second semester. The major professor must agree to serve as the student's academic advisor and thesis supervisor and must be a full-time CEE faculty with Graduate Faculty/Directive status.

The MS student will identify the supervisory committee in consultation with the major professor. The supervisory committee consists of three (3) full-time faculty members, in which the Major Professor is the chair and one member may be from outside of the CEE department. All committee members must have Graduate Faculty status. Additional members may be appointed to the Committee, if deemed appropriate by the major professor. The supervisory committee oversees and supervises the student's research effort, approves the written thesis, attends the oral defense of the thesis, and recommends granting of the degree.

Plan of Study

The MS student, in consultation with his/her major professor, is required to submit an approved Plan of Study to the departmental Graduate Committee by the end of the first semester. The Plan of Study includes a list of proposed courses, a time schedule for completion of these courses, and a summary of the proposed thesis topic. Upon recommendation of the Graduate Committee, the Department Chair will approve the proposed Plan of Study. The Plan of Study is used by the student and major professor as a guideline throughout the student's MS study and must be updated and ap-

proved if changes occur.

Degree Requirement Certification

The MS degree candidate must submit an approved Degree Requirement Certification form to the CEE department by the beginning of the final semester of coursework. The form certifies that the student has satisfied all degree requirements as set forth in the latest approved Plan of Study. If courses shown in the Degree Certification form differ from those shown in the latest approved Plan of Study, the department will not approve the Certification form.

Thesis. The MS student prepares the thesis with the supervision of the major professor and supervisory committee. The student selects the thesis topic in consultation with the major professor and supervisory committee. Before registering for thesis hours, the student must consult the major professor as to the proportion of time to be devoted to thesis work.

It is the responsibility of the student to comply with the required thesis format of his/her university and the deadlines and requirements for thesis submission. See FAMU's School of Graduate Studies' website for information.

When the complete thesis is ready for review by the supervisory committee, the major professor will authorize the distribution to committee members. The thesis should be complete in every respect, including data analysis, figures, and tables. The supervisory committee can recommend editorial and/or substantive changes after review and the oral thesis defense. The thesis should be provided to the major professor and the examining committee (supervisory committee) at least ten (10) working days before the date of the oral examination.

Journal Manuscripts

In partial fulfillment of the MS degree requirements, the MS student must prepare at a minimum one (1) complete manuscript that is ready for submittal to a peer- reviewed journal publication. It is expected that the major professor will submit the manuscript and complete the publication process.

Thesis Defense

An oral examination in the form of a thesis defense is mandatory and is part of the degree requirements. The student must satisfactorily pass this oral examination, as determined by the Supervisory Committee, before submission of the final thesis to the university.

- The thesis defense will be scheduled only with approval of the major professor, supervisory committee, and the department. The approvals are documented in the Request for Thesis Defense Examination form. The student will be permitted to schedule the thesis defense only if the student has 1) completed the research work, 2) written a complete thesis, and 3) satisfied the journal manuscript requirement.
- The defense should be scheduled before the final thesis submission deadline with sufficient time to allow for revisions; see university deadlines.
- The oral presentation of the thesis is announced and open to the public.
- The oral defense consists of two parts: 1) a defense presentation that include appropriate use of visual aids and duration of 30-40 minutes and 2) oral examination by the supervisory committee.
- The outcome of thesis defense is determined by the major professor and supervisory committee and is reported by the major professor to the department in the Thesis Defense Outcome Form.

Suggested Timeline and Checklist. A suggested timeline for completion of MS degree requirements and milestones checklist is provided below.

Students may need to enroll in additional hours to maintain full-time status each semester.

Semester 1: 9 hours of approved coursework; Complete RCR training*

Semester 2: 9 hours of approved coursework; Identify thesis topic

Semester 3: 6 hours of approved coursework; 3 hours of thesis research CGN 5971

Semester 4: 3 hours of thesis research CGN 5971; Prepare complete journal manuscript; Thesis defense CGN 6972; Submit approved final thesis

*See Section 4.3 RCR Training

M.S. milestones checklist

The list is indicated by Milestone or Action, and When.

Select a Major Professor; Complete RCR training;
First semester

Submit approved Plan of Study:By completion of 9 credit hours

Request transfer credit (if applicable): By completion of 9 credit hours

Complete RCR training: By end of first year

Submit approved Degree Certification form: Semester prior to graduation

Apply for graduation with university: Beginning of final semester

Prepare a complete manuscript for journal submission: Final semester

Request thesis defense; Defend thesis;

Submit approved final M.S. thesis to university: Final semester;

Check University for deadlines

Complete Exit Survey:

End of final semester

The CEE department admissions requirements for the Master of Engineering (MEng) degree program are as follows:

- Have a bachelor's degree in Civil Engineering, Environmental Engineering, or closely related engineering science discipline from an accredited college or university.
- Good academic standing in the academic institution last attended.
- A minimum grade point average (GPA) of 3.0 on a 4.0 scale, on all work attempted as an upper division student (beyond 60 semester credit hours).
- Satisfy at least one of the following: 1) Graduate record examination (GRE) minimum percentile ranks of 25% (score of 144) on the verbal reasoning section and 65% (score of
- 153) on the quantitative section; for valid GRE tests taken prior to August 2011, minimum of 370 on the verbal reasoning section and 680 on the quantitative reasoning section; 2) evidence of passing the NCEES Fundamentals of Engineering (FE) or Principles and Practice of Engineering (PE) exam; or 3) hold PE licensure in any state.
- Three letters of recommendation from academics or professionals attesting to the M.Eng. studies potential of the applicant.
- Statement of purpose describing reasons for pursuing the Master of Engineering degree and career goals.
- International students whose native language is not English will be required to pass TOEFL examination and demonstrate proficiency in English prior to admission per university guidelines. The minimum score is 550 (paper-based), 213 (computer-based) or 80 (Internet-based) on the Test of English as a Foreign Language (TOEFL). This requirement may be waived for students who have obtained a prior degree from a U.S. institution.

The Master of Engineering (MEng) in Civil Engineering provides students with additional training in advanced civil engineering topics, management, and professional issues. The MEng degree option is ideal for students who will pursue a master's degree part-time or for full-time students who desire an option for accelerated completion within one year.

Curriculum

The MEng curriculum includes a total of 30 semester hours of coursework. For all courses in the curriculum, students must satisfy prerequisites to enroll in a course. Students entering the major without a civil or environmental engineering degree also must satisfy a set of articulation courses.

The specialty (depth) area courses provide students advanced training beyond the bachelor's degree in a specific civil engineering sub-discipline. The majority of the specialty area courses should be taken from the CEE department. A minimum of 15 credit hours of specialty (depth) is required in the MEng curriculum.

The supplementary electives are intended to assist the student with developing complementary multidisciplinary and professional skills required in the civil engineering profession. Supplementary electives may include courses from other civil and environmental engineering areas outside of the chosen specialty, as well as courses from other disciplines that support the professional development focus of the MEng Example supplementary electives outside of engineering include courses in the sciences, mathematics, statistics, computer/computational science, social sciences, public policy, urban and regional planning, business, and law. A minimum of 12 credit hours of supplementary electives is required in the MEng curriculum.

Mathematics and quantitative skills are critical in civil engineering work. Therefore, a student is required to take at least one course (a minimum of three (3) credit hours) in mathematics, statistics, or computational science in the MEng curriculum.

Major Professor

The MEng student selects a major professor, who agrees to serve as the advisor for the Master of Engineering study, by the end of the first semester. The major professor must be a full-time CEE faculty with Graduate Directive status. The major professor oversees and guides the student in the Master of Engineering study and recommends granting of the degree.

Plan of Study

The MEng student, in consultation with his/her major professor, is required to submit an approved Plan of Study to the departmental Graduate Committee by the end of the first semester. The Plan of

Study includes a list of proposed courses and a time schedule for completion of these courses. Upon recommendation of the Graduate Committee, the Department Chair will approve the proposed Plan of Study. The Plan of Study is used by the student and major professor as a guideline throughout the student's M.Eng. study and must be updated and approved if changes occur.

Degree requirement Certification

The MEng degree candidate must submit an approved Degree Requirement Certification form to the CEE department by the beginning of the final semester of coursework. The form certifies that the student has satisfied all degree requirements as set forth in the latest approved Plan of Study. If courses shown in the Degree Certification form differ from those shown in the latest approved Plan of Study, the department will not approve the Certification form.

Comprehensive Exam

In partial fulfillment of degree requirements, MEng students must pass the comprehensive exam. The purpose of the MEng comprehensive exam is to evaluate the student's skills and knowledge (fundamental, applied, and theoretical) in advanced civil engineering topics within the selected specialty area and required for practicing engineers. The MEng student must register for the course CGN 5931 MEng Comprehensive Exam (zero-credit hour, pass/fail grading). The MEng comprehensive exam is administered during the final semester of coursework by the student's major professor (advisor). The MEng comprehensive exam is a 24-hour, take-home exam, with the content focused on the student's specialty area of study, as identified in the Plan of Study. In general, the exam will consist of 4-6 questions that are similar in depth and format as final exams. A score of 70% or higher is required to pass the MEng comprehensive exam. If a

student does not pass the exam during the first attempt, a second attempt is permitted and should be done within a semester.

Suggested Timeline and Checklist

A suggested timeline for completion of MEng degree requirements and milestones checklist is provided in the Department's Graduate handbook. For more detailed information, please see the CEE Graduate Handbook which is available on the department website at www.eng.fsu.edu.

Requirements for the PhD Degree in Civil Engineering and Admission

The CEE department admissions requirements for the PhD program are as follows:

• Have a master's degree in Civil Engineering, Environmental Engineering, or closely related engineering science discipline from an accredited college or university. Exceptional applicants with a bachelor's degree may be admitted to the PhD program provided they complete requirements of the MS degree in the CEE department before obtaining the PhD degree.

• Good academic standing in the academic institution last attended.

• A minimum grade point average (GPA) of 3.0 on a 4.0 scale on

all coursework attempted as an upper division student (beyond 60 semester credit hours).

• A minimum graduate record examination (GRE) percentile ranks of 35% (score of 147) on the verbal reasoning section and 70% (score of 155) on the quantitative section. For valid GRE tests taken prior to August 2011, minimum of 410 on the verbal reasoning section and 710 on the quantitative reasoning section.

• Three letters of recommendation form academics or professionals attesting to the doctoral study potential of the applicant.

• Statement of purpose describing reasons for pursuing the PhD degree and career goals.

• International students whose native language is not English will be required to pass TOEFL examination and demonstrate proficiency in English prior to admission per university guidelines. The minimum score is 550 (paper-based), 213 (computer-based) or 80 (internet-based) on the Test of English as a Foreign Language (TOEFL). This requirement may be waived for students who have obtained a prior degree from a U.S. institution.

PhD Degree Requirements

The PhD degree in Civil Engineering is a research degree designed to produce a scholar and is granted only to students who have demonstrated mastery in a specialty in civil engineering and capacity to conduct original and independent scholarly work.

Curriculum

The PhD curriculum includes a total of 51 semester hours, consisting of coursework and dissertation research. For all courses in the curriculum, students must satisfy prerequisites to enroll in a course. Students entering the major without a civil or environmental engineering degree also must satisfy a set of articulation courses. Students are expected to enroll in Graduate Seminar (CGN 5935) each semester they have full-time status.

The specialty (depth) area courses provide students advanced training in a specific civil engineering sub-discipline and support the student in attaining mastery in a specialty area. Courses in the specialty area may include related courses from other departments.

The supplementary electives are intended to assist the student with developing complementary multidisciplinary skills and knowledge. Supplementary electives may include courses from other civil and environmental engineering areas outside of the chosen specialty, other engineering disciplines, the sciences, advanced mathematics and statistics, computer/ computational science, urban and regional planning, and geography.

Major Professor and supervisory committee

The PhD student selects a major professor and a Supervisory Committee by the beginning of the second semester. The major professor must agree to serve as the student's academic advisor and thesis supervisor and must be a full-time CEE faculty with Graduate Faculty/Directive status.

The PhD student will identify the Supervisory Committee in consultation with the Major Professor. The Supervisory Committee consists of four (4) full-time faculty members, one of whom must be from outside of the CEE department and serves as the University Representative. All committee members must have Graduate Faculty/Directive status. Additional members may be appointed to the Committee, if deemed appropriate by the major professor. The Supervisory Committee, chaired by the major professor, oversees and supervises the student's dissertation research effort, administers the PhD Preliminary Examination, recommends doctoral candidacy, attends the oral defense of the dissertation, approves the written dissertation, and recommends granting of the degree.

Plan of Study

The PhD student, in consultation with his/her major professor, is required to submit an approved Plan of Study to the departmental Graduate Committee by the end of the first semester. The Plan of Study includes a list of proposed courses, a time schedule for completion of these courses, and a summary of the proposed dissertation topic. Upon recommendation of the Graduate Committee, the Department Chair will approve the proposed Plan of Study. The Plan of Study is used by the student and major professor as a guideline throughout the student's PhD study and must be updated and approved if changes occur.

Requirements for Candidacy

Students are admitted to candidacy for the PhD degree only after passing the Preliminary Examination and certified to the University Registrar. A student becomes eligible to register for dissertation credits only after the student becomes a candidate for the doctoral degree.

Preliminary Exam

Following completion of all or a major portion of the course work defined in the Plan of Study, the supervisory committee must

issue certification to the Graduate Committee that the student has maintained a minimum 3.0 GPA, demonstrated sufficient progress towards mastery of a sub-discipline and has developed a command of requisite research tools to begin independent research in the area of the proposed dissertation. Once certified, students will be permitted to take the Preliminary Examination (see Request for Preliminary Exam form).

The Preliminary Examination will be in both written and oral format, and will be prepared by the student's supervisory committee. The examination will be administered by the committee and will comply with the requirements of the College and the University in which the student is registered.

The written portion of the Preliminary Examination will consist of two parts:

1. A written examination based on the student's coursework. The written examination will be in "Take Home" format. Each committee member will separately administer a 24-hour "Take Home" written examination, preferably on subsequent days.

2. A written proposal describing the proposed research work for the student's dissertation.

The proposal should be in a format suitable for research proposals submitted to funding agencies. The proposal will be graded as "passed" or "failed" by the supervisory committee members. The student cannot pass the preliminary exam unless the proposal is graded as "passed". In order to receive the "passed" grade on the proposal, at a minimum, the proposal should include the following components: abstract, problem statement, research objectives, critical literature review, research plan and tasks, intellectual merit and broader impact, expected outcomes, and timeline for completion.

The oral portion of the Preliminary Examination will involve a presentation by the student on the written proposal and dissertation research. The supervisory committee shall report the outcome to the Graduate Committee, and designated College and University authorities as: "passed," "failed," "additional work to be completed," or "to be re-examined". Students are admitted to candidacy for the Ph.D. degree only after passing the Preliminary Examination. If any student requires re-examination, the outcome can only be reported as "passed" or "failed." Any student who fails re-examination will be dismissed from the program.

Dissertation

The most important element of the doctoral program is original and fundamental research resulting in a Doctoral Dissertation. Students will enroll in dissertation credits (CGN 6980) only after the successful completion of the Preliminary Examination and admittance to doctoral candidacy. The student selects the dissertation topic in consultation with the major professor and supervisory committee. The supervisory committee must approve the dissertation research topic by the student successfully writing the dissertation proposal and presenting it to the committee. To be acceptable, the dissertation must comprise original research constituting a significant contribution to knowledge to the discipline and represent a substantial scholarly effort on the part of the student.

It is the responsibility of the student to comply with the required dissertation format of his/her university and the deadlines and requirements for dissertation submission <see http://www.famu.edu/index.cfm?graduatestudies or http://www.gradstudies.fsu.edu/>.

At the completion of the dissertation research and when the complete dissertation is ready for review by the Supervisory Committee, the Major Professor will authorize the distribution to committee members. The dissertation should be complete in every respect, including data analysis, figures and tables. The Supervisory Committee can recommend editorial and/or substantive changes after review and the oral dissertation defense. The dissertation should be provided to the major professor and the examining committee (supervisory committee) at least ten (10) days before the date of the dissertation defense examination.

The PhD student is required to present the dissertation at a department Graduate Seminar at a time scheduled by the faculty seminar coordinator.

Journal Manuscripts

In partial fulfillment of the PhD degree requirements, a PhD student must prepare at a minimum two (2) manuscripts for peer-reviewed journal publication, of which at least one (1) should have the status of "Accepted."

Dissertation Defense

An oral examination in the form of a dissertation defense is mandatory and is part of degree requirements. The student must satisfactorily pass this oral examination, as determined by the major professor and supervisory committee, before submission of the final dissertation to the university.

• The dissertation defense will be scheduled only with approval of the major professor, supervisory committee, and the department. The approvals are documented in the Request for Dissertation Defense Examination form. The student will be permitted to schedule the thesis defense only if the student has: 1) completed the research work, 2) written a complete dissertation, and 3) completed the journal manuscripts requirement.

• The defense should be scheduled before the final dissertation submission deadline with sufficient time to allow for revisions; see university deadlines.

• The oral presentation of the dissertation is announced and open to the public.

• The oral defense consists of two parts: 1) a defense presentation that include appropriate use of visual aids and duration of 45-55 minutes and 2) oral examination by the supervisory committee.

• The outcome of dissertation defense determined by the Supervisory Committee and is reported by the major professor to the department in the Dissertation Defense Outcome Form.

Journal Manuscripts

In partial fulfillment of the PhD degree requirements, a PhD student must prepare at a minimum two (2) manuscripts for peer-reviewed journal publication, of which at least one (1) should have the status

of "Accepted."

Suggested Timeline and Checklist

A suggested timeline for completion of PhD degree requirements and milestones checklist is provided below.

Suggested PhD Timeline.

Students may need to enroll in additional hours to maintain full-time status each semester.

Semester	Degree requirement item(s)
Semester 1:	9 hours of approved coursework; Complete RCR training* Identify dissertation topic
Semester 2:	9 hours of approved coursework
Semester 3:	9 hours of approved coursework; Preliminary exam CGN 8988
Semester 4:	12 hours of dissertation research CGN 6980
Semester 5:	12 hours of dissertation research CGN 6980; Submit journal manuscript 1
Semester 6:	xx hours of dissertation research CGN 6980
Semester 7	xx hours of dissertation research CGN 6980; Prepare complete journal manuscript 2; Dissertation defense CGN 8985; Submit approved final dissertation

*See Section 4.3 RCR Training

Ph.D. Milestones Checklist

The list is indicated by Milestone or Action, and When.

Select an Academic Advisor; Identify dissertation topic

Complete RCR training: First Semester

Submit approved Plan of Study: By beginning of second semester, or completion of 9 credit hours

Request transfer credit (if applicable): By completion of 9 credit hours

Complete RCR training: By end of first year

Request preliminary exam; Take preliminary exam

(written and oral) and write proposal: By end of third semester

Journal manuscript 1 accepted for publication: Submit by semester prior to graduation or earlier

Submit approved Degree Certification form: Semester prior to graduation

Apply for graduation with university: Beginning of final semester

Request dissertation defense; Dissertation oral defense: Final semester

Submit approved final PhD dissertation: Final semester; check university for deadlines

Prepare complete journal manuscript 2: Final semester

Complete Exit Survey: End of final semester

Articulation Courses

Students who do not possess an undergraduate degree in Civil or Environmental Engineering will be granted provisional admission and must successfully complete articulation courses and the prerequisite courses necessary for the articulation courses. The articulation courses for students pursuing graduate degrees with civil engineering specialties without a degree in Civil Engineering, or closely related field, are listed in the CEE Graduate Handbook.

-Academic Policies

All students are required to adhere to the policies of the university, the FAMU-FSU College of Engineering, and the CEE department. It is the responsibility of the students to be familiar with these policies early and refer to them throughout their studies. Policies include academic policies, graduation requirements, and thesis and dissertation guidelines.

University requirements and policies are provided by the FAMU Office Graduate Studies and Research and by The Graduate School at FSU (see the FSU Graduate Student Handbook). FAMU-FSU College of Engineering policies may be found on the College's website.

It is the responsibility of the student to be familiar with and comply with all (university, college, and department) requirements. Department academic policies are described in this section.

Academic Performance

Once enrolled into a CEE graduate program, a graduate student must satisfy the following requirements for retention:

• Maintain a cumulative GPA of at least 3.0. If a student's GPA falls below 3.0, the student will be placed on academic probation.

• No grade below a "C" will be credited towards graduate degree requirements.

• A student may repeat one (1) time a course in which a grade of "C" or lower has been earned. Only the grade and credit received in the second attempt will be used in computing the cumulative GPA.

• Satisfy all university graduate student policies.

Coursework

A minimum of one-half the total required coursework must be taken at the FAMU-FSU College of Engineering.

Prerequisites

Students must satisfy prerequisites to enroll in a course. Students entering the major without a civil or environmental engineering degree also must satisfy a set of articulation courses.

Undergraduate Courses

A maximum of two (2) 4000-level courses beyond those required for a previous degree may be accepted for graduate elective credit with prior approval from the CEE department.

Directed Individual Study (DIS)

A maximum of six (6) credit hours from up to two (2) Directed Individual Study (DIS) courses may be applied towards degree requirements with prior approval from the CEE department. The content of the DIS may not directly overlap with thesis or dissertation research work and may not be taken in place of an existing course.

Letter Grade and S/U Grading

The minimum number of hours of coursework taken on a letter-grade basis is as follow: M.S. students, at least 18 hours; M.Eng. students, at least 21 hours; and Ph.D. students, at least 21 hours.

Transfer Credit

Transfer of courses not counted toward a previous degree from another accredited graduate school is limited to six (6) semester hours. In addition, transfer of courses not counted toward a previous degree from the institution in which a student is enrolled (i.e., FAMU or FSU) is limited to twelve (12) semester hours total. In all cases, transfer credits require approval of the department and be completed with grades of "B" or better.

RCR Training

MS and PhD students are required to successfully complete responsible conduct of research (RCR) training as part of degree requirements. This applies to all students whose initial enrollment occurs in Fall 2012 or later.

MS and PhD students must complete RCR training within a year of their initial enrollment to a CEE graduate program. RCR training is optional for MEng students. PhD students who completed RCR training as M.S. students at the FAMU-FSU College of Engineering do not need repeat this training.

Two options are available for RCR training:

Option 1: FSU offers the Responsible Research one-hour graduate course each spring semester. The in-state tuition and textbook will be provided by FSU for each FSU student enrolled in the course (limited to 90 students). For details, FSU's website.

Option 2: FSU offers online training that includes seven 1-hour modules with quizzes. Topics include: Research Misconduct, Data Acquisition and Management, Responsible Authorship and Publication, Responsible Peer Review, Responsible Mentoring, Conflicts of Interest, and Collaborative Science. For additional information, see FSU's website.

• MS and PhD need to confirm that they have completed RCR training in a timely manner and note this in their advising, plan of study, and graduation certification forms. Students who have not successfully complete RCR training by the end of the first year will receive a registration hold, which will be removed once training is completed.

Academic Advising

All graduate students must meet with their advisor (major professor) each semester during registration period. The meeting may be a face-to-face meeting, email, phone, or online conferencing. First semester students who have not selected an advisor can meet with any CEE faculty with Graduate Directive status, preferably in their specialty area.

Graduate students will need to verify that they have met with their advisor, and provide this information (via a signed advising form or email verified by advisor) to the CEE office to have their registration hold removed. Students will not be able to register for the next semester without advising confirmation.

Annual Assessment of Progress

The major professor (advisor) will assess the progress of the graduate student each year, typically at the end of the spring semester. The student will receive this annual assessment in writing. The advisor will provide feedback on the student's progress in completing coursework, thesis or dissertation research, manuscript preparation, and other milestones and requirements. Students with teaching assistantship (TA) or research assistantship (RA) also will receive written assessment on their performance of their duties by their supervisor.

Each year, the supervisory committee, the major professor, or the student's advisor prior to selection of a major professor will assess the progress of the student in writing and will make available copies of the annual review to the student, departmental chair, and academic dean.

University Requirements and Policies

University requirements and policies are provided by the FAMU Office Graduate Studies and Research and by The Graduate School at FSU (e.g., FSU Graduate Student Handbook). It is the responsibility of the student to be familiar with and comply with all (university, college, and department) requirements. Key requirements and policies are highlighted here.

Full-Time and Part-Time Status

A full-time load is twelve (12) hours per semester. Nine (9) hours is considered a full-time load for students with teaching or research assistantships with of at least quarter time (or 10 hours) appointments. Also international students registered for at least nine (9) credit hours per semester are considered full-time.

A student who has completed the required course work, but has not made a final thesis or dissertation submission, shall include in the required full-time load a minimum of two (2) credit hours of thesis or dissertation per semester until completion of the degree. Those with underload permission must register for at least two (2) credit hours of thesis or dissertation per semester.

Doctoral Students Residency Requirement

For Ph.D. students enrolled at FSU, the residency requirement ensures that Doctoral students contribute to and benefit from the complete spectrum of educational, professional, and enrichment opportunities the College of Engineering provides. After having thirty (30) semester hours of graduate coursework, or being awarded the Master's degree, the student must be continuously enrolled in the FAMU-FSU College of Engineering, Department

of Civil & Environmental Engineering, for a minimum of twenty-four (24) graduate semester credit hours in any 12 consecutive months.

Continuous Enrollment

Students not continuously enrolled **from** semester to semester during the academic year (fall and spring) may need to reapply for admission through the university.

Time to Completion

For Master's students, all work towards the Master's degree must be completed within seven (7) years from the time the student originally registers for graduate studies. For Doctoral students, all requirements for the Ph.D. degree must be completed within five (5) calendar years from the time the student passes the preliminary examination, or the student's supervisory committee will require that a new preliminary examination be passed.

International Students

International students must comply with the U.S. Department of Homeland Security rules and regulations. International students enrolled at FAMU are encouraged to consult with the FAMU Office of International Education and Development. International students enrolled at FSU are encouraged to consult with the FSU Center for Global Engagement.

University Wide Standards for Teaching Assistants

Students who assume any teaching assistant (TA) role (e.g., grader, lab TA, course TA) must satisfy the minimum requirements for the specific teaching role(s). Requirements include graduate coursework or a Master's in the discipline, participation in the Program in Instructional Excellence (PIE) fall conference and the PIE workshop on Sexual Harassment certification of spoken English for those whose native language is not English, supervision by a faculty member, and periodic evaluations. For specific requirements, see the document "University Wide Standards for Teaching Assistants," which may be found either at the GradSpace or CEE Students organizations websites in Blackboard.

Faculty

The faculty has broad ranging interests and specialties. Faculty members, their rank, degree, and research areas are listed below:

AbdelRazig, Yassir, Associate Professor, Ph.D., Purdue University; Construction Engineering and Management, Infrastructure Assessment, Computer Applications.

Abichou, Tarek , Professor, Ph.D., University of Wisconsin-Madison; Environmental Geotechnics, Geotechnical Engineering, Waste Containment Systems, Groundwater Remediation, Flow in Porous Media.

Chen, Gang, Associate Professor, Ph.D., University of Oklahoma, P.E.; Subsurface Transport, Environmental Biotechnology, Surface Chemistry, and Geochemistry.

Clark, Clayton, Associate Professor, Ph.D. University of Florida, P.E. Environmental Engineering; Hazardous Waste Management & Contaminant Degradation Site Monitoring & Delineation Water Resources Engineering & Hydrology Environmental & Water Chemistry Remediation of Contaminated Soil and Water Systems Pollutant Transport

Hilton, Amy B. Chan, Associate Professor, Ph.D., University of Virginia, P.E.; Application of Genetic Algorithms to Groundwater

Remediation Systems, Groundwater Modeling, Contaminant Hydrogeology, Surface Water and Estuarine Modeling.

Huang, Wenrui, Professor, Ph.D., University of Rhode Island, P.E.; Hydrodynamic and Pollutant Transport of Estuaries and other Surface Water Systems, Hydraulic and Coastal Engineering Analysis.

Jung, Sunmoon, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign; Structural Engineering; Wind Engineering, Wind Energy, Structural Health Monitoring, Nonlinear Finite Element Analysis

Mtenga, Primus V., Professor, Ph.D., University of Wisconsin, P.E.; Structural Systems; Behavior Modeling and Analysis, Wood and Wood Based Structural Components and Structures, Nondestructive Evaluation (NDE) of Structures, Biocomposites, Structural Mechanics.

Moses, Ren, Professor, Ph.D., Arizona State University, P.E.; Incident Detection and Management Systems, Traffic Operations and Control, Highway Safety Analysis and Remedial Measures, Intelligent Transportation Systems (ITS).

Ozguven, Eren, E., Assistant Professor, Ph.D. Rutgers University; Transportation Engineering.

Wei-Chou Virgil Ping, Professor, Ph.D., University of Texas at Austin, P.E.; Transportation Design and Materials, Pavement Design and Management, Geotechnical Engineering.

Roddenberry, Michelle, Associate Professor, Ph.D., Virginia Tech., P.E.; Prestressed Concrete, Segmental Bridges, Bridge Durability and Structural Monitoring.

Sobanjo, John, Professor, Ph.D., Texas A & M University, P.E.; Transportation Engineering, Infrastructure Engineering and Management, Construction Engineering, Computer Applications.

Spainhour, Lisa, Professor, Ph.D., North Carolina State University, P.E.; Computer Applications in Civil Engineering, Engineering Data Management, Computer Aided Analysis and Design, Composite Materials, Structural Analysis.

Tawfiq, Kamal, Chairman and Professor, Ph.D., University of Maryland, P.E.; Geotechnical Engineering, Soil Structure Interaction, Dynamic/Nondestructive Testing, Numerical Modeling.

Graduate Course Listing according to Areas of Concentration

Definition of Prefixes
CCE - Civil Engineering Construction
CEG - Civil Engineering Geotechnical
CES - Civil Engineering Structures
CGN - Civil Engineering General
CWR - Civil Engineering Water Resources
ENV - Civil Engineering Environmental

TTE - Civil Engineering Transportation

I. Construction Engineering	Sem. Hrs.
CCE 5035 Construction Planning and Scheduling	3
CCE 5036 Project Controls in Construction	3
II. Geotechnical Engineering	
CEG 5015 Advanced Soil Mechanics	4
CEG 5065 Soil Dynamics	3
CEG 5115 Foundation Engineering	3
CEG 5127 Highway Pavement Design	3
CEG 5203 Advanced Site Investigation	3
CEG 5415 Groundwater, Seepage, and Drainage	3
CEG 5705 Environmental Geotechnics	3
III. Structural Engineering	
CES 5105 Advanced Mechanics of Materials	3
CES 5106 Advanced Structural Analysis	3
CES 5218 Fundamentals of Structural Stability Theory	3
CES 5209 Structural Dynamics	3
CES 5325 Bridge Engineering	3
CES 5585 Earthquake/Wind Engineering	3
CES 5606 Advanced Steel Design	3
CES 5706 Advanced Reinforced Concrete Design	3
CES 5715 Prestressed Concrete	3
CES 6116 Finite Elements in Structures	3
IV. Hydraulic/Water Resources Engineering	
CWR 5205 Hydraulic Engineering II	3
CWR 5515 Physical Models of Hydraulic Systems	3
CWR 5516 Numerical Models in Hydraulics	3
CWR 5535 Deterministic Hydrologic Modeling	3
CWR 5635 Water Resources Planning and Management	3
CWR 5646 Multiobjective Water Resources Decision Analysis	3
V. Environmental Engineering	
ENV 5045 Environmental Systems Analysis	3
ENV 5055 Chemical Fate and Transport in the Environment	3
ENV 5105 Air Quality Management	3
ENV 5335 Hazardous Waste Management	3
ENV 5356 Solid Waste Engineering	3
ENV 5407 Water Reuse Engineering	3
ENV 5504 Environmental Engineering Processes and Operations	3
ENV 5565 Design of Water Quality Management Facilities	3
ENV 5615 Environmental Impact Analysis	3
VI. Traffic and Transportation Engineering	
TTE 5006 Transportation Engineering	3
TTE 5205 Traffic Engineering	3
TTE 5206 Advanced Traffic Flow Analysis	3
TTE 5256 Traffic Engineering Operations	3
TTE 5267 Theory of Traffic Flow	3
TTE 5270 Intelligent Transportation Systems	3
TTE 5526 Airport Planning and Design	3
TTE 5606 Transportation System Analysis	3
TTE 5645 Environmental Analysis of Transportation System	3
TTE 5805 Highway Geometric Design	3

Graduate Course Description

CCE 5035 Construction Planning and Scheduling (3) Prereq: CCE 4004. Planning, basic arrow diagramming, basic precedence diagramming, establishing activity duration, scheduling computations, bar charts, project controls, overlapping networks, resource leveling, and program evaluation review technique (PERT).

CCE 5036 Project Controls in Construction (3) Prereq: CCE 4004; EGN 3443. Construction cost estimation, work breakdown structure, and cost control; critical path method (CPM) scheduling, resource-constrained scheduling, and integrated scheduling-cost control; probabilistic scheduling techniques, and linear scheduling techniques; contract specifications, and contract claims (schedule impact) analysis.

CEG 5015 Advanced Soil Mechanics (3) Prereq: CEG 3011. Mechanical behavior, internal stresses, and stability analysis of noncohesive soils, compressibility, consolidation, and settlement of cohesive soils, analytical techniques for predicting earth movement.

CEG 5115 Foundation Engineering (3) Prerequisite: CEG 3011. Design of spread footings, pole and caisson foundations, retaining structures and waterfront structures. Investigation of slope stability.

CEG 5127 Highway and Airport Pavement Design (3) Prereq: CEG 4801. Analysis of materials used for highway and runway pavements; design of rigid and flexible pavements and sub-bases for highways and airports; geotechnical considerations.

CEG 5705 Environmental Geotechnics (3) Prereq: CEG 3011. The geotechnical aspects of waste containment and storage. Aspects of design, construction, and performance of earthen structures for storing or disposing waste or remediating contaminated sites.

Structural Engineering

CES 5105 Advanced Mechanics of Materials (3) Prerequisites: CES 3100; EGN 3331. This course covers analysis and design of load-carrying members, shear center, unsymmetrical bending, curved beams, beams on elastic foundations, energy methods, theories of failure, thick-walled cylinders, and stress concentrations.

CES 5106 Advanced Structural Analysis (3) Prerequisites: CES 3100; EGN 3331. This course covers matrix algebra review, direct stiffness method for truss analysis, computer applications, statically indeterminate structures, slope-deflection and moment distribution methods, and computer modeling and analysis of structures using commercial FE codes.

CES 5144 Matrix Methods for Structural Analysis (3) Prerequisites: CES 4101; MAP 3305. This course covers selected fundamental techniques, including energy methods, for the formulation of the stiffness method for structural analysis. Topics include formation of element matrices, transformed element matrices, structure stiffness matrices, and equations of equilibrium. Solution techniques using computers are also covered.

CES 5209 Structural Dynamics (3) Prereq: CES 4101; MAP 3305. This course covers analysis and design of single- and multi-degree-of-freedom structures subjected to various types of excitations and initial conditions. Topics include computational aspects of dynamic analysis, including approximate methods of analysis, and introduction to earthquake loading and design.

CES 5218 Fundamentals of Structural Stability Theory (3)

Prereq: CES 4101. This course covers elastic and inelastic buckling of columns including large deformation theory and imperfect columns, beam column theory, and buckling of frames. Methods of analysis include the formation and solution to differential equations, energy methods, and matrix methods. AISC stability design techniques are used with LRFD format. Computer software is used as a teaching tool.

CES 5325 Bridge Engineering (3) Prereq: CES 4605, 4702. This course is an introduction to design of modern steel and concrete highway bridges. Topics include materials and properties, loads on bridges, and substructure design. AASHTO LRFD Specifications are used.

CES 5585 Earthquake/Wind Engineering (3) Prereq: CES 4101; MAP 3305. This course covers fundamentals of structural dynamics for earthquake and wind loading. Topics include response of undamped and damped single/multi degree-of-freedom structures subjected to earthquake or wind dynamic loadings, response spectra, and Fourier analysis and frequency domain.

CES 5606 Advanced Steel Design (3) Prereq: CES 4101, 4605. This course covers the behavior of complex steel elements and structures. Topics include analysis and design of columns and beams under combined effects of flexure, shear and torsion. Other topics include lateral torsional buckling, plastic analysis, design of plate girders, and design of frames.

CES 5706 Advanced Concrete Design (3) Prereq: CES 4101, 4702. This course covers advanced topics pertaining to complex reinforced concrete elements and structures. Topics include analysis and design for torsion, biaxial columns, slender columns, two-way slabs, retaining walls, shear walls, deep beams, and the strut-and-tie method.

CES 5715 Prestressed Concrete (3) Prereq: CES 3100; EGN 3331. This course covers the behavior and design of prestressed concrete structures. Topics include design of prestressed concrete beams for flexure and shear, design of slabs, prestressing losses, serviceability of prestressed concrete members, and precast members.

CES 5845 Composites in Civil Engineering (3) Prereq: CCE 3101; CES 3100; EGN 3331. This course covers fundamental theories of composite materials. Topics include forms of composites and their reinforcements; physical, chemical, and mechanical properties; design and testing methods; and civil engineering applications of composite materials.

CES 6116 Finite Elements in Structures (3) Prereq: CES 4101; MAP 3305. This course covers basic concepts of finite element analysis. Topics include boundary conditions; computer techniques used in structural analysis; structural finite elements for trusses, beams, beams on an elastic foundation, and frames; plane stress and plane strain in triangular elements; and engineering modeling.

CGN 5310 Engineering Data Systems (3) Conceptual data modeling; application and use of relational database management systems and geographical information systems; introduction to modern conceptual tools (genetic algorithms, neural networks, etc.); completion of individual projects applying course knowledge to sub-disciplines within the civil engineering program, according to student interest.

CGN 5905r Directed Individual Study (1–6). (S/U grade only.) May be repeated to a maximum of six (6) semester hours when topics change.

CGN 5910r Supervised Research (1–6). (S/U grade only.) May be repeated to a maximum of six (6) semester hours, and a maximum of three (3) semester hours may apply to the master's degree.

CGN 5930r Special Topics (1–6). Special topics in civil engineering with emphasis on recent developments. May be repeated to a maximum of six (6) semester hours. Consult instructor.

CGN 5931r Special Topics in Civil Engineering (1–6). Special topics in civil engineering with emphasis on recent developments. Contents and credits will vary. May be repeated to a maximum of six (6) semester credit hours. Consult instructor.

CGN 5935 Civil Engineering Seminar (0). (S/U grade only.) Prerequisite: Graduate student status. Graduate students are expected to enroll in the course every semester they are enrolled at FAMU or FSU. The students should attend at least 75% of the seminars offered each semester to obtain a satisfactory grade.

CGN 5971r Master's Thesis (1–6). (S/U grade only.) A thesis representing six (6) credit hours of academic work is a requirement for the master's degree in civil engineering. This course provides a means of registering for thesis work and recording progress toward completion. A maximum of six (6) credit hours may be applied toward the master's degree. May not be repeated for more than six (6) semester credit hours.

CGN 5974r Master's Project (3). (S/U grade only.) A master's project representing three (3) semester hours of academic work is a requirement for the MS degree with the non-thesis option in civil engineering. This course provides a means of registering for master's project work. May be repeated twice; will focus on research, design, or evaluation of a relevant civil engineering problem.

CGN 6942 Supervised Teaching (3). (S/U grade only.) Prerequisite: Doctoral candidate status. Students receive credit for teaching an undergraduate course under supervision of graduate faculty. PhD candidacy required.

CGN 6972 Master's Thesis Defense (0). (P/F grade only.) Prerequisite: CGN 5971. Required of students enrolled in the master's thesis option. Students must register in the semester they plan to defend their thesis.

CGN 6980r Dissertation (1–24). (S/U grade only.) Prerequisite: doctoral candidate status. A dissertation representing twenty-four (24) semester hours of academic work is a requirement for the PhD degree in civil engineering. This course provides a means of registering for dissertation and recording progress toward completion. May be repeated as often as approved by the supervisory committee. A maximum of twenty-four (24) semester hours may be applied toward the PhD degree.

CGN 8985r Dissertation Defense (0). (P/F grade only.) Prerequisite: Doctoral candidacy. Must be included in the final semester schedule for all doctoral students. May be repeated once.

N 8988r Doctoral Preliminary Exam (0). (P/F grade only.) All doctoral students must enroll in the course the semester they intend to take the qualifying exam. May be repeated once.

CWR 5125 Groundwater Hydrology (3) Prereq: CWR 3201; EES 3040. This course examines the fundamentals of groundwater flow and contaminant transport. Topics include: Darcy's law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties, 3-D equation of groundwater flow, regional recirculation, unsaturated flow, recharge, stream-aquifer interaction, well hydraulics, slug test analyses and contaminant transport processes.

CWR 5205 Hydraulic Engineering II (3) Prereq: CWR 4202, MAP 3305. Course presents advanced hydraulic concepts and their incorporation into the design process. Methods of solving such problems are also presented.

CWR 5305 Urban Stormwater Runoff (3) Prereq: CWR 3201.

Corequisites: CWR 4101. This course investigates the effects of urban stormwater runoff on surface and ground water resources. Topics include legal and regulatory requirements, methods of engineering analysis and design of storm water systems.

CWR 5516 Numerical Models in Hydraulics (3) Prereq: CWR 3201, 3201L, MAP 3305. Numerical approaches including finite element techniques used in hydrology and hydraulics are presented and applied to simple engineering case studies.

CWR 5635 Water Resources Planning and Management (3) Prereq: CWR 4101, 4202. Quantity and quality planning of water resources systems. Economic considerations.

CWR 5824 Coastal and Estuarine Hydraulics (3) Prerequisites: CWR 3201; MAC 2313. This course examines numerous topics including coastal hydraulic principles and waves in estuaries and coastal oceans, wave properties and wave forces on coastal structures, tidal motions, mixing and transport in estuaries, and coastal engineering analysis.

ENV 5028 Remediation Engineering (3) Prereq: ENV 4001 or equivalent.. This course reviews various innovative remediation technologies used for clean up of contaminated soil and groundwater at a site such as air sparging, soil vapor extraction, reactive walls, reactive zones, stabilization technologies, hydraulic pneumatic fracturing and pump-and-treat systems.

ENV 5030 Applied Environmental Engineering Microbiology (3) Prereq: ENV 4001 or equivalent. This course focuses on the survey of environmentally important microbes and the roles they play in environmental restoration processes. Major topics include basics of microbiology, stoichiometry and bacterial energetics, bioremediation and other environmental microbiology applications, and detoxification of hazardous chemicals.

ENV 5045 Environmental Systems Analysis (3) Prereq: ENV 4001, MAC 2311 Systems analysis techniques applied to the solution of environmental problems with particular emphasis on linear and dynamic programming.

ENV 5055 Chemical Fate and Transport in the Environment (3) Prereq: CWR 3201; EES 3040; or equivalent, MAP 3305 Study of the processes of pollutant chemicals transformation in and transport between air, water, and soil or sediments. Use and development of predictive mathematical models for the remediation of existing contaminated sites or prevention of future contamination from new sources.

ENV 5105 Air Pollution Control (3) Prereq: ENV 4001. This course investigates analytical concepts for determination of sources, amounts, and transport of air pollutants; health and environmental effects; design of control devices and management programs.

ENV 5407 Water Reuse Engineering (3) Prereq: ENV 4001 or equivalent. Course covers wastewater reclamation and reuse; treatment processor and systems; monitoring and control instrumentation; health and social aspects; design of facilities/systems.

ENV 5504 Environmental Engineering Processes and Operations (3) Prereq: ENV 4001 or consent of instructor. Operational and design features of the physical, chemical, thermal, and biological treatments used in engineering for the management of solid and hazardous wastes.

ENV 5565 Design of Water Quality Management Facilities (3) Prereq: CWR 3201, EES 3040, 3040L. Analysis of operations, processes, and systems used in the design of facilities for maintaining water supply quality, wastewater control, and aquatic pol lution control. Design of wastewater collection systems, water and wastewater treatment plants, and systems for disposal for residuals from such facilities.

ENV 5615 Environmental Impact Analysis (3) Prereq: ENV 3040, 3040L. Analysis of various measures of environmental quality. Impacts on different types of resources and benefit-cost in environment impact assessment.

TTE 5205 Traffic Engineering (3) Prereq: TTE 3004 or equivalent. Nature, characteristics, and theories of traffic flow. Street and highway traffic problems. Traffic survey procedures. Origin-destination studies. Theory and design of automatic control of traffic systems. Transit systems.

TTE 5206 Advanced Traffic Flow Analysis (3) Prereq: TTE 3004. Course covers microscopic and macroscopic characteristics, traffic stream models, demand-supply analysis, shockwave analysis, queueing analysis, computer simulation models, and intelligent transportation systems.

TTE 5256 Traffic Operations (3) Prereq: TTE 3004. Course covers principles of capacity, freeways, rural highways, urban streets, transportation systems, and computer simulation.

TTE 5270 Intelligent Transportation Systems (3) Prereq: TTE 3004. Course covers advanced traffic management systems (ATMS), advanced traveler information systems (ATIS), advanced vehicle control systems, commercial vehicle operations, rural ITS human factors, institutional issues, architecture and standards, simulation and modeling.

TTE 5805 Highway Geometric Design (3) Prereq: CEG 2202, 2202L; TTE 3004. Principles and procedures for the geometric design of highways and streets; considerations of traffic, land use, and aesthetic factors.

Department of Electrical and Computer Engineering

Description: The mission of the Department of Electrical and Computer Engineering is to provide an innovative academic undergraduate program of excellence to its majors; to produce graduates whose academic achievements match or exceed those of recognized state supported engineering colleges; to produce a greater number of graduates from groups traditionally underrepresented (especially, for historical reasons, African American and female graduates) in electrical and computer engineering; and to achieve national and international recognition through the excellence of its faculty and student research and scholarly pursuits, as well as their professional and service endeavors.

Bachelor of Science in Electrical Engineering

Program Educational Objectives

Our B.S. in Electrical Engineering graduates will:

1. Have a successful career in electrical engineering;

2. Be enrolled in or have completed a M.S. or Ph.D. program;

3. Have a career in digital systems, DSP, control systems, microelectronics, power systems or electromagnetics;

4. Participate in either the research, development or application of engineering solutions that have had a positive impact on society;

5. Make contributions to workforce diversity;

6. Have shown a commitment to life-long learning and continuous

self-improvement; and

7. Have become proficient in the oral and written communications of their work and ideas.

Bachelor of Science in Computer Engineering - Program Educational Objectives

Our B.S. in Computer Engineering graduates will:

1. Have a successful career in computer engineering;

2. Be enrolled in or have completed a M.S. or Ph.D. program;

3. Have a career in digital systems, DSP, computer networks or VLSI;

4. Participate in either the research, development or application of engineering solutions that have had a positive impact on society;

5. Make contributions to workforce diversity;

6. Have shown a commitment to life-long learning and continuous self-improvement; and

7. Have become proficient in the oral and written communications of their work and ideas.

Students graduating from the BS EE degree program will also have a knowledge of electrical engineering applications selected from the communication systems, control systems, digital signal processing, digital systems, electromagnetics, microelectronics, and power systems areas.

Students graduating from the BS CpE degree program will also have a knowledge of computer science and computer engineering topics including advanced logic design, advanced programming, algorithms, computer architecture, data structures, and operating systems.

The department faculty has established a process to periodically review and revise its program educational objectives after obtaining feedback from its primary constituent groups. The faculty also is committed to teaching professional and ethical responsibility by example and by practice. The active sponsored research activities of the faculty ensure the program curriculum remains contemporary and motivates the need for life-long learning.

Technical Electives

Electrical Engineering technical electives provide the student an opportunity to achieve a greater breath of knowledge and some degree of specialization in selected areas of special interest. Electives are offered in computer engineering and the following five electrical engineering application areas:

1. Microelectronics deals with all aspects of (primarily solid-state) electronic devices, the analysis and design of analog and digital circuits, their implementation and fabrication using microelectronic techniques, and their application in a wide variety of system;

2. Digital signal processing and control systems concentrate on the design and analysis of systems in which discrete and continuous signals are used for conveying information and controlling physical systems and processes. Included are the encoding, decoding, and representation of information in both the time and frequency domain;

3. Communications is concerned with the preparation, transmission, and reception of encoded information via media ranging from wires to fiber optic cables and space. Included are topics such as AM, FM, and pulse modulation techniques; telecommunication systems; satellite telemetry; and computer networks;

4. Electromagnetics in the broadest sense is the study of the relationship between electric current, electric and magnetic fields, and their interactions. It is the foundation of electrical and electronic technology. The practical applications of this theory include the design of antennas, transmission lines, RF, microwave and optical transmission facilities, and radar;

5. Power systems engineering is concerned with the design and operation of electric power generation, transmission, and distribution for an increasing customer demand. It involves the modeling, analysis, and design of power system components including power transformers, electric motors, synchronous generators, and high voltage power transmission and distribution networks. Power system engineering also includes: the investigation of alternative methods for generating electrical energy, the control and reliability of complex power networks, power quality, economic factors, and environmental effects.

The department maintains well-equipped, dedicated instructional laboratory facilities for each required laboratory course and research laboratories in each major area of interest. The department has access to a large number of personal computers, advanced workstations, and specialized CAD systems. Open-access facilities are also available for design projects and preparation of technical documentation.

Honors in the Major

The Department of Electrical and Computer Engineering offers a program of honors in electrical engineering to encourage the talented student to extend his or her undergraduate experience by participating in directed or independent research on a topic relative to electrical engineering that is not included in the regular curriculum. For requirements and other information, see the "University Honors Program, Honors-Undergraduate" sections of this General Catalog.

BS-MS Degree Program

The BS-MS degree program is a combined undergraduate-graduate program. This program is designed for five years of full time study. It provides students with a unique opportunity to combine advanced undergraduate and graduate studies in mechanical engineering with practical, real-world, product-oriented experience in the engineering of mechanical systems.

The BS-MS program is designed for admission from within the College of Engineering student body. Well-qualified students, who are expected to have a GPA of 3.2 or better in engineering studies, are invited to apply for the program during the spring semester of their third year in the College. Qualified students may complete

the online application form.

Faculty

Chairman: Foo, Simon Y
Professors: Arora, Rajendra K.; DeBrunner, L.; DeBrunner, Victor E; Foo, Simon Y.; Li, Hui.; Meyer-Baese, Uwe.; Perry, Reginald J.; Roberts, Rodney G.; Weatherspoon, Mark H.; Zheng, Jim P.
Associate Professors: Andrei, Petru; Bernadin, Shonda; Edrington, Chris S.; Harvey, Bruce A.; Kwan, Bing W.; Tung, Leonard J.; Yu, Ming
Assistant Professors: Faruque, O.; Moss, P.
Associate in Electrical Engineering: Brooks, Geoffrey W.; Barnes, Jerome
Assistant in Electrical Engineering: Hughes, Clayton

State of Florida Common Program Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program. Students are strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

The following lists the common program prerequisites or their substitutions necessary for admission into this upper-division degree program:

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283
4. MAP X302 or MAC X305
5. CHM X045/X045L or CHMX045C or CHS X440
6. PHY X048/X048L or PHYX048C or PHYX043/X048L
7. PHY X049/X049L or PHYX049C or PHYX044/X049L

Common Required Courses for Bachelor of Science Degrees and Dual Majors

All candidates for bachelor of science degree in electrical engineering (BSEE) and bachelor of science degree in computer engineering (BSCpE) are required to complete a total of one hundred (100) semester hours of common required courses, of which twenty-four (24) hours are English, social science and humanities courses (General Studies Courses), forty-two (42) hours are engineering core courses (listed below), and thirty-four (34) hours are required electrical and computer engineering courses (listed below).

General Education Courses	**(24 Credits)**
ENC 1101 Freshman Communication Skills I	3
ENC 1102 Freshman Communication Skills II	3
Social Sciences	6
XXX xxxx Humanities	6
XXX xxxx Social Sciences or Humanities	6

Engineering Core Courses	**(42 Credits)**
*CHM 1045 General Chemistry I	3
*CHM 1045L General Chemistry I Laboratory	1
*COP 2221 Programming in C Language	4
EGM 3512 Engineering Mechanics	2
EML 3100 Thermodynamics	4
*MAC 2311 Calculus with Analytical Geometry I	4
*MAC 2312 Calculus with Analytical Geometry II	4
8MAC 3313 Calculus with Analytical Geometry III	5
*MAP 3305 Engineering Mathematics I	
Or MAP 2302 Differiential Equations	3
MAP 3306 Engineering Mathematics II	
Or MAP 3105 Linear Algebra	3
*PHY 2048 General Physics I	4
*PHY 2048L General Physics I Laboratory	1
*PHY 2049 General Physics II	4
*PHY 2049L General Physics II Laboratory	1

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisites Manual at www.facts.org will be accepted.

Required Electrical Engineering Courses	**(34 Credits)**
EEL 3111 Introduction to Circuit Analysis	3
EEL 4905 ECE Tools Lab	1
EEL 3112 Advanced Circuits with Computers	3
EEL 3112L Advanced Circuits with Computers Laboratory	1
EEL 3135 Signal and Linear Systems Analysis	3
EEE 3300 Electronics	3
EEE 3300L Electronics Laboratory	1
EEL 3472 Electromagnetic Fields I	3
EEL 4515 Digital Communications	3
EEL 3705 Digital Logic Design	3
EEL 3705L Digital Logic Laboratory	1
EEL 4021 Statistical Topics in Electrical Engineering	3
EEL 4746 Microprocessor-Based System Design	3
EEL 4746L Microprocessor-Based System Design Laboratory	1
EEL 4911C Senior Design Project I	3

Requirements for a Major in Electrical Engineering

Students majoring in electrical engineering are required to complete a total of 128 semester hours of course work, of which one hundred (100) are Common Required Courses, twelve (12) are required Tier-2 electrical engineering course, thirteen (13) semester hours are technical elective courses, and three (3) semester hours of EEL 4915C Electrical Engineering Senior Design Project II.

Technical Electives for Electrical Engineering Major

- One (1) semester hour must be an electrical engineering (EE) laboratory elective;
- Twenty-one (21) semester hours must be EE technical electives, and

• Three (3) credits may be an EE or a non-EE elective.

The non-EE technical elective must be selected from a list of departmentally approved courses offered by other departments at Florida A&M University. Courses not on the list may be taken with prior approval of the department.

Requirements for a Major in Computer Engineering

Students majoring in computer engineering require 128 semester credit hours to graduate, of which one hundred (100) hours are Common Required Courses listed above. The other twenty-eight (28) semester credit hours include sixteen (16) semester hours of CIS courses (listed below), six (6) semester hours of required computer engineering courses: EEE 4710 Introduction to Field Programmable Logic Devices (3) and EEL 4713 Computer Architecture (3), and six (6) semester hours of technical electives, and three (3) semester hours of EEL 4914C, Computer Engineering Senior Design Project II.

Required CIS Courses

COT 3100 Discrete Structures I	3
COP 3014 Fundamentals of Programming	3
COP 3014L Fundamentals of Programming Laboratory	1
COP 3330 Object Oriented Programming	3
COP 3530 Program, Data and File Structures	3
COP 3610 Operating System	3

For a current list of approved technical electives for a computer engineering major, see or call the department.

Requirements for a Double Major in Electrical Engineering and Computer Engineering

Students dual-majoring in electrical engineering and computer engineering must take the common required courses (one-hundred three [103] semester hours), required CIS courses (thirteen [13] semester hours) and required computer engineering courses: EEL 4710 and EEL 4713 (each three [3] semester hours) plus sixteen (16) semester hours of electrical engineering technical electives and special requirements.

Technical Electives and Special Requirements for a Dual Major

• Three (3) semester hours must be EEL 4914C Computer Engineering Senior Design Project II; and

• Three (3) semester hours must be EEL 4915C Electrical Engineering Senior Design Project II

Suggested Course Sequence for Electrical Engineering Major (starting with Calculus I)

(Note: This is an example which shows how degree requirements can be satisfied in eight regular and one summer term. Other course sequences are possible and allowable as long as course prerequisites are observed. Students should verify their plan of study with their advisors).

First Year	**Sem. Hrs.**
Fall Semester	
ENC 1101 Freshman Communicative Skills I	3
MAC 2311 Calculus I	4
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry I Lab	1
Humanities Elective I (Gordon Rule)	3
Total	**14**
Spring Semester	
ENC 1102 Freshman Communication Skills II	3
MAC 2312 Calculus II	4
PHY 2048 General Physics I	4
PHY 2048L General Physics I Laboratory	1
Humanities Elective II (Gordon Rule)	3
Total	**15**
Summer Semester	
AMH 2091 Introduction to African-American History (Soc. Sci. I)	3
Social Science Elective II	3
Humanities Elective III (Gordon Rule)	3
Total	**9**
Second Year	
Fall Semester	
PHY 2049 General Physics II	4
PHY 2049L General Physics II Laboratory	1
COP 2221 Programming in C Language	3
MAC 3313 Calculus III	5
EEL 3111 Introduction to Circuit Analysis	3
EEL 4905 ECE Tools Lab	1
Total	**17**
Spring Semester	
MAP 3305 Engineering Math I **or** MAP 2302 Differential Equations	3
EEL 3112 Advanced Circuits w/Computers	3
EEL 3112L Advanced Circuits Laboratory	1
EEL 3705 Digital Logic Design	3
EEL 3705L Digital Logic Design Laboratory	1
EGM 3512 Engineering Mechanics	2
Total	**15**
Third Year	
Fall Semester	
MAP 3306 Engineering Math II **Or**	
MAS 3105 Linear Algebra	3
EEE 3300 Electronics I	3
EEE 3300L Electronics I Laboratory	1
EEL 3135 Signals and Linear Systems Analysis	3
EEL 4746 Microprocessors	3
EEL 4746L Microprocessors Laboratory	1
Total	**14**
Spring Semester	
EEL 4021 Statistical Topics in Electrical Engineering	3
EML 3100 Thermodynamics	2
EEL 3472 Electromagnetic Fields I	3
EEL 4515 Digital Communications	3
Humanities Elective IV (Gordon Rule)	3
Total	**14**

Fourth Year
Fall Semester

EEL Tier-2 Course I and II	6
EEL 4911C Senior Design Project I	3
EEL Elective Laboratory	1
EEL Technical Electives 1 and II	6
Total	16

Spring Semester	**Sem. Hrs.**
EEL Tier-2 Course III and IV	6
EE or Non-EE Technical Elective	3
EE Technical Elective III	3
EEL 4915C Electrical Engineering Senior Design Project II	3
Total	**15**
Total Semester Hours	**128**

Suggested Course Sequence for Computer Engineering Major (starting with Calculus I)
First Year
Fall Semester

ENC 1101 Freshman Communicative Skills I	3
MAC 2311 Calculus I	4
CHM 1045 General Chemistry I	3
CHM 1045L General Chemistry Lab	1
Humanities Elective I (Gordon Rule)	3
Total	**14**

Spring Semester

ENC 1102 Freshman Communicative Skills II	3
COP 3014 Fundamentals of Programming	4
MAC 2312 Calculus II	4
PHY 2048 General Physics I	4
PHY 2048L General Physics I Laboratory	1
Total	**16**

Summer Semester

AMH 2091 Introduction to African American-History (Soc. Sci. I)	3
Humanities Elective II (Gordon Rule)	3
Social Science Elective II (Non-History)	3
Total	**9**

Second Year
Fall Semester

PHY 2049 General Physics II	4
PHY 2049L General Physics II Lab	1
COT 3100 Discrete Structures I	3
MAC 3313 Calculus III	5
EEL 3111 Introduction to Circuit Analysis	3
EEL 4905 ECE Tools Lab	3
Total	**19**

Spring Semester

COP 3330 Object Oriented Programming	3
MAP 3305 Engineering Math I **or** MAP 2302 Differential Equations	3
EEL 3112 Advanced Circuits w/Computers	3
EEL 3112L Advanced Circuits w/Computers Laboratory	1
EEL 3705 Digital Logic Design	3
EEL 3705L Digital Logic Design Laboratory	1
Total	**14**

Third Year
Fall Semester

MAP 3306 Engineering Math II **or** MAS 3105 Linear Algebra	3

Sem. Hrs.	
EEL 3135 Signals and Linear Systems Analysis	3
EEL 3300 Electronics	3
EEL 3300L Electronics Laboratory	1
EEL 4746 Microprocessors	3
EEL 4746L Microprocessors Laboratory	1
Total	**14**

Spring Semester

COP 3530 Program, File and Data Structures	3
EEL 4515 Digital Communications	3
EEL 4021 Statistical Topics in Electrical Engineering	3
EEL 4710 Introduction to FPLDs	3
Total	**12**

Fourth Year
Fall Semester

EE Technical Elective	3
EGM 3512 Engineering Mechanics	4
EEL 4713 Computer Architecture	3
EEL 4911C Senior Design Project I	3
Humanities Elective III (Gordon Rule)	3
Total	**16**

Spring Semester

COP 3610 Operating Systems	3
EE or Non-EE Technical Elective	3
Humanities Elective IV (Gordon Rule)	3
EEL 3100 Thermodynamics	2
EEL 4914C Computer Engineering Senior Design Project II	3
Total	**14**
Total Semester Hours	**128**

BS-MS Program Degree Requirements

The degree requirements for the BS-MS program are as follows:

Undergraduate Curriculum (Senior Year)

Fall Semester

- EML 4551C - Senior Design Project I (3)
- STA 3032 - Applied Statistics for Engineers and Scientists (3)
- Technical Elective (3)
- Technical Elective (3)
- Graduate Course or Technical Elective (3)

NOTE: STA 3032 may be used to satisfy either the 5th math option or a technical elective requirement.

Spring Semester

- EML 4552C - Senior Design Project II (3)
- Technical Elective (3)
- Graduate Course or Technical Elective (3)
- Graduate Course or Technical Elective (3)

Registering for Graduate Courses
To register for a graduate course students must complete a Request to Take Graduate Courses form. The form is available in the Registrar's Office. The form must be submitted to the university no later than the third day of classes. Students must earn a 'B' grade or better in each graduate level course taken.
Admission to the Graduate Program
BS-MS students must apply for admission to the graduate program. The application is available online. Students must apply for the summer term. Applications are due March 1. Letters of recommendation are not required for BS-MS students. However students should submit all other required documents.

GRE
The Revised GRE is required for admission to graduate program. BS-MS students should take the GRE no later than February 15 to meet the March 1 application deadline.

Graduate Curriculum
All BS-MS students must take the following distribution of courses for a total of thirty-three (33) credit hours. Six (6) of the thirty-three (33) credit hours must be taken during the senior year of the student's BS degree program. The remaining twenty-seven (27) credit hours are taken as part of the MS program.

Summer Semester
- EML 5946 - Professional Internship Experience (4)

Fall Semester
- Graduate Course (3)
- Graduate Course (3)
- Graduate Course (3)
- EML 5930 - Graduate Design Project I (3)
- EML 5935 - Mechanical Engineering Seminar (0)

Spring Semester
- Graduate Course (3)
- Graduate Course (3)
- EML 5930 - Graduate Design Project II (5)
- EML 5935 - Mechanical Engineering Seminar (0)

Note: Students may take one graduate-level, letter-graded elective in engineering, mathematics, and/or any science discipline (e.g. computer science, physics, etc.).

Academic Requirements and Policies

In accordance with ABET criteria, all engineering students are subject to a uniform set of academic requirements agreed to by both FAMU and FSU. These requirements have been established

to ensure that program graduates receive a quality education and make reasonable progress toward satisfying engineering major degree requirements. Students are directed to "FAMU-FSU College of Engineering" Chapter of this Catalog and the departmental website for a list of all academic requirements and policies.

ECE Course Prerequisite Requirement

In addition to the college course prerequisite requirements, the Department of Electrical and Computer Engineering requires students to have obtained a grade in the range of "C" in all courses listed as prerequisites for the department's engineering core courses.

Definition of Prefix

EEL - Electrical Engineering

Course Descriptions

EEL 3003 Introduction to Electrical Engineering (3). Prerequisites: MAC2312; PHY2049; PHY 2049L; Corequisite: EEL3003L. Introduction to electrical engineering concepts for non-electrical engineering majors. Covers a broad range of topics including basic circuit theory, semiconductor devices, instrumentation, amplifiers, and machines.
EEL 3003L Introduction to Electrical Engineering Laboratory (1) Prerequisites: MAC2312; PHY2049; PHY 2049L; Corequisite: EEL 3003. Laboratory in support of EEL 3003. Must be taken concurrently with the first enrollment in EEL 3003. Must be dropped if EEL 3003 is dropped.
EEL 3111 Introduction to Circuit Analysis (3) Prerequisite: MAC2312; Corequisite: PHY 2049; PHY 2049L; MAC 3313. Current, voltage, and power; resistors, inductors, and capacitors; network theorems and laws; pharoses; impedance's; sinusoidal steady-state analysis.
EEL 3112 Advanced Circuits with Computers (3) Prerequisite: EEL3111; Corequisite: MAP3305 or MAP 2302. Sinusoidal steady-state power analysis; three-phase circuits; operational amplifier; transient and forced response; frequency response; two-port networks; circuit analysis with computers.
EEL 3112L Advanced Circuits with Computers Laboratory (1) Prerequisite: EEL3111; Corequisite: MAP3305 or MAP 2302; EEL3112. Instrumentation and measuring techniques; current, voltage, and power measurements; response of passive circuits; AC and DC design; computer applications.
EEL 3135 Signal and Linear System Analysis (3) Prerequisite: EEL3112; MAP 3305 or MAP 2302. Classification and representation of signals and systems; Laplace transform; Z-transform; convolution; state variable techniques; stability and feedback.
EEL 3216 Fundamentals of Power Systems (3) Prerequisite: EEL3112. Introduction to the fundamentals of energy conversion; structure of power systems; and power system components: transformers, rotating machines, and transmission lines. The operation and analysis of power systems are presented.
EEE 3300 Electronics (3) Prerequisite: EEL3112. Diode models and circuits; DC biasing of bipolar-junction and field-effect transistors; small- and large-signal transistor models; frequency analysis of single-stage AC amplifiers.
EEE 3300L Electronics Laboratory (1) Prerequisites: EEL3112; EEL3112L; Corequisite: EEL3300. Laboratory in support of EEL3300.
EEL 3472 Electromagnetic Fields I (3) Prerequisites: EEL 3112; MAP 3306 or MAS 3105; PHY2049; PHY 2049L. Corequisite: COP2221. Vector analysis – orthogonal coordinate system, vector operators (gradient, divergence, curl, Laplacian); electrostatics electric charge and current, Coulomb's law, Gauss' law, electric potential and field gradient, Poisson's equations,

resistance, permittivity, capacitance, electrostatic energy, magnetostatics - magnetic force and torque, Biot-Stavart law, Ampere's law, vector potential, magnetic moment, permeability, hysteresis, inductance, magnetostatic energy; time-varying fields: induction. Faraday's law, displacement current, Maxwell's equations, boundary conditions; transmission lines – propagation equations, characteristic impedance, reflections, input impedance, lossless lines, power flow, losses, the Smith chart, impedance matching.

EEL 3473 Electromagnetic Fields II (3) Prerequisite: EEL3472. Maxwell's equations, plane waves – time-harmonic fields and Maxwell's equation propagation in free space and in lossy media current flow in conductors. Power density, polarization; wave reflection and transmission – Snell's law, reflection and transmission guided waves; radiation and antennas – basic antenna properties and parameters (radiation pattern, beam width, directivity, effective aperture), short dipoles, antenna arrays, large-aperture antennas; applications in satellite communication, wireless systems, and remote sensing.

EEL 3512 Introduction to Communications (3) Prerequisites: EEL3112; MAP3306 or MAS 3105. Signal analysis, Fourier series/Fourier transform, sampling theorem, distortions in signal transmission, and analog modulation - AM, FM, pulse modulation, pulse-code modulation and pulse shaping.

EEL 3705 Digital Logic Design (3) Prerequisite: COP2221 or COP 3014. Fundamental topics in digital logic design, algorithms, computer organization, assembly-language programming, and computer engineering technology.

EEL 3705L Digital Logic Design Laboratory (1) Prerequisite: COP2221 or COP 3014; Corequisite: EEL3705. Laboratory in support of EEL3705.

EEL 3949r Cooperative Work Experience (0) (S/U grade only.)

EEL 4021 Statistical Topics in Electrical Engineering (3) Prerequisite: EEL 3112; MAP3306 or MAS 3105. Use of probability and statistical concepts in electrical engineering applications. Elementary probability - sets, sample spaces, axioms, joint and conditional probability. Random variables - distribution and density functions. Operations in random variables - expectation, moments, transformation of random variables. Multiple random variables. Introduction to Random processes. Elements of statistics: parameter estimation and hypothesis testing.

EEL 4113 Advanced Linear Networks (3) Prerequisites: EEL3112; EEL3135. Synthesis of LC one-port networks; synthesis of LC two-port networks; operational amplifier applications; active filters; approximation methods; switched-capacitor filters.

EEL 4213 Power System I (3) Prerequisite: EEL3216. Analysis of electric power systems using system modeling for large-scale power networks; admittance and impedance matrix formation; power flow; optimal dispatch; symmetrical components; balanced and unbalanced fault analysis, and transient stability studies.

EEL 4220 Electromechanical Dynamics (3) Prerequisites: EEL 3216; EEL 3472. Corequisite: EEL 3473. The study of magnetic circuits, electromagnetic torques and induced voltages. Topics covered include induction motors, variable speed drives, Park's transforms, synchronous machines and generator controls DC machine, controls and drives.

EEL 4243 Power Electronics (3) Prerequisites: EE: 3135; EEL 3300. The purpose of this course is to develop a basic understanding of using switched electronic circuits for the conversion and regulation of power. The course focuses on the basic converters and their steady analysis. Dynamic modeling analysis, controller design, power semiconductor device, and simulation also are covered.

EEL 4301 Electronic Circuits and Systems Design (3) Prerequisite: EEL3300; EEL3300L. Multistage amplifier analysis and design including feedback and operational amplifiers, A-to-D and D-to-A converters, wave shaping and wave forming generators including oscillators, voltage regulators, and power circuits. Includes use of computer-aided-design programs.

EEL 4301L Electronic Circuits and Systems Laboratory (1) Prerequisites: EEL3300; EEL3300L. Corequisite: EEL4301. Laboratory in support of EEL4301.

EEE 4313 Introduction to Digital Integrated Circuit Design (3) Prerequisite: EEL3300. Semiconductor device physics, digital logic fundamentals, static inverter analysis, static logic gate analysis, dynamic switching analysis, combinational logic design.

EEE 4330 Microelectronics Engineering (3) Prerequisite: EEL3300; EEL 3300L. Design and fabrication of solid-state devices. Topics include oxidation, diffusion, metallization, photolithography, and device characterization.

EEE 4351 Solid-State Electronic Devices (3) Prerequisites: EEL3300; EEL3300L. Solid-state physics as applied to electronic devices. Semiconductor materials, conduction processes in solids, device fabrication, diffusion processes, and negative conduction devices.

EEE 4363 Feedback Amplifier Principles (3) Prerequisite: EEL 3300. This course introduces basic concepts of multi-stage audio-frequency amplifiers, including feedback and stability principles and power supply criteria.

EEE 4376C Introduction to Analog Integrated Circuit Design (3) Prerequisite: EEL4301. Design and analysis of bipolar and MOS analog integrated circuits. Topics include operational amplifier design, analog multipliers, active loads, current sources, and active filters.

EEE 4377 Mixed Signal ICs (3) Prerequisite: EEL 4313 or EEL 4376C. This course introduces mixed signal processing using analog and digital integrated circuits. Topics include fundamentals of sampled data systems, nonlinear and dynamic analog circuits, Nyquist-rate data converters, over-sampling data converters, and digital filters, as well as the use of computer-aided-design programs.

EEL 4400 Optoelectronics and Optical Systems (3) Prerequisites: EEL 3300; EEL3473. Theory and applications of optical techniques in modern electronics and communications. Includes a study of optical fibers, sources, detectors, optical communication systems, integrated optics, holography, and principles of optical signal processing.

EEL 4415 Sonar (3) Prerequisites: EEL 3473; EEL 3512. This course introduces basic concepts of sonar systems including acoustic propagation, transducers and projectors, target strength, reverberation, beam-steering, beam-forming, beam-patterns, and synthetic aperture sonar.

EEL 4435L Electromagnetics Laboratory (1) Prerequisite: EEL3473. Applications of electromagnetic field theory. Experiments include field mapping, transmission lines, spectrum analysis, impedance matching, waveguides, antennas, radar, and fiber optics.

EEE 4450 Modeling and Simulation of Semiconductor Devices (3) Prereq.: EEE 3300. This course covers various numerical techniques for modeling and simulating of semiconductor devices, such as pn-junctions, metal-oxide semiconductor contacts,

metal oxide-semiconductor field effect transistors, and bipolar devices. Special emphasis is on the description and simulation of electron and hole transport in semiconductor devices.
EEL 4450 Optical Sensors (3) Prerequisites: EEL 3135; EEL 3472. This course examines the basic concepts of optical sensors and essential optics. Topics include intensity, phase, and frequency modulated optical fiber sensors and their applications, distributive sensing systems and optical fibers in signal processing.
EEL 4461 Antenna Systems (3) Prerequisite: EEL3473. Antenna theory, including Hertzian dipoles, thin linear antennas, aperture antennas, arrays, loop antennas, slots, horns, and waveguides.
EEL 4510 Digital Signal Processing (3) Prerequisite: EEL 3135. Sinusoids, periodic signals, and Fourier spectra. Sampling of continuous-time signals, aliasing. Impulse response of linear, discrete-time systems, convolution. FIR filters and implementation. Frequency response of FIR filters. Z-transforms. IIR filters, poles and zeros, frequency response. Realization of IIR filters. Discrete Fourier transform and the FFT algorithm. MATLAB exercises are assigned.
EEL 4515 Digital Communications Systems (3) Corequisite: EEL 4021. Sampling principle, spectral analysis of digital waveforms and noise, pulse and digital transmission systems, digital multiplexing, error probabilities, and system performance.
EEL 4540 Radar (3) Prerequisites: EEL 3512; EEL 3473. Basic concepts of radar systems including: radar range equation, radar cross section calculations, random processes and noise, array antennas, beam-steering, doppler and range processing, FM and CW systems, pulse compression, synthetic aperture radar, clutter.
EEL 4566 Optical Fiber Communications (3) Prerequisites: EEL 3473; EEL 3512. This course offers a review of the characteristics of basic optical components for optical communications systems. Topics include optical fibers, light sources, optical detectors and fiber connectors, signal degradation in optical fibers, optical analog and digital communication systems; and coherent optical fiber communications.
EEL 4595 Wireless Communications and Networking (3) Prerequisites: CGS 3408 or equivalent; EEL 3135; EEL 3512, EEL 4021. This course covers the fundamentals of wireless communications and systems. The core topics include radio-wave propagation characteristics of wireless channels; modulation and demodulation techniques for mobile radio; reception techniques for wireless systems; fundamentals of cellular communications; multiple access techniques; wireless networking; and hybrid networking of a wireless system and the Internet.
EEL 4596 Advanced Topics in Communications (3) Prerequisites: EEL 3512; EEL 4021. This course is designed to provide an in-depth knowledge of some of the advanced topics in communications, Topics covered include ideal communication systems,

signal to noise ratio (S/N) for amplitude and angle modulation, design of systems to improve S/N ratio, satellite communication, and mobile communication.
EEL 4635 Digital Control Systems (3) Prerequisite: EEL 4652. Discrete time systems; Z-transform; sampling and reconstruction; system time-response characteristics; stability analysis; digital controller design.
EEL 4652 Analysis and Design of Control Systems (3) Prerequisite: EEL3135. Continuous system modeling; stability of linear systems; frequency response methods; the root locus method; state-space methods.
EEL 4658 Instrumentation for Measurement and Control (3).
EEL 4905 ECE Tools Lab (1-3). Co-requisite: EEL 3111. Introduction to Matlab, Multisim and other engineering software, soldering, and instrumentation

Electrical and Computer Engineering Graduate Programs

Faculty

Chairman: Foo, Simon Y
Professors: Arora, Rajendra K.; DeBrunner, L.; DeBrunner, Victor E; Foo, Simon Y.; Li, Hui.; Meyer-Baese, Uwe.; Perry, Reginald J.; Roberts, Rodney G.; Weatherspoon, Mark H.; Zheng, Jim P.
Associate Professors: Andrei, Petru; Bernadin, Shonda; Edrington, Chris S.; Harvey, Bruce A.; Kwan, Bing W.; Tung, Leonard J.; Yu, Ming
Assistant Professors: Faruque, O.; Moss, P.
Associate in Electrical Engineering: Brooks, Geoffrey W.; Barnes, Jerome
Assistant in Electrical Engineering: Hughes, Clayton

Description

Electrical Engineering is concerned with the development and utilization of electrical and electronic technology for the benefit of society. It involves the design, development, and implementation of devices, circuits, and systems that are used in electrical power generation and distribution, machine control, communications, computers, and computer-based information processing. It is a very broad field that affects all aspects of modern society, particularly in this age of information processing, communications, and automation.

The Department of Electrical and Computer Engineering offers programs leading to the Master of Science (MS) degree, and the Doctor of Philosophy (PhD) degree in electrical engineering. The MS program is designed to provide advanced course work and experience in independent problem solving with a moderate degree of both breadth and specialization. The master's thesis and its defense provide for independent in-depth study of a current electrical engineering topic to demonstrate how professionals make major contributions to the electrical engineering field. The PhD program is intended to provide students with an independent mastery of a significant portion of the field of electrical engineering. The PhD program prepares students for a career in industry, research, and/or teaching. Successful candidates must demonstrate through original research a substantial contribution to their field of specialty.

Areas of specialization in these programs generally coincide with the research interests of the faculty as indicated in the faculty section of this Graduate Catalog. Current specialization areas include computer engineering, VLSI, computer security, electromagnetics, communications, digital signal processing and controls, power systems, robotics, and microelectronic engineering.

Facilities and Opportunities

The department maintains well-equipped teaching and research laboratories in its areas of interest. Included are computer security research laboratory, robotics and computer vision laboratory,

electromagnetics research laboratory, applied laser laboratory, high-performance computing and simulation research laboratory, opto-electronics and optical systems laboratory, information processing and transmission engineering research laboratory, wireless intercommunication laboratory, and sensor system research laboratory.

The department is an active contributor to the Florida Engineering Education Delivery System (FEEDS), which provides graduate education throughout the state of Florida using tutored videotape. A two-way television link between the College of Engineering and The Florida State University Panama City campus provides live, interactive instruction for students in the Panama City area and allows students in Tallahassee to benefit from faculty teaching on the Panama City campus.

Financial assistance often can be provided for graduate students through teaching, grading, or research assistantships and tuition fee waivers. Teaching assistantships involve assisting in the supervision of laboratory courses and related duties. Students awarded research assistantships participate in departmental or externally sponsored research projects under the guidance of a faculty member. Selection is competitive and is based upon potential for teaching (including language skills), Graduate Record Examinations (GRE) test scores, grade point averages (GPA), and recommendations. Application for departmental financial assistance should be made directly to the graduate coordinator in the Department of Electrical and Computer Engineering.

Master of Science

Requirements
The department offers thesis and non-thesis programs for the Master of Science (MS) degree. These programs include common core courses, major depth concentration, and breadth in electrical engineering.

Admission
To be considered for admission, candidates must have earned a bachelor of science degree (or equivalent) in electrical engineering or a closely related discipline from an ABET-accredited program, a grade point average (GPA) of at least 3.0 on a 4.0 scale for all work attempted beyond sixty (60) semester hours of undergraduate study, and a combined score on the verbal and quantitative portions of the GRE of at least 1000. International candidates must have earned a bachelor of science degree (or equivalent) in electrical engineering from a recognized non-U.S. academic institution, a grade point average (GPA) of at least 3.0 on a 4.0 scale for all

work beyond the equivalent of sixty (60) semester hours of undergraduate study (as evaluated by the admissions office), a combined score of at least 1000 on the verbal and quantitative portions of the GRE, and a minimum score of 550 on the Test of English as a Foreign Language (TOEFL) if English is not their native language.

Students with a bachelor's degree in a field other than electrical engineering may be required to complete a department-designated sequence of undergraduate courses with grades of "B" or better prior to attempting graduate electrical engineering work.

Thesis
All Master of Science thesis program students must complete a written thesis. Upon completion of the thesis, an oral defense is required, which consists of a public presentation of the student's work to the department and the student's supervisory committee. Students must register for EEL 8976 (0), Master's Thesis Defense, before the defense presentation.

Course Work and Thesis Requirements (Thesis Program)

All MS thesis degree students must complete a minimum of thirty (30) semester hours of course work to satisfy the Master of Science in electrical engineering (MSEE) degree requirements. Twelve (12) semester hours are required from the student's depth area, twelve (12) hours in supplemental electives and a minimum of six (6) semester hours are required for the thesis (EEL 6971r). A minimum of three (3) semester hours of supplemental electives must include a course in advanced mathematics, typically a 5000 level course, or a departmental approved substitute. The master's degree candidate may take up to six (6) semester hours of S/U credits with the approval of the faculty advisor and the ECE graduate coordinator. A master's degree candidate may also take one to two 4000-level courses for letter grade credits beyond those required for a baccalaureate degree with approval of the ECE graduate coordinator.

Students must select their major professor by the end of the first semester of course work and are required to submit a plan of study by the time they have completed twelve (12) semester hours of graduate studies. The plan of study must be approved by the ECE graduate coordinator and the student's major professor. The student's major professor will also assist the student in forming the student's supervisory committee.

All Master of Science (MS) thesis program students are required to register for EEL 8976 (0), Master's Thesis Defense, and at least one (1) semester hour of EEL-6971r, Master's Thesis, in the semester they plan to graduate.

Supervisory Committee
The Supervisory Committee for a master's degree thesis student consists of a minimum of three (3) members of graduate faculty who hold master's directive status. At least half of the committee members must be faculty members from the ECE Department.

Master's Thesis Defense Announcement
It is the student's responsibility to post the thesis defense

announcement within the department and the College of Engineering at least one week prior to the defense. The announcement should include: thesis title; student's name; student's department; major professor and committee members; date; time and location of the defense.

Course Work and Exam Requirements (Non-Thesis Program)
All students in the non-thesis MS degree program must submit a formal request to obtain an official approval from his/her advisor (if there is one) and the ECE graduate coordinator to be exempt from the thesis program requirement.

The non-thesis option requires a student to complete a minimum of thirty-three (33) credit hours of graded coursework beyond those required for the student's baccalaureate degree. A minimum of three (3) credit hours must be a course in advanced mathematics, typically a 5000-level course.

The non-thesis option student must register and successfully pass the required Master's Comprehensive Exam, EEL 8966. A non-thesis option student may attempt to take one Master's Comprehensive Exam in each calendar year. A maximum of three (3) attempts will be permitted.

Graduate Seminar Requirement
All M.S. candidates are required to enroll in the graduate seminar, EEL 6932r, for each semester that they are enrolled in the graduate program. The details of the seminar are given below under course descriptions.

Doctor of Philosophy

Requirements

Admission to the Program
A bachelor's or master's degree in electrical engineering or a closely related discipline from an ABET-accredited institution is required for admission to the PhD program; international students may have a master's degree from a recognized international institution. A GPA of 3.3/4.0 on all baccalaureate course work and any graduate work attempted and a GRE score of 1100 are also required. These are minimums and are normally surpassed by successful applicants. International students, in addition, must have demonstrated a minimum achievement of 550 on the TOEFL. Each successful applicant will be expected to have a faculty sponsor who will help the student to establish a plan of study.

Students with a bachelor's degree in a field other than electrical engineering may be required to complete a department-designated sequence of undergraduate courses with grades of "B" or better prior to attempting graduate electrical engineering work.

Diagnostic Examination
The student who has been admitted to work toward the doctoral degree will be required to take a departmentally administered diagnostic examination before the end of the second semester of postbaccalaureate study. It will be designed to appraise the student's ability to pursue the doctor of philosophy degree in the field and to facilitate counseling in the development of the student's program of studies.

Admission to Candidacy

The PhD program is logically divided into two parts: namely, requirements for a student to be formally admitted to candidacy for the degree and requirements for students to satisfactorily complete the degree program.

In order to formally become a candidate and pursue research for the PhD degree, students must have demonstrated that they have a sufficient academic foundation in electrical engineering, an understanding of the research process and enough knowledge about their chosen field of research to proceed with a reasonable assurance of success. If the student is successful in demonstrating these attributes, then he/she may be admitted to candidacy for the PhD degree and may begin formal research leading to the dissertation. The elements of this process are the following:

Doctoral Preliminary Examination
The Preliminary Examination is the final requirement for doctoral candidacy. This exam is taken over a five-week period. It must be successfully completed by the student's fourth semester (for the BS-to-PhD track), or third semester (for all the other tracks). The student is allowed to retake the exam only once.

In the semester the student intends to take the Preliminary Examination, he/she needs to register for the 0-credit hour EEL 8964 (Prelim Exam). This registration must be done only once.

In preparing for the Preliminary Examination, the student shall present to the committee an approximately 40-page research review report demonstrating an understanding of the theoretical framework in the area of research based on an in-depth literature review. In demonstrating an understanding of the literature, the student must include a discussion that identifies the knowledge gaps in their research area. Upon submission of the research review report, the committee will respond to the student with questions based on the literature review and research area. The following is a schedule of events for the successful completion of the Preliminary Examination:

•The student must make arrangements with the adviser to schedule a five-week time period for the examination. The examination committee should contain at least three faculties with GFS status from the ECE Department.

•With the consultation of the adviser, the student will submit a research review report to the examination committee.. The topic of the report should be determined by the major adviser of the student. The student is encouraged to submit the research review report by the middle of the semester for which he/her registered for the Preliminary Examination. The student should abide by the IEEE plagiarism policy.

•The committee will submit written questions to the adviser for collection by the student two weeks after submission of the research review report. These questions will relate to the research review report.

•The student will have two weeks to develop written responses to the questions in preparation of the oral exam. These responses will be submitted to the adviser, who will then distribute the responses to the committee members. The student should submit a complete set of answers to each committee member; the answers should be given as separate appendices to the original (or revised) research review report.

•The oral examination will be held within one week of submission of the written responses. This examination will be primarily related to the research area and the student's written responses.

Appropriate related fundamental concepts may also be covered. During the final oral presentation the student should give a short summary of the research report and address the questions of the committee on separate slides.

•Pass/fail is determined on the combined written and oral responses to committee questions. A majority of committee votes and a pass vote by the committee chair is required to pass.

•After the examination is completed the Preliminary Examination Report Form should be filled and submitted to the ECE Graduate Coordinator. A student who passes the examination will be recognized as a candidate for the PhD Degree.

Prospectus Examination
After passing the PhD Preliminary Examination, the student should pass the Prospectus Examination. This examination is usually passed by the end of the 3rd year and needs to take place at least 8 months before the graduation date. The student must submit a Prospectus Examination Application/Approval Form to the ECE Graduate Committee. The student's advisory committee administers this exam, which may be in the form or a written or a combination of written and oral examination. The content and scope of the exam are at the discretion of the committee. The Prospectus Examination represents the defense of the Dissertation Proposal.

Dissertation Defense Announcement
It is the student's responsibility to post the dissertation defense announcement within the department and the College of Engineering at least 2 weeks prior to the defense. The announcement should include: dissertation title; student's name; student's department; major professor and committee members; date; time and location of the defense. Academic courtesy requires that the dissertation be submitted to each member of the supervisory committee at least 4 weeks before the date of the oral examination.

Dissertation
The dissertation must be an achievement in original research constituting a significant contribution to knowledge and must represent a substantial scholarly effort by the student. Upon the student's completion of the dissertation, an oral defense is required, which consists of a public presentation of the work to the department and the supervisory committee. Students must register for EEL 8985r (0), Dissertation Defense, before the defense presentation. If the defense is satisfactory, the committee may then recommend award of the degree. Publication of the complete dissertation is required. This may be done in scholarly journals or via University Microfilms.

Course Work Requirements
There are no specific courses required for the program. Each student's courses are defined by the plan of study, which is approved by the supervisory committee. The general requirements are as follows:

A doctoral degree candidate in electrical engineering must complete a total of seventy-two (72) semester hours of course work beyond those applied to the satisfaction of a bachelor degree:

1.Completion of a minimum of thirty-six (36) semester hours beyond those applied to the satisfaction of the bachelor degree. A minimum of thirty (30) semester hours must be completed on a letter grade basis; up to six (6) semester hours can be completed on a S/U basis for a total of thirty-six (36) semester hours (minimum). All course work completed to satisfy Ph.D. degree course work requirements must be 5000 level or above. These must include six (6) semester hours in advanced mathematics or advanced courses (5000 level or above) in an area outside of electrical and computer engineering beyond those semester hours applied towards any other degrees;

2.Completion of three (3) semester hours of course work in EEL 5910r, Supervised Research, to demonstrate the ability to perform independent research prior to registration for dissertation research credits. This requirement may be waived at the recommendation of the major professor if the student has completed a master's degree with a thesis option, and the major professor agrees that this satisfies the objective;

3.Completion of thirty-three (33) semester hours (minimum) of dissertation research, EEL 6980r.

Graduate Seminar Requirement
All full-time Ph.D. candidates are required to enroll in the graduate seminar, EEL 6932r, for each semester that they are enrolled in the graduate program. The details of the seminar are given below under "Graduate Course Descriptions."

Supervisory Committee
The supervisory committee will consist of a minimum of three (3) members of the graduate faculty who have doctoral directive status, one of which is a representative-at –large of the graduate faculty drawn from outside the student's department. Additional members may be appointed if deemed desirable. The committee should consist of at least one (1) major advisor and/or a co-major advisor from the ECE graduate faculty. At least half of the committee members must be faculty members from the ECE Department.

Journal Paper Submission Requirement
All Ph.D. students are required to publish or submit and have under review at least one refereed journal article to a journal in their field of interest before their graduation will be approved.

Dissertation Defense Announcement

It is the student's responsibility to post the dissertation defense announcement within the department and the College of Engineering at least one week prior to the defense. The announcement should include: thesis title; student's name; student's department; major professor and committee members; date; time and location of the defense.

Note: The graduate program in electrical engineering continues to evolve. Candidates are urged to contact the department to obtain the latest information regarding requirements and courses.

Graduate Course Descriptions

EEE 5315 Digital Integrated Circuit Design (3) Prereq: EEL 4301. Design of digital integrated circuits, applications, solid state device switching characteristics, memory, computer-aided-design and layout.

EEE 5317 Power Electronics (3) Prereq: EEL 3135; EEL 3300. The purpose of this course is to develop a basic understanding of using switched electronic circuits for the conversion and regulation of electric power. The course will focus on the basic converters and their steady state analysis. Dynamic modeling analysis, controller design, power semiconductor device, and simulation are also covered.

EEE 5333 Solid State Sensors (3) Prereq: EEL 3300. Topics in this course include fabrication, characterization, operational principles, and applications of solid state sensors including acoustic, mechanical, magnetic, radiation, thermal, chemical, and biologic sensors.

EEE 5378 Mixed Signal ICs (3) Prereq: EEL 5315. Introduction to mixed signal processing using analog and digital integrated circuits. Topics include fundamentals of sampled data system, nonlinear and dynamic analog circuits, Nyquist-rate data converters, over-sampling data converters, and digital filters. Includes use of computer-aided-design programs.

EEE 6353 Semiconductor Device Theory (3) Prereq.: EEL 3300 or equivalent. Topics in this course include elementary quantum physics, energy band theory, carrier properties, theory of p-n junctions, optoelectronics diodes, bipolar junction transistors, and field effect transistors.

EEL 5173 Signal and System Analysis (3)). Prereq: EEL 3135 or EEL 4652. Continuous and discrete dynamic models with an emphasis on state variable models; Laplace transform, z-transform, and the time domain solutions. Includes real-time digital simulation and sampling theory.

EEL 5250 Power System Analysis (3) Prereq: EEL 3216. Study of power system planning and operational problems. Subjects covered are load flow, economic dispatch, fault studies, transient stability, and control of problems. System modeling and computer solutions are emphasized through class projects.

EEL 5270 Power Systems Transients (3) Prereq: EEL 4213. Electrical transients in power systems; study of time domain, frequency domain and traveling wave techniques for transient analysis; study of switching transients associated with loads, capacitors, faults, line reclosing and single-pole switching; study of interaction between lighting and power systems; introduction to insulation coordination.

EEL 5416 Sonar (3) Prereq: EEL 3473; EEL 3512. Basic concepts of sonar system including: acoustic propagation, transducers and projectors, target strength, reverberation, beamsteering, beamforming, beampatterns, synthetic aperture sonar.

EEL 5443 Electromagnetics and Optics (3) Prereq: EEL 3473. This course will cover a number of topics, including electromagnetic wave theory-Maxwell's equations, planes waves, energy and power flow; geometrical optics; applications to optical systems, optical fibers, and resonators; wave propagation in layered media; applications to lasers and integrated optics; quantum theory of lights; black body radiation; introductory quantum electronics; and other selected research topics.

EEL 5454 Optical Sensors (3) Prereq: EEL 3512, 3473 or equivalent. This course examines the basic concepts of optical sensors and essential optics. Topics include intensity, phase, and frequency modulated optical fiber sensors and their applications; distributive sensing systems; and optical fibers in signal processing.

EEL 5465 Antenna Theory (3) Prereq: EEL 3473 or 4461. Electromagnetic fields, radiation from simple sources and apertures; receiving antennas; arrays-uniformly spaced, non-uniform, pattern synthesis; cylindrical antennas and arrays; radiation from conical and spheroidal structures; slot antennas; open waveguides and small horns.

EEL 5486 Advanced Electromagnetic Theory (3) Prereq: EEL 3473. Advanced concepts and theorems in electromagnetic fields; plane, cylindrical, and spherical wave functions; perturbation and variational techniques; microwave networks.

EEL 5500 Digital Communication Theory (3)). Prereq: EEL 4514. Principles of modern digital communication systems, including pulse-code modulation, error-control coding, optimal signal protection, and information theory.

EEL 5542 Random Processes (3) Prereq: EEL 4021, 3135. Random processes, analysis and processing of random signals; modeling of engineering systems by random processes; selected applications in detection; filtering; reliability analysis; and system performance modeling.

EEL 5547 Radar (3) Prereq: EEL 3473; EEL 3512. Basic concepts of radar systems including: radar cross section calculations, random processes and noise, array antennas, beamsteering, doppler and range processing, FM and CW systems, pulse compression, synthetic aperture radar, clutter.

EEL 5563 Optical Fiber Communications (3) Prereq: EEL 3512; EEL 3473. Review of the characteristics of basic optical components for optical communications systems, e.g., optical fibers, light sources, optical detector and fiber connectors; signal degradation in optical fibers; optical analog and digital communication systems; coherent optical fiber communications.

EEL 5590 Advanced Topics in Communications (3) Prerequisites by Topics and EEL 3512; EEL 4021: Fourier transform analysis of signals; amplitude modulation; fundamentals of phase and frequency modulation and a probability theory course. This course is designed to provide an in-depth knowledge of some of the advanced topics in communications. Topics covered include ideal communication systems; signal to noise ratio (S/N) for amplitude and angle modulation; design of systems to improve S/N ratio; satellite and mobile communication.

EEL 5591 Wireless Communications (3) Prereq: EEL 3512; EEL 3473; EEL 4021; "C" Programming or equivalent. This course covers the fundamentals of wireless communications and systems. The core topics include radio-wave propagation characteristics of wireless channels; modulation and demodulation techniques for mobile radio; reception techniques for wireless systems; fundamentals of cellular communications; multiple access techniques; wireless networking; and hybrid networking of a wireless system and the Internet.

EEL 5617 Multivariable Control (3) Prereq: EEL 4652. Course covers H2 and H∞ control design for linear systems with multiple inputs and multiple outputs. Globally optical techniques, fixed-structure (e.g., reduced-order) techniques. Includes introductory concepts in robust control.

EEL 5630 Digital Control Systems (3) Prereq: EEL 4652 Discrete system modeling, frequency-domain and z-plane root-locus design techniques, system compensation with an emphasis on utilizing computer applications packages.

EEL 5667 Robot Kinematics and Dynamics (3) Prereq: EEL 4652. Introduction to robot kinematics and dynamics, including forward

kinematics, inverse kinematics, and differential kinematics. Also covers rigid motion and homogenous transformations, velocity and force/torque relations and resolved motion rate control; serial, parallel and kinematically redundant manipulators.

EEL 5707 ASIC Systems Design I (3) Prereq : EEL 3705. Introduction to Application Specific Integrated Circuit (ASIC) families. Overview of programmable ASICs. Introductions to the VHDL design entry and simulation language. Programmable ASIC design methodology will be introduced.

EEL 5764 Computer System Architecture (3) Prereq: EEL 3705, EEL 4746. Comprehensive study of computer organization, Von Neumann computer architecture, and the principles of RISC computer architecture and its future outlook.

EEL 5784 Computer Network Design and Analysis (3) Prerequisites: Graduate standing or permission of instructor. This is a first course in the fundamentals of computer network design and analysis. The course presents network architecture using a layered approach. Analysis and examples of network protocols and standards and techniques for evaluating network performance and selecting appropriate network protocols are covered.

EEL 5812 Advanced Neural Networks (3) Prereq: EEL 4810. This course is designed to provide students with an in-depth knowledge of advanced topics in Neural Networks such as: universal approximation networks, transformation-based neural networks, information theoretic models, foundations of neurodynamics.

EEL 5905r Directed Individual Study (1-3) Prereq: Graduate standing. May be repeated to a maximum of six (6) semester hours. EEL 5910r Supervised Research (1-5) (S/U grade only.) Prerequisite: Graduate standing. Requires departmental approval. Cannot be used as credit toward degree. May be repeated to a maximum of five (5) semester hours for master's degree candidates and five (5) semester hours for doctoral degree candidates.

EEL 5930r Special Topics in Electrical Engineering (3) Special topics in electrical engineering at the graduate level with emphasis on recent research and developments. Content, credit and prerequisites vary; consult instructor. May be repeated to a maximum of twelve (12) semester hours.

EEL 5940r Supervised Teaching (1-5) (S/U grade only.) Prerequisite: Graduate standing. Requires departmental approval and cannot be used as credit toward degree. May be repeated to a maximum of five (5) semester hours for master's degree candidates and five (5) semester hours for doctoral degree candidates.

EEL 6266 Power Systems Operation and Control (3) Prereq: EEL 5250. A course dealing with modern power system operational and control problems and solution techniques, including state estimation, contingency analysis, load-frequency control, and automatic generation control. Additional subjects covered are load-flow analysis, unit commitment, and external equivalents for steady-state operations.

EEL 6338r Advanced Topics in Microelectronics (3) Typical offerings include: microelectronics engineering; analog integrated circuit design; semiconductor device theory; ASIC design. May be repeated to a maximum of twelve (12) semester hours.

EEL 6457r Advanced Topics in Optoelectronic Systems (3) Typical offerings include: waves and fields in electro-optics; modern optics and coherence; optical data processing; nonlinear optics; laser technology; electro-optical circuits and systems for signal processing; electro-optical devices. May be repeated to a maximum of twelve (12) semester hours.

EEL 6492r Advanced Topics in Microwave and Antennas (3) Typical offerings include: numerical methods in electromagnetics; propagation of electromagnetic signals; advanced electromagnetic theory II; advanced antenna theory; microwave and millimeter-wave circuits. May be repeated to a maximum of twelve (12) semester hours.

EEL 6502 Digital Signal Processing I (3) Prerequisite: EEL 5173. Fundamentals of digital signal processing and design of a variety of digital processors and filters. Introductions to DFT-FFT, and spectral estimation theory and practice.

EEL 6558r Advanced Topics in Digital Signal Processing (3) Typical offerings include: advanced digital signal processing; fast DSP algorithms; image processing; data compression; computer vision; pattern recognition; VLSI based DSP design; advanced signal and systems theory. May be repeated to a maximum of twelve (12) semester hours.

EEL 6590r Advanced Topics in Communication Systems (3) Typical offerings include: information theory; coding theory; array processing; spread spectrum techniques; digital coding of analog signals; statistical communication theory; principles of radar systems; optical fiber communications; satellite communications systems. May be repeated to a maximum of twelve (12) semester hours.

EEL 6619 Robust Control (3) Prerequisite: EEL 5617. Course covers control design for systems with uncertain dynamics; robust H∞ design; structured singular value synthesis; LMI and Riccati equation solution techniques.

EEL 6680r Advanced Topics in Control System (3) Typical offerings include: multivariable control systems; nonlinear control systems; optimal control; numerical search methods; identification and parameter estimation; stochastic control systems; adaptive control systems; advanced digital control systems; stability theory; robotic control. May be repeated to a maximum of twelve (12) semester hours.

EEL 6708 ASIC Systems Design II (3) Prerequisite: EEL 5707. Course covers MOS transistor theory, CMOS logic gate design, ASIC standard cell library design, ASIC partitioning, floorplanning and placement. Introduction to routing algorithms and test methods.

EEL 6799r Advanced Topics in Computer Engineering (3) Typical offerings include: digital systems design; advanced computer architecture; local area networks; telecommunication networks; data and computer communications; queuing systems; artificial intelligence; expert systems; distributed computer systems; artificial neural networks; automata theory. May be repeated to a maximum of twelve (12) semester hours.

EEL 6905r Directed Individual Study (1-3) Prereq: Graduate standing. May be repeated to a maximum of six (6) semester hours.

EEL 6930r Special Graduate Topics in Electrical Engineering (3) Special topics in electrical engineering at the graduate level with emphasis on recent research and developments. Content, credit, and prerequisites vary-consult the instructor. May be repeated to a maximum of twelve (12) semester hours.

EEL 6932r Electrical and Computer Engineering Seminar (0) (S/U grade only) Presentations by faculty, students and visiting scholars. All full-time graduate students must enroll each term. May be repeated to a maximum of ten (10) times.

EEL 6971r Master's Thesis (1-6) (S/U grade only) Prereq: Graduate standing, instructor permission. A minimum of six (6) semester hours of credit is required. Department approval

required.
EEL 6980r Dissertation (1-12) (S/U grade only) Prereq: May be repeated to a maximum of forty-eight (48) semester hours.
EEL 8964r Preliminary Doctoral Examination (0) (S/U grade only) May be repeated once.
EEL 8966r Master's Comprehensive Examination (0) (S/U grade only) May be repeated twice.
EEL 8976 Master's Thesis Defense (0) (S/U grade only)
EEL 8985r Dissertation Defense (0) (S/U grade only) May be repeated twice.

Department of Industrial and Manufacturing Engineering

The mission of the Department of Industrial and Manufacturing Engineering is to provide for students a solid industrial engineering curriculum coupled with a strong research program driven by the economic and technologic development needs of society.

The Industrial engineering degree provides a broad technical background with special emphasis on manufacturing systems, computer modeling, costs, quality, management, and human factors. Industrial engineering draws upon specialized knowledge and skills in the mathematical, physical, and social sciences, together with the principles and methods of engineering design and analysis, to specify, predict, and evaluate industrial systems.

The program of study includes engineering analysis for the optimization of industrial systems, design of human-machine systems, and the scientific management of activities. Specialized training is available in the use of modern engineering tools and techniques such as computer-aided design (CAD), computer integrated manufacturing (CIM), and ergonomic (human factors) engineering.

Industrial engineers (IEs) pursue careers in manufacturing, service industries and government. Many IEs are being employed in nontraditional fields such as hospitals, banks, insurance and information processing. The present and future demand for IEs appears to be very high. IEs are increasingly being called upon to act as productivity catalysts in manufacturing and service organizations to meet regional, national, and international demand and competition.

Faculty Teaching and Research Interest

Okenwa I. Okoli, Ph.D., Professor and Chairman, University of Warwick, Composites Manufacturing, Structural Health Monitoring, Toughened Ceramics.

Samuel A. Awoniyi, Ph.D., Professor, Cornell University, Applied Optimization.

Robert Braswell, Ph.D., Oklahoma State University, Emeritus Professor.

Tarik Dickens, Ph.D., Assistant Professor, Florida State University, Design for Advanced Composites, Additive Manufacturing, Manufacturing & Composite Automation, Mechanical Testing & Intrinsic NDE Monitoring, Failure & Life-cycle analysis, Siemens PLM.

Richard Liang, Ph.D., Professor, Beijing University of Aeronautics and Astronautics, Composite Materials, Polymers and Nanomaterials, Materials Microstructure/Property Characterization and Modeling, Advanced Manufacturing.

Tao Liu, Ph.D., Associate Professor, Georgia Institute of Technology, Carbon Nanotube-Based Functional Materials, Processing-Structure-Property Relationship of Polymer and Polymer Nanocomposites, Non-Destructive Optical Characterization Techniques.

Chiwoo Park, Ph.D., Assistant Professor, Texas A&M University, Engineering Statistics, Data Mining and Quality Engineering.

Abhishek Shrivastava, Ph.D., Assistant Professor, Texas A&M University,Statistical Modeling and Data Analytics for Complex Systems, Nanoinformatics, Distributed Sensor Networks.

Arda Vanli, Ph.D., Associate Professor, Pennsylvania State University, Quality Engineering, Statistics, Time Series Analysis.

Hui Wang, Ph.D., Assistant Professor, University of South Florida, Data Fusion Enabled Manufacturing Process/System Design, Monitoring, Diagnosis, and Control, Cyber-Physical Systems for Design and Manufacturing, Micro-Informatics and Micro-Level Quality Control Methodology.

Zhibin Yu, Ph.D., Assistant Professor, University of California Los Angeles, Semiconductor thin film growth, Electronic devices for energy harvesting and energy efficiency, Wearable electronics and sensors, Micro actuators.

Changchun Zeng, Ph.D., Associate Professor, Ohio State University, Polymeric Materials, Composite Materials, Nanomaterials.

Mei Zhang, Ph.D., Associate Professor, Osaka Prefecture University, Nanomaterials Processing and Applications.

Program Educational Objectives

The Bachelor of Science in Industrial Engineering (BSIE)

curriculum is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-0412, (410) 347-7700. The Bachelor of Science in Industrial Engineering curriculum is designed to comply with the ABET criteria for accrediting engineering programs. The educational objectives are that within the first few years following their graduation, graduates should have:
•Been employed in industrial, service or governmental organizations applying the industrial engineering skills in developing, designing, analyzing, implementing or improving integrated systems that include people, materials, information, equipment and energy;

•Completed or enrolled in a graduate program;

•Participated in a multicultural and diverse workplace; and
•Utilized teamwork, communication and engineering management skills

To achieve these objectives, all industrial engineering students must demonstrate or exhibit specific program outcomes. Students are instructed to contact their academic advisor or visit the departmental website at www.ie.eng.fsu.edu to obtain the current list of industrial engineering program educational objectives and program outcomes.

State of Florida Common Program Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program. Students are strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

At the time this document was published, some common program prerequisites were undergoing revision. Please visit https://www.flvc.org/student-services/college-transfer-center/common-prerequisite-manual for a current list of state-approved prerequisites.

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283
4. MAP X302 or MAC X305
5. CHM X045/X045L or CHMX045C or CHS X440
6. PHY X048/X048L or PHYX048C or PHYX043/X048L
7. PHY X049/X049L or PHYX049C or PHYX044/X049L

Common Program Prerequisites can also be found at http://www.facts.org

Curriculum

For All Majors at Florida A&M University Who Start With

Calculus (MAC 2311)

Freshman Year	**Sem. Hrs.**
Fall Semester	
EGN 1004L First Year Engineering Lab	1
*MAC 2311 Calculus I (Prereq. MAC 1147 or Placement Exam)	4
*CHM 1045 General Chemistry I (Prereq. CHM 1015 or Placement Exam)	3
*CHM 1045L General Chemistry Laboratory I	1
ENC 1101 Freshman Communicative Skills I	3
AMH 2091 Introduction to African-American History or AFA 3104 African-American Experience	3
Total	**15**

Second Semester

*MAC 2312 Calculus II (Prereq. MAC 2311)	4
ENC 1102 Freshman Communicative Skills II	3
Social Science/History Elective	3
*PHY 2048C General Physics I (Prereq. MAC 2311) w/Lab	5
	15

Summer

Humanities Elective	3
Social Science Elective	3
Humanities Elective	3
Total	**9**

Sophomore Year	**Sem. Hrs.**
First Semester	
*MAC 2313 Calculus III (Prereq. MAC 2312)	5
*PHY 2049C General Physics II w/Lab (Prereq. PHY 2048)	5
EGN 2123 Computer Graphics for Engineers Co-req .MAC 2311)	2
Humanities/Social Science Elective	3
Total	**15**

Second Semester

*MAS 3105 Linear Algebra	3
EML 3100 Thermodynamics (Prereq. CHM 1045, PHY 2048 MAC 2311)	2
EGN 3613 Principles of Engineering Economy (Prereq. MAC 2313)	3
EEL 3003 Introduction to Electrical Engineering (Prereq. MAC 2312, PHY 2049)	3
EEL 3003L Introduction to E.E. Laboratory (Co-req. EEL 3003)	1
COP 3014 Fundamentals of Programming	3
Total	**14**

Junior Year	**Sem. Hrs.**
First Semester	
EIN 3010 Industrial and Manufacturing Engineering Tools (Prereq. In the major)	3
EIN 3391 Introduction to Engineering Management (Prereq. EGN 3613, EGN 2123)	3
EIN 3390C Engineering Materials and Manufacturing Processes I Engineering w/ Lab (Prereq. CHM 1045, Coreq: EGN 2123)	3
EGN 3443 Statistical Topics in IE (Prereq. MAC 2312)	3
ESI 3312 Operations Research I (Prereq. MAP 3305)	3
Total	**15**
Second Semester	
ESI 4313 Operations Research II (Prereq. EGN 3443, MAP 3305)	3
EIN 4333 Design of Integrated Production Systems and Facilities Layout (Prereq. EGN 3613, ESI 3312, EGN 2123)	3
MAP 2302 Differential Equations	3
EIN 4934C Engineering Materials and Manufacturing Processes II (Prereq. EIN 3390C)	3
EGM 3512 Engineering Mechanics (Prereq. PHY2048C, MAC 2312; Co-req. MAC 2313)	4
Total	**16**

Senior Year	Sem. Hrs.
First Semester	
EIN 4243 Human Factors, Work Measurement & Methods Engineering (Prereq. EGM 3512, EGN 3443, EIN 3390C)	3
EIN 4395 Manufacturing Systems Engineering (Prereq EIN 4312)	3
ESI 4234 Quality Control & Reliability (Prereq. EGN 3443)	3
EIN 3118 Computing Topics in IE (Prereq. COP 3014)	3
EIN 4890 Senior Design I	3
Total	**15**
Second Semester	
Second Semester	
ESI 4523 Simulation of IE Systems (Prereq. ESI 4234)	3
EIN 4892 IE Senior Project II (Final Semester)	3
EIN 4XXX Industrial and Manufacturing Engineering Practicum (Prereq. EIN 4395)	2
Advanced IE Department Elective	3
Technical Elective	3
Total	**14**

*This is a State Common Prerequisite. Substitutes indicated in the State Common Prerequisite Manual at www.facts.org will be accepted.

Definition of Prefixes

EGN-Engineering
EIN-Engineering Industrial
ESI-Engineering Industrial (Systems)

IE majors are required to consult with their IE academic advisor before enrolling for the next academic term. Students must obtain current industrial engineering requirements and course offering schedules from the IE Department or from the College of Engineering Student Services Office.

Grade Requirements:

In addition to University and college requirements regarding grades and grade point average (GPA), the Department of Industrial and Manufacturing Engineering requires that the IE major achieve a grade within the "C" range or higher for all required

IE courses. In accordance with College of Engineering policy, a student may request that one course completed with a grade of "D+", "D", or "D–" be counted toward the BSIE degree. Recommendation by the IME undergraduate adviser(s) and approval by the department chairperson and the associate dean are required for the course to be counted toward graduation credit.

Course Descriptions

EGN 1004L. First Year Engineering Laboratory (1). This laboratory includes an emphasis on student time management, a variety of products and processes, and computer-aided problem solving. Product/process involves sketching and drawing pertinent diagrams by hand, and learning the history and engineering concepts involved.

EGN 2123 Computer Graphics for Engineers (2) Co-req. MAC 2311. Course covers principles of engineering graphics: visualization, spreadsheet applications, graphical calculus, and descriptive geometry. Also introduces the engineering design process and CAD systems.

EGN 3613 Principles of Engineering Economy (2) Prereq: MAC 2313. An emphasis on discrete cash flow diagrams, cash flow equivalence factors, standard criteria for comparing project proposals, special cash flow topics, special analysis and case studies.

EIN 3391 Introduction to Engineering Management (3) Prereq: EGN 3613, EGN 2123. Evolution, history, emergence, and ethics of engineering and industrial engineering. Emphasis on the management of technology and of the engineering method for product conceptualization, design, development and production. Fundamental sciences, engineering methods, information systems, economics, and behavior theory contained in engineering management principles and practices. Case studies.

EIN 3010. Industrial and Manufacturing Engineering Tools (3). Prerequisite: In the major. This course will mainly teach, from an engineering viewpoint, fundamental topics that are important for the practicing industrial engineer, including technical writing, oral communication and presentation of technical topics, managerial and cost accounting for production organizations and databases and management information systems.

EIN 3390C. Engineering Materials and Manufacturing Processes I (3). Prerequisite: CHM 1045. Corequisite: EGN 2123. This course is an introduction to industrial materials and their composition, properties, metallography, and heat treatment. Introduction to the manufacturing processes of machine industries including hot working, cold working, and metal removal. Laboratory experiences.

EIN 3905 Directed Independent Study (3) Prerequisite: Permission of department chairperson. Topics vary and each case must be approved by the department chairperson. May be repeated to a maximum of six (6) semester hours.

EIN 3949r Cooperative Work Experience (0) (S/U grade only.) May be repeated six times.

EIN 4214 Occupational Safety and Hazard Control (3) Prereq: EIN 4343. The history of safety, safety in the workplace, government regulations and methods of accident prevention.

EIN 4243 Human Factors, Work Measurement and Methods Engineering (3) Prereq: EGM 3512, EIN 3390C, EGN 3443. Human characteristics and limitations in relation to physical work, mental work, and job design. Human physiological variables in

relation to industrial work environment and product design. Case studies and design exercises.

EIN 4394C. Engineering Materials and Manufacturing Processes II (3). Prerequisite: EIN 3390C. This course is an introduction to engineering materials used in industry from the perspectives of composition, microstructures, properties, and heat treatment, various traditional and non-traditional manufacturing processes, basic mathematical descriptions for selected processes, and the application of these concepts to process selection and planning.

EIN 4333 Design of Integrated Production Systems and Facilities Layout (3) Prereq: EGN 3613, EGN 2123, ESI 3312. Basic functions: demand forecasting, process planning, master scheduling, materials requirement planning, machine and work stations scheduling, expediting, and quality control. Inventory control, formation of systems from those basic functions. Design exercises

with computer implementation.

EIN 4891 Industrial Engineering Senior Design Project I (3) Prereq: Senior Status. Only offered during the fall semester. Students are expected to begin a large-scale design project involving the full implementation of the IPPED process. Project includes a written report and requires the use of various design techniques and methods. Project is completed in EIN 4892 Industrial Engineering Senior Design Project II.

EIN 4892 Industrial Engineering Senior Design Project II (3) Prereq: EIN4891. Only offered during the spring semester. Continuation of EIN-4891 Industrial Engineering Senior Design Project I. Students are expected to complete a large-scale design project involving the full implementation of the IPPED process. Project includes a written report and requires the use of various design techniques and methods.

EIN 4611 Industrial Automation and Robotics (3) Prereq: EIN 3390C. Introduces and familiarizes students with the basic automation problems and the technologies used in automated production and robotic systems. Various components and systems and their applications to industrial automation will be discussed. Course will be supplemented by labs that will help students apply and evaluate the concepts studied in the classroom.

EIN 4936 Selected Topics in IE (3) Prereq: IE Senior status or by consent of instructor. Topics will be determined by a department "Committee On Special Topics," taking into consideration the needs of students who are about to graduate.

EGN 3443 Statistical Topics in Industrial Engineering (3) Prereq: MAC 2312. Basic statistical analysis, samples and populations, variability, hypothesis formulation, and data analysis. Use of computer software and interpretation of results.

ESI 3312 Operations Research I: Deterministic (3) Prereq: MAP 3305. The following topics will be treated with emphasis on validation of algorithms and derivation of heuristics; linear programming, assignment problems, CPM, network flows, discrete optimization, branch and bound solution method, and dynamic programming. Design exercises.

ESI 4234 Quality Control and Reliability Engineering (3) Prereq: EGN 3443. Introduction to quality and reliability engineering. Statistical quality control techniques, process capability analysis, and design and analysis of experiments for quality and reliability improvement.

ESI 4313C Operations Research II: Nondeterministic (3) Pre

requisites: EGN 3443; MAP 3305. Development and application of nondeterministic, analytic models including PERT, discrete and continuous time Markov chains, queuing models including queuing networks, inventory models, and decision analysis. Case studies and design exercises.

ESI 4523 Simulation of Industrial Engineering Systems (3) Prereq: ESI 4234. Simulation modeling and computer solution of Industrial Engineering Systems. Modeling strategies, probability considerations, simulation language, simulation verification and engineering case studies.

EIN 3118 Computing Topics in Industrial Engineering (3) Prereq: COP 2221. State of the art computing techniques for industrial engineers. Applications of structured programming, mathematical analysis software and engineering databases. Use in engineering of GUI languages and Internet communication.

EIN 4312 Tool and Process Engineering (3) Prereq: EIN 3390C. Basic design techniques of various manufacturing tools, including cutting tools, inspection tools, jigs and fixtures. Fundamental planning techniques of manufacturing processes. Design exercises and project.

EIN 4395 Manufacturing Systems Engineering (3) Prereq: EIN 4312. Introduction to modern manufacturing systems with special focus on the integration of manufacturing resources through the use of computers. Design, planning, analysis, and control of computer integrated manufacturing systems. Design exercises and project.

Industrial Engineering Graduate Programs

Description

Industrial Engineering is a broad discipline that encompasses education and basic/applied research concerning the design, improvement and installation of integrated systems of people, material, information, equipment and energy. Graduate studies in the Department of Industrial Engineering are broadly organized into the following two areas: manufacturing engineering and industrial systems. Current research interests include integrated product/process design, artificial intelligence in engineering, precision machining and metrology, intelligent processing of composite materials, predictive maintenance, manufacturing system analysis, rapid prototyping, set-covering theory, and quality control and management.

The Department of Industrial and Manufacturing Engineering offers two graduate degree programs: Master of Science (MS) and Doctor of Philosophy (PhD). Industrial Engineering is a broad discipline that encompasses education and basic/applied research concerning the design, improvement, and installation of integrated systems of people, material, information, equipment and energy. Graduate instruction and research are broadly grouped into three categories: manufacturing engineering, quality engineering, and industrial systems.

Current research interests include integrated products, manufacturing processes, and systems design; CAD/CAM; robotics; artificial intelligence in engineering; precision machining and metrology; rapid prototyping; composite material processing; quality control;

quality engineering; manufacturing systems analysis; set-covering theory; simulation environments; supply chain management; and engineering management.

Faculty Teaching and Research Interest

Okenwa I. Okoli, Ph.D., Professor and Chairman, University of Warwick, Composites Manufacturing, Structural Health Monitoring, Toughened Ceramics.

Samuel A. Awoniyi, Ph.D., Professor, Cornell University, Applied Optimization.

Robert Braswell, Ph.D., Oklahoma State University, Emeritus Professor.

Tarik Dickens, Ph.D., Assistant Professor, Florida State Univer-

sity, Design for Advanced Composites, Additive Manufacturing, Manufacturing & Composite Automation, Mechanical Testing & Intrinsic NDE Monitoring, Failure & Life-cycle analysis, Siemens PLM.

Richard Liang, Ph.D., Professor, Beijing University of Aeronautics and Astronautics, Composite Materials, Polymers and Nanomaterials, Materials Microstructure/Property Characterization and Modeling, Advanced Manufacturing.

Tao Liu, Ph.D., Associate Professor, Georgia Institute of Technology, Carbon Nanotube-Based Functional Materials, Processing-Structure-Property Relationship of Polymer and Polymer Nanocomposites, Non-Destructive Optical Characterization Techniques.

Chiwoo Park, Ph.D., Assistant Professor, Texas A&M University, Engineering Statistics, Data Mining and Quality Engineering.

Abhishek Shrivastava, Ph.D., Assistant Professor, Texas A&M University,Statistical Modeling and Data Analytics for Complex Systems, Nanoinformatics, Distributed Sensor Networks.

Arda Vanli, Ph.D., Associate Professor, Pennsylvania State University, Quality Engineering, Statistics, Time Series Analysis.

Hui Wang, Ph.D., Assistant Professor, University of South Florida, Data Fusion Enabled Manufacturing Process/System Design, Monitoring, Diagnosis, and Control, Cyber-Physical Systems for Design and Manufacturing, Micro-Informatics and Micro-Level Quality Control Methodology.

Zhibin Yu, Ph.D., Assistant Professor, University of California Los Angeles, Semiconductor thin film growth, Electronic devices for energy harvesting and energy efficiency, Wearable electronics and sensors, Micro actuators.

Changchun Zeng, Ph.D., Associate Professor, Ohio State University, Polymeric Materials, Composite Materials, Nanomaterials.

Mei Zhang, Ph.D., Associate Professor, Osaka Prefecture University, Nanomaterials Processing and Applications.

Research Facilities

The Department of Industrial and Manufacturing Engineering provides an excellent environment for instruction and research. The department has seven laboratories: Advanced Material Processing, Applied Robotics and Ergonomics, Automated Systems, Composite Manufacturing and Testing, Computer Integrated Manufacturing, Precision Manufacturing, and Quality Engineering. Each lab is equipped with state-of-the-art research and instructional equipment. For example, the manufacturing lab includes full-size and table-top robots and CNC machines, as well as software for data acquisition, simulation, and process monitoring and control.

Students have access to computer facilities, which include SUN workstations and servers, IBM-compatible Pentium-based PC's and high performance engineering workstations. The department offers access to a wide variety of software, including CAD/CAM simulation, optimization and database management programs. Software development environments supporting research activities are maintained. In addition, the College of Engineering computing facilities support a SUN cluster with fifteen Ultra Sparc Systems and LAN Manager environment.

FAMU participates in an Army-funded High-Performance Computing Research Consortium operated by the University of Minnesota, through which students have direct access to high performance supercomputers located on the University of Minnesota campus. Several engineering faculty members have a joint appointment with the National High Magnetic Field Lab.

Master of Science (MS)

The department offers a variety of Master of Science in Industrial Engineering (MSIE) program options to accommodate students' needs and specializations. Students may pursue a traditional MS or an MS with specialization in engineering management. The traditional MS program is research based, requiring the students to write and defend a thesis in their chosen area. However, the specialization in engineering management does not require a thesis. The Industrial Engineering Graduate Handbook, which is available from the department, provides a complete description of all programs and requirements.

Admissions

Candidates for admission to graduate study in industrial engineering must meet university and departmental criteria. In some cases, students may be admitted on a provisional basis pending successful completion of prerequisite work. In all matters concerning admission, decisions made by the departmental graduate committee are final. Students who do not have a bachelor's degree in industrial engineering are required to complete the following prerequisite courses before undertaking graduate study:

EGN 3443 Statistical Topics in Industrial Engineering,
AND
MAC 2313 Calculus with Analytic Geometry III
OR
MAS 3105 Applied Linear Algebra
OR
equivalent course as determined by the graduate committee.
AND
ESI 3312C Operations Research I: Deterministic
OR
ESI 4313 Operations Research II: Nondeterministic
OR
equivalent course as determined by the graduate committee
AND
a class in FORTRAN, PASCAL, or C (required as evidence of proficiency in programming).

Admission Requirements for Traditional MSIE

- A BS in industrial engineering (or a related field) from an accredited college or university, with a GPA of at least 3.0
- Minimum scores of at least 650 (151 in the new scale)

on the quantitative portion and 400 (147 in the new scale) verbal portion of the GRE
Note: Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this new test, go to http://www.ets.org/gre.

- A minimum score of 80 (iBT) on the TOEFL (international students only)

- Three letters of recommendation, addressed to the Director of Graduate Studies, assessing the applicant's potential to do graduate work

- A statement of professional goals

Admission Requirements for MSIE with Specialization in Engineering Management

Requirements for admission to this program are identical to the MSIE admission requirements, except that applicants' BS degree can be in engineering, computer science, mathematics, physics, or a related area as determined by the Director of Graduate Studies.

Degree Requirements

Thesis Option
Each MSIE student who intends to complete a thesis is required to take a minimum of thirty semester hours (twenty-four semester hours of course work and six semester hours of thesis). At least eighteen semester hours of the course work hours must be taken in the Industrial and Manufacturing Engineering Department. Students must maintain an overall GPA of 3.0 or above in order to graduate.

When filing a degree plan, students must specify one of the department's areas of concentration as their major: manufacturing systems and engineering, or quality engineering and industrial systems. If the desired area of concentration differs from the initial area assigned (based on the student's graduate application), a petition to the Director of Graduate Studies must be submitted requesting the change.

There are three sets of courses under the traditional MSIE program: core course, specialization industrial engineering courses and electives:

Core Courses

Every student choosing the thesis option must take the following courses and receive a grade of "B" or better in each: ESI 5408, Applied Optimization; ESI 5247, Engineering Experiments; ESI 5525, Modeling and Analysis of Manufacturing and Industrial Systems; and EIN 5936, Graduate Seminar.

Specialization Courses

These courses are used in defining minimum requirements for each specialization area. Each student is required to take at least three from those courses listed in his or her chosen area of specialization. Substitutions may be made with the approval of the student's advisory committee and the Director of Graduate Studies. Please refer to the departmental Web site at http://www.ie.eng.fsu.edu.

Electives

Elective courses provide program variation for students. An industrial engineering graduate course may be selected as an elective course. With the consent of the advisory committee, the student may take courses from other engineering departments, or other academic schools or colleges of the two universities.

Non-Thesis Option

Under exceptional circumstances, students may be allowed into the MSIE non-theses option. In such cases, students are required to complete a minimum of thirty-three semester hours of course work at the graduate level, at least twenty-four of which must be taken in the Department of Industrial Engineering. Each student must obtain an overall GPA of 3.0 or above in order to graduate. The following are the core courses for the non-thesis option:

EIN 5622 Computer-aided Manufacturing (3)
EIN 5936 Graduate Seminar (0)
ESI 5247 Engineering Experiments (3)
ESI 5408 Applied Optimization (3)
ESI 5417 Engineering Data Analysis (3)
ESI 5451 Project Analysis and Design (3)
ESI 5525 Modeling and Analysis of Manufacturing and Industrial Systems (3)
- [Choose one]

ESI 5223 Statistical Process Control (3)
OR
ESI 5228 Introduction to ISO 9000 (3)

Specialization in Engineering Management

Students are expected to complete thirty-three semester hours of course work, and will not complete a thesis. Students should contact the department to learn more about specific course requirements for this program.

Doctor of Philosophy (PhD)

The PhD in industrial engineering is designed for students and professionals who wish to pursue academic careers or to achieve advanced standing in the field. The general requirement is a minimum of forty-five semester hours of work beyond the baccalaureate degree, excluding any credits earned for a master's degree thesis, or a minimum of thirty-three semester hours beyond the master's degree.
Typically, twelve of the forty-five semester hours will have been satisfied by a student who has earned a master's degree in industrial engineering, or a closely related field. Of the remaining required hours, nine must be letter-graded course work combined with a minimum of twenty-four additional hours of dissertation research. The course work beyond the master's consists of: 1) eighteen semester hours of breadth-requirement core courses, and 2) up to six or more semester hours of depth-requirement courses, as determined by the student's doctoral supervisory committee. Residency and time-for-completion requirements are determined

by the student's university of enrollment. Students must maintain a minimum GPA of 3.4 at all times while enrolled in the program. Doctoral candidates must meet the department publication requirements before the viva voce of their dissertation.

Admissions

Note: The following standards also pertain to students who wish to pursue a PhD but have not yet obtained their master's degree. Applicants must meet the following minimum requirements:

1. Have a baccalaureate or Master's degree in industrial engineering (or related field) from an accredited college or university, with a grade point average (GPA) of at least 3.0 on a 4.0 scale, and at least 3.4 GPA on master's degree work;

2. Have a minimum score of 700 (155 in the new scale) on the Quantitative portion and 450 (150 in the new scale) on the Verbal portion of the GRE;
Note: Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this new test, go to http://www.ets.org/gre.

3. Have a minimum score of 80 (580 paper based) on the TOEFL iBT(international students only);

4. Three letters of recommendation, addressed to the Director of Graduate Studies, assessing the applicant's potential to do graduate work;

5. A statement of professional goals.

Core Courses for PhD Students

All PhD students are required to take the following courses as soon as possible after their admission to the PhD program. These courses provide students with a common, solid background in mathematics, statistics, and industrial engineering.

During the first calendar year of the PhD program, students must select a single course from each of the Mathematics and Computational course groups, and must earn a grade of "B" or higher. Students who do not satisfy this requirement may be dismissed from the program.

Mathematics Course Group
MAA 5306 Advanced Calculus I (3)
MAD 5345 Elementary Partial Differential Equations I (3)
STA 5323 Introduction to Mathematical Statistics (3)

Computational Course Group
EIN 5930r Specialized Topics in Industrial Engineering (1-6)
MAD 5403 Foundations of Computational Methods I (3)
MAP 5395 Finite Element Methods (3)
OR
EIN 5930 Special Topics in Industrial Engineering (1-6)
Note: The required topic is "Finite Elements Methods" for three (3) credit hours.
STA 5106 Computational Methods in Statistics I (3)

IE Core course group
The following courses are required if the student did not take them to fulfill requirements for the master's degree: ESI 5247, Engineering Experiments; ESI 5408/ESI 5412, Applied Optimization; ESI 5525, Modeling and Analysis of Manufacturing; and Industrial Systems and EIN 5930-02, Research Methodology.
Core courses cannot be taken on a pass/fail (S/U) basis.

Preliminary Examination

Following completion of a major portion of the coursework as defined in the degree plan, and upon certification of the doctoral supervisory committee that the student has 1) maintained a minimum 3.4 GPA and 2) progressed sufficiently in the study of industrial engineering and its research tools to begin independent research in the area of the proposed dissertation, the student is ready to take the preliminary examination.

The purpose of the preliminary examination is to test the adequacy of a student's background related to the student's area of concentration, and to determine if the student is adequately prepared to formulate and undertake acceptable dissertation research. The procedures are available from the department.

Dissertation

After completion of the preliminary examination, the student is admitted to formal candidacy for the PhD. After a period of preliminary research as determined by the doctoral committee, a research proposal must be successfully presented to the committee by the doctoral candidate. A doctoral dissertation then must be completed on a topic approved by the candidate's doctoral supervisory committee. To be acceptable, it must be an achievement in original research constituting a significant contribution to knowledge and represent a substantial scholarly effort on the part of the student. The doctoral supervisory committee, department chairperson, and such other members of the faculty as appointed by the academic dean or specified by university regulations will conduct the examination. Publication of the dissertation shall conform to the regulations of the university in which the student is registered.

Definition of Prefixes

EGN—Engineering: General
EIN—Industrial Engineering
EMA—Materials Engineering
ESI—Industrial/Systems Engineering

Graduate Courses
EIN 5182. Engineering Management (3). Prerequisite: EIN 5353. Course in modeling existing and future organizations, with emphasis on organizations for the 21st century. Special consideration is given to flat matrix models.
EIN 5353. Engineering Economic Analysis (3). Prerequisites: EGN 3443 and MAP 3305. This course includes feasibility science, mathematics and engineering focused on the engineering economic analysis of design and system alternatives for high technology operations.
EIN 5392. Manufacturing Processes and Systems (3). Prerequi-

site: EGN 4000. Material forming, material removal and material joining processes. Shop floor layout topics. Material flow topics. Information system topics. System integration topics. Manufacturing system evaluation topics. Case studies and design exercises.

EIN 5398. Manufacturing Materials Processing (3). Prerequisite: EIN 5392. Review of basic concepts and fundamental results of materials science. Fundamentals of casting processes and applications. Nontraditional methods in materials processing. Microscale material processing, with applications to microelectronics and similar structures. Industrial byproduct processing. Automation issues. Case studies and design exercises.

EIN 5459. Concurrent Engineering (3). Prerequisite: Graduate or senior standing with instructor permission. Concurrent product and process design. Product life cycle attributes. Design for manufacturing. Quality function deployment. Concurrent engineering project management topics. Case studies and design exercises.

EIN 5524. System Modeling and Simulation (3). Prerequisites: CGS 3460, EGN 3443, and ESI 3443. Discrete event, continuous, and process simulation. Combined discrete/continuous simulation. Manufacturing systems modeling. Event graphs. Simulation languages and systems. Experimentation with models. Introduction to simulation-specific statistical problems. Model validation and verification issues. Design exercises.

EIN 5622. Computer-Aided Manufacturing (3). Prerequisite: EIN 3390C. CAD/CAM. Numerical Control (NC) and Computer Numerical Control (CNC). Programmable automation. Computer-aided process planning.

EIN 5623. Computer-Aided Process Planning (3). Prerequisites: CGS 3408, EGN 2123, EIN 3390C, and EIN 4312. Course covers the role of process planning and computer-aided process planning (CAPP), development of CAPP, configuration of CAPP systems, input approaches of CAPP systems, process routing planning, machining operations design, variant CAPP systems, generative CAPP systems and artificial intelligence in CAPP.

EIN 5905r. Directed Individual Study (1–3). (S/U grade only.) Prerequisite: Instructor permission. May be repeated to a maximum of six semester hours.

EIN 5930r. Special Topics in Industrial Engineering (1–6). Prerequisite: Instructor permission. Topics in industrial engineering with particular emphasis on recent developments. May be repeated to a maximum of six (6) semester hours.

EIN 5931. Leadership and Communications (3). Prerequisites: Graduate standing and EGN 3613. Course topics include leadership theories, motivation, goal setting, planning, proposal writing and technical presentations. Presentations given by business leaders are planned.

EIN 5936r. Graduate Seminar (0). (S/U grade only.) Research presentations by faculty, students, and guests from industry.

EIN 6901r. Master's Thesis (1–6). (S/U grade only.) Prerequisite: Approval by department. Each master's thesis shall be supervised by a master's degree supervisory committee. Completed master's thesis shall be presented to the department in the form of a written report and a seminar. May be repeated to a maximum of nine semester hours.

EIN 8976r. Master's Thesis Defense (0). (P/F grade only.)

EMA 5182. Composite Materials Engineering (3). Prerequisite: Instructor permission. Course provides basic understanding of composite materials. Topics include introduction to composite materials, properties and forms of constituent materials, consideration of composite behavior and failure modes, characterization of material performance and testing, introduction to available manufacturing techniques, laboratory demonstrations, and case studies.

ESI 5223. Statistical Process Control (3). Prerequisite: ESI 4234. Advanced methods of statistical process control for univariate and multivariate processes, methods for change point detection and estimation, control chart performance comparisons, process capability studies.

ESI 5228. Introduction to ISO 9000 (3). Prerequisite: Instructor permission. Introduction to the ISO 9000 quality system standards. Quality auditing. Audit report writing. Documenting the requirements. Case studies and demonstrations.

ESI 5243. Engineering Data Analysis (3). Prerequisite: EGN 3443 or equivalent. Analysis of experimental and observational data from engineering systems. Course focuses on empirical model building using observational data for characterization, estimation, inference and prediction.

ESI 5247. Engineering Experiments (3). Prerequisites: EGN 3443 and ESI 5417. Course provides an introduction to designing experiments and analyzing the results. It is intended for engineers and scientists who perform experiments or serve as advisers to experimentation in industrial settings. Students must have an understanding of basic statistical concepts. A statistical approach to designing and analyzing experiments is provided as a means to efficiently study and comprehend the underlying process being evaluated. Insight is gained that leads to improved performance and quality.

ESI 5249. Response Surfaces and Process Optimization (3). Prerequisite: ESI 5247. This course explores combined statistical experiment designs, empirical model building, and optimization methods. Topics include restrictions on randomization, mixture experiments, and robust design. Emphasis is placed on software tools to build designs and perform appropriate analyses.

ESI 5328. Environmentally Conscious Design and Manufacturing (3). Prerequisite: Graduate standing. This course offers a review of basic concepts and fundamentals of environmentally conscious design and manufacturing. The topics include ecology and environment; review of environmental laws and regulations pertaining to design and manufacturing; the global picture of environmental concerns; integration of environmentally conscious design and manufacturing within a company; and life-cycle analysis for product and process design.

ESI 5408. Applied Optimization (3). Prerequisite: ESI 3312C. Optimization topics relevant to industrial operations and systems. Emphasis on basic modeling assumptions and procedure implementation. Topics shall include linear programming, nonlinear programming, discrete optimization and large-scale optimization software. Design exercises.

ESI 5451. Project Analysis and Design (3). Prerequisites: EGN 3613 and ESI 3312C. Project analysis and evaluation, utilizing networks and graph theory, advanced engineering economy, simulation procedures and other evaluation software. Project implementation topics, including resource shortfalls and expediting. Case studies and design exercises.

ESI 5458. Optimization on Networks (3). Prerequisite: ESI 3312C. Review of basic combinatorics. Basic concepts of graph theory. Matching and covering, and applications. Traversability and path problems on networks and applications. Tree problems. Network flows and applications. Eulerian paths, Hamiltonian paths, and applications. Location problems on networks. Design exercises.

ESI 5524. Advanced Simulation Applications (3). Prerequisite: ESI 4523 or EIN 5524. Application of simulation to complex systems, including material handling systems, real time scheduling, high speed/high volume production, modern manufacturing techniques, health-care delivery and logistics. Concurrent use of simulation and other analysis techniques. Use of experimental design, output analysis and validation techniques. Case studies.

ESI 5525. Modeling and Analysis of Manufacturing and Industrial Systems (3). Prerequisites: EIN 4333, ESI 3312C, ESI 4523, ESI 5408, and ESI 5524. Modeling and analysis of material flow systems, flow-shop and job-shop scheduling, material handling system analysis, mathematical and simulation modeling for general manufacturing and industrial systems.

Doctoral

EIN 6629. Tolerancing and Metrology for Precision Manufacturing (3). Prerequisites: EIN 5398, 5408. Theory and applications of tolerancing techniques in precision machining. Topics include tolerance representation, tolerance stack-up, tolerance analysis and synthesis, statistical tolerancing, coordinate measuring machines, form error evaluation algorithms, and advanced topics in form error assessment. Case studies and design exercises.

EIN 6980r. Dissertation (3–24). (S/U grade only.) Prerequisite: Doctoral candidate standing. Mandatory class for all PhD seeking students. May be repeated to a maximum of forty-eight semester hours.

EIN 8964. Preliminary Doctoral Examination (0). (P/F grade only.) Prerequisite: Doctoral candidate standing.

EIN 8985r. Dissertation Defense (0). (P/F grade only.) Prerequisite: Doctoral candidate standing.

Department of Mechanical Engineering

Faculty

Chair: Emmanuel Collins

Professors: Alvi, Cartes, Cattafesta, Collins, Hellstrom, Kalu, Krothapalli, Larbalestier, Shih, Van Dommelen, Van Sciver

Associate Professors: Clark, Hollis, Hruda, Moore, Oates, Ordóñez, Xu

Assistant Professors: Guo, Lin, Kumar, Taira; Affiliated Faculty: Gunsburger, Han, Hussaini, Tam; Adjunct Faculty: Amin, Bin, Chuy, Larson; Professor Emeritus: Buzyna, Chen, Gielisse

The Bachelor of Science (BS) program in the Department of Mechanical Engineering is designed to provide background for a wide variety of careers. The discipline of mechanical engineering is very broad, but generally emphasizes an appropriate mix of thermal science, mechanics and materials, dynamic systems, and design. Graduates typically enter various energy, aerospace, or product manufacturing industries, or into government laboratories.

The undergraduate program is designed to impart a broad knowledge in basic and engineering sciences and to provide a solid understanding of contemporary engineering practices. The program also seeks to provide students with a foundation in communications skills, principles of economics, and other fundamentals upon which they will draw in their professional careers. Special emphasis is placed on communications skills by requiring extensive written laboratory reports and design project presentations. Computer literacy is bolstered by a variety of course assignments throughout the program and especially in the design courses, wherein students are exposed to a number of design software programs widely used in the engineering industry.

Beyond the basic core curriculum, the Mechanical Engineering courses are grouped into five (5) major area streams: thermal and fluid systems, mechanical systems, mechanics and materials, dynamic systems, and engineering design. The courses in each of these areas give students a foundation in the relevant engineering sciences with a strong orientation in design and extensive laboratory experience. The design curriculum culminates with a one-year (two-semester) capstone design course in which students design and implement a full system or product, usually under industrial sponsorship.

Several undergraduate teaching laboratories provide extensive experimental apparatus for laboratory courses. The Fluid Mechanics laboratory, Heat Transfer laboratory, Solid Mechanics laboratory, Dynamic Systems laboratory, and Controls and Robotics laboratory are all well-equipped with the latest tools and equipment for experimentation, data acquisition, post processing and analysis. The College of Engineering provides several computer labs running a variety of standard design and analysis software packages, including Algor FEA modules, PTC's Pro/Engineer and Pro/Mechanica, MSC.Software's ADAMS and Mathworks' MATLAB.

Program Educational Objectives

Consistent with the missions of Florida State University, Florida A&M University and the College of Engineering, and in accordance with the Accreditation Board for Engineering and Technology (ABET) criteria, the department has developed the following program educational objectives. It expects its graduates in the first five years upon graduation from the program to:

1. Make career progress in industrial, research, or graduate work in mechanical engineering or allied fields;

2. Design and analyze devices, products, or processes that meet the needs of an employer, organization, or customer, based on sound scientific knowledge and engineering practices;

3. Become engineering professionals by engaging in professional activities and continuous self-development.

4. Function in multi-cultural and multi-disciplinary environments across regional and national borders.

Program Outcomes

After completing the mechanical engineering program, graduates should have the following attributes:

1. An ability to apply knowledge of mathematics, calculus based science and engineering to mechanical engineering problems;
2. An ability to design and conduct experiments, as well as to analyze and interpret data;
3. An ability to design thermal and mechanical systems, components, or processes to meet desired needs;
4. An ability to function on multi-disciplinary teams;

5. An ability to identify, formulate, and solve engineering problems;
6. An understanding of professional and ethical responsibility;
7. An ability to communicate effectively with written, oral, and visual means;
8. The broad education necessary to understand the impact of engineering solutions in a global and societal context, and a knowledge of contemporary issues;
9. A recognition of the need for, and the ability to engage in lifelong learning; and
10. An ability to use modern engineering techniques, skills, and computing tools necessary for engineering practice.

State of Florida Common Program Prerequisites

The State of Florida has identified common program prerequisites for this University degree program. Specific prerequisites are required for admission into the upper-division program and must be completed by the student at either a community college or a state university prior to being admitted to this program. Students may be admitted into the University without completing the prerequisites, but may not be admitted into the program.

At the time this document was published, some common program prerequisites were undergoing revision. For the most current list of state-approved prerequisites, please visit: http://www.flvc.org/student-services/college-transfer-center/common-prerequisite-manual

The following lists the common program prerequisites or their substitutions necessary for admission into this upper-division degree program:

1. MAC X311 or MAC X281
2. MAC X312 or MAC X282
3. MAC X313 or MAC X283MAP X302 or MAPX305
4. CHM X045/X045L or CHM X045C, or CHS X440 and CHM X045L
5. PHY X048/X048L or PHY X048C, or PHY X043 and PHY X048L
6. PHY X049/X049L or PHY X049C, or PHY X044 and PHY X049L

Core Program

A candidate for the Bachelor of Science (BS) in mechanical engineering is required to successfully complete the following engineering core courses (in addition to the mechanical engineering curriculum):

CHM 1045 General Chemistry I (3)
CHM 1045L General Chemistry I Laboratory (1)
EEL 3003 Introduction to Electrical Engineering (3)
EGN 1004L First Year Engineering Laboratory (1)
MAC 2311 Calculus with Analytical Geometry I (4)
MAC 2312 Calculus with Analytical Geometry II (4)
MAC 2313 Calculus with Analytical Geometry III (5)
MAP 3305 Engineering Mathematics I (3) or MAP 2302 Ordinary Differential Equations (3)
PHY 2048C General Physics A (5)
PHY 2049C General Physics B (5)

Students must earn a minimum grade in the "C" range in each of the college core courses, as well as the required and technical elective courses below. Students must meet the minimum overall grade point average (GPA) under the general requirements of the University. Students also must meet the prerequisite requirements specified by the College of Engineering. Please refer to the "College of Engineering" chapter in this Catalog for the specific college-level requirements.

Students are urged to obtain the most current information on the mechanical engineering requirements from their advisers or from the student affairs coordinator.

Mechanical Engineering Curriculum

Key features of the curriculum in mechanical engineering include the integration of relevant topical material, integration of engineering design with engineering science, the introduction to engineering design at an early stage in the curriculum, and the use of cooperative learning methodologies. The curriculum is in keeping with current trends in engineering education, industry expectations and needs, and the ABET 2003 accreditation guidelines.

The following core courses comprise the mechanical engineering curriculum:

EML 3002 Mechanical Engineering Tools (2)
EML 3002L Mechanical Engineering Tools Lab (3)
EML 3004 Introduction to Mechanical Engineering (3)
EML 3011C Mechanics and Materials I (4)
EML 3012C Mechanics and Materials II (3)
EML 3013C Dynamic Systems I (4)
EML 3014C Dynamic Systems II (3)
EML 3015C Thermal-Fluids I (4)
EML 3016C Thermal-Fluids II (4)
EML 3017C Mechanical Systems I (4)
EML 3018C Mechanical Systems II (4)
EML 3234 Materials Science and Engineering (3)
EML 3811 Mechatronics I (2)
EML 4304L Thermal-Fluids Lab (3)
EML 4550 Engineering Design Methods (3)
EML 4551C Senior Design Project I (3)
EML 4552C Senior Design Project II (3)
XXX XXXX Math Option (3)
XXX XXXX Technical Electives (12)

Technical electives are generally intended to develop depth in an area of interest and should form a coherent area of concentration. A minimum of three technical electives (nine semester hours) must be in the Department of Mechanical Engineering.

The math option is intended to provide additional math expertise oriented toward various areas of engineering. Students must choose from the following list of approved classes: MAP 3306 or STA 3032, Alternates: MAD 3401, MAD 3703, MAP 4341 or MAS 3105.

EML 3004 includes a math/physics test based on the material covered in Calculus I, Calculus II, and Physics I. Students may take this test at any time before or during their enrollment in EML 3004.

Honors in the Major

The Department of Mechanical Engineering offers a program in honors in mechanical engineering to encourage talented juniors and seniors to undertake independent and original research as a part of the undergraduate experience. For requirements and other information, see the "University Honors Office and Honor Societies" chapter of this Catalog.

Definition of Prefixes

EGM - Engineering Mechanics
EGN - General Engineering
EMA - Materials Engineering
EML - Mechanical Engineering

Undergraduate Courses

EGM 3512 Engineering Mechanics (4) Prerequisites: MAC 2312; PHY 2048. Corequisite: MAC 2313. Topics in this course include statics and dynamics of particles and rigid bodies using vector analysis, free body diagrams, equilibrium of particles and rigid bodies, particle and general rigid body motion, work/energy, and impulse and momentum methods.

EMA 4225 Mechanical Metallurgy (3) Prerequisite: EML 3012C. Topics include tensile instability, crystallography, theory of dislocations, plasticity, hardening mechanisms, creep and fracture, electron microscopy, composite materials.

EMA 4501 Optical and Electron Microscopy (3) Prerequisite: EML 3012C or instructor permission. Course covers fundamentals and techniques of optical and electron microscopy as applied to the determination of physical, chemical, and structural properties of materials and materials behavior in practice.

EML 3002. Mechanical Engineering Tools (2). Prerequisites: MAC 2311 and PHY 2048C. Corequisite: EML 3002L. This course is an introduction to thermal-fluid engineering necessary to understand the principles of operation of the engine built and modeled in the laboratory course.

EML 3002L. Mechanical Engineering Tools Lab (3). Prerequisites: MAC 2311 and PHY 2048C. Corequisite: EML 3002. This course covers computer aided design and drafting, programming, machining, and a basic introduction to the mechanical engineering profession and ethics. Course includes building and testing a simple Stirling engine. Course is subject to an additional materials fee.

EML 3004 Introduction to Mechanical Engineering (4) Prerequisites: MAC 2312; PHY 2048C. This course covers the application of calculus andphysics to engineering problems, statics, and a basic introduction to engineering design and analysis.

EML 3011C. Mechanics and Materials I (4). Prerequisites: CHM 1045, CHM 1045L, EML 3002, EML 3004, and MAC 2313. This course is the first part of a two-part sequence, integrating concepts of mechanics and principles of materials. It provides the student with a broad based introduction to and understanding of the application of materials in structural design, the processing of mechanical components, and the manufacture of high technology products.

EML 3012C. Mechanics and Materials II (3). Prerequisites: EML 3011C and PHY 2049C. Corequisite: EML 3234. This course is the second part of a two-part sequence, integrating mechanics and principles of materials science. Emphasis is on measurement techniques and experimental methods in solid mechanics and materials science. Topics covered include tensile, impact, torsion, fatigue and combined loading; beams in bending; structures of steel; and other concepts learned in mechanics of materials and materials science. This course also gives the students an insight into technical report writing techniques.

EML 3013C. Dynamic Systems I (4). Prerequisites: EML 3002 and EML 3004. Corequisite: MAP 3305 or MAP 2302. This course is the first part of an integrated sequence in dynamics, vibrations, and controls. Material in this first course includes the following: absolute and relative motion of particles and rigid bodies in inertial, translating, and rotating coordinate frames; derivation and computer solution of differential equations of motion; single degree of freedom vibrations and elementary feedback control.

EML 3014C. Dynamic Systems II (3). Prerequisite: EML 3013C. This course is the second part of an integrated sequence in dynamics, vibrations, and controls. Material in this second course includes the development of the equations of motion for translational and rotational mechanical systems, electrical systems, and electromechanical systems; system response using standard differential equation solution techniques and Laplace transforms; frequency response and impedances; linearization of nonlinear system models; and block diagrams and feedback control strategies.

EML 3015C. Thermal-Fluids I (4). Prerequisites: EML 3002, EML 3013C and MAC 2313. This course is the first of a two-part sequence presenting an integrated treatment of traditional topics on thermodynamics, fluid mechanics, and heat transfer. The essential role of each of these related elements and their connections is examined in the context of real-world systems. Materials covered include: first and second laws of thermodynamics; power and refrigeration cycles; heat transfer modes including steady and time dependent conduction, convection, and radiation; fluid statics; mass momentum and energy conservation; Bernoulli's equation; internal and external flows.

EML 3016C. Thermal-Fluids II (4). Prerequisite: EML 3015C. Corequisite: EML 4304L. This course is the second of a two-part sequence presenting an integrated treatment of traditional topics on thermodynamics, fluid mechanics, and heat transfer. The essential role of each of these related elements and their connections is examined in the context of real-world systems.

EML 3017C. Mechanical Systems I (4). Prerequisites: EML 3011C, EML 3013C, and MAP 3305 or MAP 2302. This course is the first in a sequence of two courses intended to provide the essential tools for the design and analysis of mechanical systems. Emphasis is on linkages; constraints and degrees of freedom; position, velocity, and acceleration analysis; cams, gears, and gear trains, static and dynamic analysis; computer simulations and models of components and systems; team class projects involving dissection of existing machines and design and manufacture of new mechan**ical systems.**

EML 3018C. Mechanical Systems II (4). Prerequisite: EML 3017C. Corequisite: EML 3012C. This course is the second in a sequence of two courses intended to provide the essential tools for the design and analysis of mechanical systems. Emphasis is on materials; stress analysis; shaft design; bearings and lubrication; fasteners and connectors; joints; clutches, brakes, couplings, and flywheels; flexible elements; shafts; computer simulations and models of components and systems; team class projects involv-

ing dissection of existing machines and design and manufacture of new mechanical systems.

EML 3050. Analytical Tools in Mechanical Engineering (3). Prerequisites: EML 3002C, EML 3004, and MAP 3305. Corequisites: EML 3011C and 3013C. This course explores mathematical and numerical tools relevant to practical applications in mechanical engineering, as well as modeling of real physical systems using mathematical formulation. Subjects include Fourier Series and Integrals; Fourier Transform and energy spectrum; solution of partial differential equations using separation of variables, finite difference of methods, and finite element methods; and numerical interpolation and integration.

EML 3100. Thermodynamics (2). Prerequisites: CHM 1045, MAC 2312, and PHY 2048. This course discusses the fundamentals of thermodynamics. System description, common properties. Properties of pure substances. Mathematical foundations. First and Second Laws of Thermodynamics, closed and open systems. Equations of state and general thermodynamic relations. For non-mechanical engineering majors.

EML 3234. Materials Science and Engineering (3). Prerequisite: CHM 1045. This course includes concepts of materials science and their relevance to engineering design. Recent advances in engineering materials science.

EML 3811. Mechatronics I (2). Prerequisites MAC 2312 and PHY 2049. This course is an introduction to Mechatronics through lab experience of interfacing mechanical and electrical systems. Focus is on embedded controllers (Motorola HCS12) and their programming, power and interfacing, electronics, actuators, sensors, and integration of these components to create a complete functional mechatronic system. Instruction and practical exercises are in: microcontroller programming; interfacing microcomputers with sensors and actuators; hybrid (analog/digital) design; digital logic and analog circuitry; data acquisition and control; microcomputer architecture, assembly language programming; signal conditioning, filters, analog-to-digital and digital-to-analog conversion.

EML 3949. Cooperative Work Experience (0). (S/U grade only.) This non-credit, experiential learning course offers students an opportunity to gain "real world" on-the-job work experience related to a specific academic field of study. Students must register for this course through the FSU Career Center.

EML 4161. Cryogenics (3). Prerequisites: EML 3012C and EML 3016C. This course focuses on the fundamental aspects of cryogenic system engineering: properties of materials and fluids at low temperatures; cryogenic heat transfer and fluid dynamics; low temperature refrigeration and system engineering.

EML 4288. Vehicle Design (3). Prerequisites: EML 3014C and EML 3018C. This introductory course in vehicle design emphasizes vehicle dynamics. Content covers the primary performance related features of vehicle design (suspension, steering, chassis, and tires). Using the latest industry-standard software, the course examines various design parameters that influence vehicle performance and handling.

EML 4304L. Thermal-Fluids Laboratory (3). Prerequisites: EML 3012C and EML 3015C. Corequisite: EML 3016C. This engineering laboratory explores measurements in fluid and thermal applications, including basic concepts for design of experiments, measurement devices, and their performance characteristics; measurement of fluid and thermal properties, pressure, velocity, and temperature; calibration procedures; experiments in fluid flow and heat transfer; design of engineering experimental systems; laboratory work, report writing.

EML 4312. Design and Analysis of Control Systems (3). Prerequisite: EML 3014C. This course focuses on mathematical modeling of continuous physical systems. Frequency and time domain analysis and design of control systems. State variable representations of physical systems.

EML 4316. Advanced Design and Analysis of Control Systems (3). Prerequisite: EML 4312. This course emphasizes design of advanced control systems (using time and frequency domains). Implementation of control systems using continuous (operational amplifier) or digital (microprocessor) techniques are addressed and practiced.

EML 4421. Fundamentals of Propulsion Systems (3). Prerequisite: EML 3016C. This course is an analysis of the performance of propulsion systems using fundamental principles of thermodynamics, heat transfer, and fluid mechanics. Systems studied include turbojet, turbofan, ramjet engines, as well as piston type internal combustion (IC) engines.

EML 4450. Energy Conversion Systems for Sustainability (3). Prerequisites: EML 3016C and senior standing in engineering. This course presents the challenge of changing the global energy system so it addresses reducing dependence on finite fossil energy sources and moving to environmentally sustainable energy sources. The emphasis is on greenhouse gas emissions-free energy production strategies, including renewable energy sources such as solar, wind and biomass. Topics include photovoltaic cells, fuel cells, and thermoelectric systems.

EML 4452. Sustainable Power Generation. (3). Prerequisites: EML 4450 or EML 5451. This course is a continuation of energy-conversion systems for sustainability and focuses on solar electricity, biopower, biofuels, and hydrogen as energy media. The course also explores whether hydrogen-based transportation is a practical option.

EML 4501. Machine Design (3). Prerequisite: EML 3018C. This course focuses on the design of mechanical systems and the components needed for their operation. Emphasis is placed on fasteners and connectors; joints; clutches and brakes; couplings and flywheels; flexible elements; shafts; machine dynamics; computer simulations and models of components and systems; team class projects involving the design and manufacture of mechanical systems.

EML 4512. Thermal-Fluid Design (3). Prerequisite: EML 3016C. This course is intended to develop the student's awareness and understanding of the relationship between fluid mechanics, thermodynamics, and heat transfer in consideration of design. Emphasis is placed upon energy systems components such as heat-exchangers, piping networks, and pumps. Includes a student project.

EML 4535C. Computer Aided Design (CAD) (3). Prerequisite: EML 3018C. This course is an introduction to the theory and practice of computer-aided design: computer graphics, homogeneous transformations; parametric solid modeling, optimization, finite element analysis.

E**ML 4536. Design Using FEM** (3). Prerequisite: EML 3018C. This course explores the Finite Method - what it is; elementary FEM theory; structures and elements; trusses, beams, and frames; two-dimensional solids; three-dimensional solids; axisymmetric solids; thin-walled structures; static and dynamic problems; available hardware and software; basic steps in FEM analysis; pre/post processing; interpretation of results; advanced modeling techniques; design optimization; advanced materials using FEM.

EML 4542. Materials Selection in Design (3). Prerequisites: EML 3012C and senior standing in mechanical engineering. This course examines the selection and application of materials predicated on material science and engineering case studies covering most engineering applications.

EML 4550. Engineering Design Methods (3). Prerequisites: EML 3002L and EML 3004. This course is a formal lecture component of the mechanical engineering 'capstone' senior design course project. The course covers the product design cycle from problem identification and need assessment, to specification, concept generation and selection, preliminary design, materials selection, and final design. The design process is placed in context by presenting topics such as legal and ethical issues, product reliability and liability considerations, engineering economics, and optimal design.

EML 4551C. Senior Design Project I (3). Prerequisites: EML 3012C, EML 3014C, EML 3016C, EML 3018C, and EML 4550. This course is the first in a two-part course sequence presenting an integrated system design approach for engineering product realization. Course blends the perspectives of market research and planning, design cycle, project management and teamwork, and technical reporting. This is the 'capstone' course for mechanical engineering students. This course offers weekly sessions in which teams are coached during the different phases of the project, plus frequent and extensive design reviews. This course is structured to closely resemble 'on the job' engineering education.

EML 4552C. Senior Design Project II (3). Prerequisite: EML 4551C. This course is the second part of the engineering design systems course. The material covered is a continuation of topics in the first part and the completion of a student-designed product.

EML 4711. Introduction to Gas Dynamics (3). Prerequisite: EML 3016C. This course is a thorough one-dimensional treatment of compressible flows and applications to nozzle, diffuser, sound waves, tunnel, and shock tube flows.

EML 4800. Introduction to Robotics (3). Prerequisite: EML 3014C. Corequisite: EML 4535C. This course explores the basic elements of a robot, robot actuators, and servo control; sensors, senses, vision, and voice; microprocessor system design and computers; kinematic equations; motion trajectories.

EML 4830. Introduction to Mobile Robotics (3). Prerequisite: Instructor permission. This course covers the following topics: analytical dynamic modeling and dynamic simulation of mobile robots; mobile robot sensors; basic computer vision methods; Kalman filtering and mobile robot localization; basic mapping concepts; path planning and obstacle avoidance; intelligent control architectures.

EML 4905r. Directed Individual Study (1–3). Prerequisites: Junior standing and a "B" average in mechanical engineering courses. May be repeated to a maximum of twelve semester hours.

EML 4930r. Special Topics in Mechanical Engineering (1–4). Prerequisite: Instructor permission. This course explores topics in mechanical engineering with emphasis on recent developments. Content and credit varies. May be repeated within the same term to maximum of twelve semester hours.

EML 4945r. Practical Work in Mechanical Engineering (1–3). (S/U grade only.) Prerequisite: Adviser permission. May be repeated to a maximum of three semester hours.

EML 4970r. Honors Work (3). Prerequisite: Acceptance into honors program. This course includes participation in a supervised research project and the production of a thesis describing the results of that work. May be repeated to a maximum of six required semester hours.

Graduate Courses

EGM 5444. Advanced Dynamics (3). Prerequisites: EGN 3321, EML 3220, MAP 3306. Topics include particle and rigid body kinematics, particle and rigid body kinetics, D'Alembert Principle, LaGrange's equations of motion, system stability, computational techniques, orbital dynamics, multi-body dynamics.

EGM 5611. Introduction to Continuum Mechanics (3). Prerequisite: Graduate standing. Solid and fluid continua. Cartesian tensor theory. Kinematics of infinitesimal deformation, relations between stress, strain, and strain rate for elastic, plastic, and viscous solids and for compressible and viscous fluids. General equations of continuum mechanics, integral forms, and their physical interpretation. Particular forms of equations and boundary conditions for elastic and viscoelastic solids and Newtonian fluids.

EGM 5653. Theory of Elasticity (3). Prerequisite: EGM 5611. This is an introductory course which provides background necessary to mechanical engineers who wish to pursue the area of theoretical or analytical solid mechanics. Topics include Cartesian tensors, kinetics and kinematics of motion, constitutive equations, linearized theory of elasticity, and solutions to boundary value problems.

EGM 5810. Viscous Fluid Flows (3). Prerequisite: EML 5709. Presents the basic fundamentals underlying the mechanics of gas, air, and fluid flows. Discussion of the possible methods of estimating and predicting the characteristics and parameters governing those flows.

EGM 6845. Turbulent Flows (3). Prerequisite: EML 5709. In-depth study of turbulent flows, statistical description of turbulence; instability and transition; turbulence closure modeling; free shear and boundary layer flows; complex shear flows; development of computational strategies; recent literature on applications and chaos phenomena.

EGN 5456. Introduction to Computational Mechanics (3). Prerequisite: MAP 4402. Familiarizes students with the procedures, stability, advantages, and disadvantages of numerical discretization as applied to solution of common engineering problems. Emphasizes numerical experimentation, cost effectiveness, and range of applicability.

EMA 5226. Mechanical Metallurgy (3). Prerequisites: EGM 3520, EML 3234. Tensile instability, crystallography, theory of dislocations, plasticity, hardening mechanisms, creep and fracture, electron microscopy, composite materials.

EMA 5514. Optical and Electron Microscopy (3). Prerequisite: EML 3234 or permission of instructor. Fundamentals and techniques of optical and electron microscopy as applied to the determination of physical, chemical, and structural properties of materials and materials behavior in practice.

EML 5060. Analysis in Mechanical Engineering (3). Prerequisite: Graduate standing in mechanical engineering. Familiarizes the student with methods of analysis in mechanical engineering. Surveys applications of integration and series, ordinary and partial differential equations, and linear algebra.

EML 5072. Applied Superconductivity (3). Prerequisites: EEL 3472, EGM 3520, EML 3100, 3234; PHY 3101. Introduction to superconductivity for applications, fundamentals of the superconducting state, transport current and metallurgy of superconductors, superconducting electrons and magnets, system engineering.

EML 5152. Fundamentals of Heat Transfer (3). Prerequisite: Graduate standing in mechanical engineering. An introductory course in basic heat transfer concepts. Topics include conduction and heat diffusion equation, forced and free convection, radiative heat transfer, boiling heat transfer, and condensation.

EML 5155. Convective Heat and Mass Transfer (3). Prerequisites: EML 5152, EGM 5810. Familiarizes the student with methods to evaluate a convection heat transfer coefficient and a mass transfer coefficient for a variety of engineering applications. Evaluation of the driving force in mass transfer and combined problems.

E**ML 5162. Cryogenics** (3). Prerequisites: EML 3100, 3140, 3701; PHY 3101. Fundamental aspects of cryogenics system and engineering properties of materials and fluids at low temperatures. Cryogenic heat transfer and fluid dynamics, low temperature refrigeration and system engineering.

EML 5311. Design and Analysis of Control Systems (3). Prerequisite: MAP 3306. Mathematical modeling of continuous physical systems. Frequency and time domain analysis and design of control systems. State variable representations of physical systems.

EML 5317. Advanced Design and Analysis of Control Systems (3). Design of advanced control systems (using time and frequency domains) will be emphasized. Implementation of control systems using continuous (operational amplifier) or digital (microprocessor) techniques will be addressed and practiced.

EML 5361. Multivariable Control (3). Prerequisite: EML 4312 or 5311. Course covers H2 and H control design for linear systems with multiple inputs and multiple outputs and globally optimal techniques, fixed-structure (e.g., reduced-order) techniques. Includes introductory concepts in robust control.

EML 5422 - Fundamentals of Propulsion Systems (3) . Prerequisite: Graduate standing in mechanical engineering. This course offers an analysis of the performance of propulsion systems using fundamental principles of thermodynamics, heat transfer, and fluid mechanics. Systems studied include turbojet, turbofan, ramjet engines, as well as piston-type internal combustion engines.

EML 5451. Energy Conversion Systems (3). Prerequisites: EML 3101, 3140, 3701. Investigation of such energy conversion systems as the internal combustion engine, compressors and turbines, gas turbines, nuclear power plants, garbage burning power plants, solar, wind, geo-thermal and electrical systems.

EML 5537. Design Using FEM (3). The Finite Element Method - what it is, elementary FEM theory, structures and elements, trusses, beams, and frames, two-dimensional solids, three-dimensional solids, axisymetric solids, thin-walled structures, static and dynamic problems, available hardware and software, basic steps in FEM analysis, pre/post processing, interpretation of results, advanced modeling techniques, design optimization, advanced materials using FEM.

EML 5543. Materials Selection in Design (3). Prerequisite: EML 3234 or equivalent. The application of materials predicated on material science and engineering case studies covering most engineering applications.

EML 5709. Fluid Mechanic Principles with Selected Applications (3). Prerequisites: EML 5060; EGM 5611, and graduate standing in mechanical engineering. Introductory concepts, description, and kinematical concepts of fluid motion, basic field equations, thermodynamics of fluid flow, Navier-Stokes equations, elements of the effects of friction and heat flow, unsteady one-dimensional motion, selected nonlinear steady flows.

EML 5710. Introduction to Gas Dynamics (3). Prerequisites: EML 3101, 3701. Concentrates on the unique features of compressibility in fluid mechanics. It provides the student with knowledge and understanding of the basic fundamentals of compressible fluid flow and is basic to studies in high-speed aerodynamics, propulsion, and turbomachinery.

EML 5725. Introduction to Computational Fluid Dynamics (3). Prerequisites: EML 5709, EGN 5456. Topics for this course include introduction to conservation laws in fluid dynamics; weak solutions; solving the full potential equations for subsonic, transonic, and supersonic flows; solving system of equations. In particular, upwind schemes and flux splitting will be introduced in solving the Euler equations. Coordinate transformation and grid generation methods will also be covered.

EML 5802. Introduction to Robotics (3). Prerequisite: Graduate standing in mechanical engineering. A study of the fundamentals of robot operation and application including: basic elements, robot actuators and servo-control, sensors, senses, vision, voice, microprocessor system design and computers, kinematic equations, and motion trajectories.

EML 5831 - Introduction to Mobile Robotics (3). Prerequisite: Graduate standing. This course examines analytical dynamic modeling and dynamic simulation of mobile robots, mobile robot sensors, basic computer vision methods, Kalman filtering and mobile robot localization, basic mapping concepts, path planning and obstacle avoidance, and intelligent-control architectures.

EML 5905r. Directed Individual Study (1-6). (S/U grade only.) Prerequisite: Instructor consent. May be repeated to a maximum of twelve (12) semester hours.

EML 5910r. Supervised Research (1-6). (S/U grade only.) A maximum of three (3) semester hours may apply to the master's degree. May be repeated to a maximum of six (6) semester hours.

EML 5930r. Special Topics in Mechanical Engineering (1-6). Prerequisite: Instructor consent. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor. May be repeated to a maximum of twelve (12) semester hours.

EML 5930 - Advanced Engineering Thermodynamics (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Advanced Materials (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Analysis in Mechanical Engineering II (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Experimental Methods in Nanoscale Science and Engineering (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Magnet Design (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 – Magnet Technology (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 – Robotics and Locomotion (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.
EML 5930 – Vehicle Design (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.
EML 5935r. Mechanical Engineering Seminars (0). (S/U grade only.) May be repeated to a maximum of ten times.
EML 5946r - Professional Internship Experience in Mechanical Engineering (4). This course provides practical experience through working as an intern at selected industry or research laboratories supervised by the on-the-job mentors and by the Department of Mechanical Engineering. The course is designed to provide the student with professional internship experience in preparation for his/her future career development.
EML 5971r. Thesis (3-6). (S/U grade only.) A minimum of six (6) semester hours is required.
EML 6980r. Dissertation (1-12). (S/U grade only.) May be repeated to a maximum of forty-eight (48) semester hours.
EML 8968. Preliminary Doctoral Examination (0). (S/U grade only.)
EML 8976r. Master's Thesis Defense (0). (S/U grade only.)
EML 8985r. Dissertation Defense (0). (S/U grade only.) May be repeated to a maximum of three times.

For listings relating to graduate course work for thesis, dissertation, and master's and doctoral examinations and defense, consult the Graduate Bulletin.

Mechanical Engineering Department Graduate Programs
Chair: Emmanuel Collins
Associate Chair: Steven Van Sciver
Undergraduate Coordinator: Hollis, P.
Professors: Alvi Cartes, Cattafesta, Chen, Collins, Hellstrom, Kalu, Krothapalli, Larbalestier, Lin, Shih, Van Dommelen, Van Sciver
Associate Professors: Hollis, Hruda, Moore, Ordóñez, Xu
Assistant Professors: Clark, Guo, Kumar, Oates, Taira
Affiliated Faculty: Chuy, Han, Hussaini, Kopriva, Larson, Tam
Professors Emeriti: Buzyna, Cartes, Chen, Gielisse, Luongo

The Department of Mechanical Engineering offers two graduate degree programs: the Master of Science (MS) and the Doctor of Philosophy (PhD). The graduate program in mechanical engineering is designed to provide students with the necessary tools to begin a productive career in engineering practice or research, a career that probably will span a period of three to five decades. Although it is not possible to teach everything that one needs to know in the graduate program, the program provides the students with the skills, knowledge and philosophy that will enable them to continue to grow throughout his/her career. The graduate training a student receives emphasizes a fundamental approach to engineering whereby the student learns to identify needs, define problems and apply basic principles and techniques to obtain a solution. This philosophy is incorporated in classroom lectures, laboratory activities, design projects, and research.

It is essential that a successful department cultivates and maintains a diverse and dynamic program that is nationally recognized. The department is actively involved in basic research, which expands the frontiers of knowledge, as well as applied research designed to solve both present and future technological needs of society. The major research activities are focused in three primary areas: fluid mechanics and heat transfer, solid mechanics and material science, and dynamic systems and controls (including mechatronics and robotics). State-of-the-art laboratories are associated with each of these areas. In addition, much of the research is conducted in cooperation with the National High Magnetic Field Laboratory, the School of Computational Science and Information Technology, the Center for Material Research and Technology, and the Center for Advanced Power Studies.

A complete description of the mechanical engineering graduate program, including recent changes, may be found at http://www.eng.fsu.edu/me

Research Programs and Facilities

The Florida Center for Advanced Aero-Propulsion (FCAAP) has been established to ensure that the State of Florida remains at the forefront of the aerospace industry and maintains a highly skilled workforce to develop, test, transition and manufacture the next generation of aerospace technologies. The center is a partnership between four state universities, with FSU as the leading institution. The Advanced Aero-Propulsion Laboratory (AAPL), also located at FSU, is the primary experimental and research facility. AAPL contains testing and diagnostic facilities not commonly available at university research centers. These include: a new Hot

Jet Anechoic facility capable of operating supersonic hot jets - up to 2000 Fahrenheit, a STOVL Test Facility, and optical diagnostic development lab, a supersonic and a large subsonic wind tunnel. In addition to AAPL, the center is home to several state-of-the-art research laboratories lead by an experienced team of internationally recognized scientists, researchers, and engineers. In collaboration with government and industry, FCCAP will serve as a technology incubator to promote innovative research and encourage a rapid transition of technologies to market. FCAAP plays a vital role in shaping the next generation of air and spacecraft designs, space transport systems, and aviation safety. FCAAP's current research is focused on Active Flow, Noise and Vibration Control, Aero-optimization, Advanced Propulsion and Turbomachinery Systems, Sensor and Actuator Development, Advanced Diagnostics, Aero-Thermodynamics and Aeroacoustics, High Performance Computation, Smart Materials, Systems and Structures and other related fields.

The vision of the Center for Intelligent Systems, Control, and Robotics (CISCOR) is to use state-of-the-art technology to develop practical solutions to problems in systems, control, and robotics for applications in industry and government. CISCOR represents a cooperative approach for conducting interdisciplinary research in the automated systems area across two departments (Mechanical Engineering and Electrical and Computer Engineering) in the College of Engineering and the Department of Computer Science. The Center's goal is to provide a means for the state of Florida to achieve national prominence in the area of automated systems and to assume a leadership role in the state of Florida's technology of the future. Established in 2003, CISCOR has become a leading

center in Florida for the development and implementation of technologies related to Intelligent Systems, Control, and Robotics.

The Energy and Sustainability Center (ESC) has been established to address our most challenging energy issues through the development of innovative alternative energy solutions for consumers and industry. The center will develop a portfolio of pre-commercial research programs to explore reliable, affordable, safe, and clean energy technologies. A key objective of ESC is to encourage future commercial application of the technologies that flow from the research. ESC has a number of specialized facilities for technology development and implementation including: a fuel-cell testing laboratory, a water-electrolysis electrode testing laboratory, a solar-thermal system component testing facilities, small-scale electrical power systems laboratory, and other facilities through collaborations with the FAMU-FSU College of Engineering, the Center for Advanced Power Systems (CAPS), and the National High Magnetic Field Laboratory (NHMFL).

The Institute for Energy Systems, Economics and Sustainability (IESES) at Florida State University will be an essential component of Florida's leadership in sustainable energy. The Institute is a public resource. We carry out scholarly basic research and analysis in engineering, science, infrastructure, governance, and the related social dimensions; all designed to further a sustainable energy economy. The Institute unites researchers from the disciplines of engineering, natural sciences, law, urban and regional planning geography, and economics to address sustainability and alternative power issues in the context of global climate change. Our goal is scholarship that leads to informed governance, economics, and decision making for a successful Florida sustainable energy strategy.

The Active Structures and Microsystems Laboratory is equipped with quasi-static and dynamic characterization measurement systems and computational facilities for studying the field-coupled material behavior and dynamics of a number of adaptive materials and devices. Material characterization equipment includes a benchtop MTS load frame for soft materials, high voltage (10 kV) power supply, high impedance electrometer, and polarized optical microscope for /in situ/ material characterization. An additional facility at the Advanced Aero Propulsion Laboratory is equipped with a 1000V/7A switching power supply for driving piezoelectric materials, dSpace and Simulink for dynamics and controls experiments and coupling smart structures with flow environments. A new 3D visualization system is also available for imaging 3D simulations and data as part of a program in collaboration with the Department of Scientific Computing at Florida State University

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The Program in Computational Fluid Dynamics involves algorithm development and application in the areas of: 1) unsteady flows with large- scale separation; 2) computational and mathematical acoustics; 3) unsteady biofluid mechanics; 4) modeling of turbulent flows; and 5) parallel solution of partial differential equations. These are areas of considerable interest, as well as physical importance, which pose particular numerical simulation challenges. The computational program is supported by the Department of Scientific Computing at Florida State University, which operates an 168 node IBM SP-3 with 84 gigabytes of memory, as well as a heterogeneous compute cluster and several mid-range computers.

The Cryogenics Laboratory is a fully equipped facility for the conducting of low-temperature experimental research and development. The laboratory, which occupies approximately 400 m2 at the National High Magnetic Field Laboratory (adjacent to the College of Engineering), supports research and development projects in a wide variety of technical fields. Numerous experimental apparatus are available within the Cryogenics Laboratory for research projects. The Liquid Helium Flow Facility (LHFF) consists of a 5 m long, 20 cm ID horizontal cryogenic vessel with vertical reservoirs at each end containing circulation pumps and other hardware. The facility includes transverse viewing ports for flow visualization studies. The Cryogenic Helium Experimental Facility (CHEF) consisting of a 3 m long, 0.6 m ID cryogenic vessel with N2 and He temperature thermal shields. CHEF is equipped with a high-volume flow bellows pump capable of up to 5 liters/s. The Cryogenic Particle Image Velocimetry (PIV) Facility including apparatus to perform micro-scale imaging studies of flow fields in cryogenic fluids. A cryogenic vessel with optical windows, dual head pulse Nd:YAG laser and image processing equipment are included in the facility. Currently, this facility is being used to develop neutral density particles, including solid H2/D2, and observe flow fields in liquid helium. A cryogenic transport property measuring facility that includes a two stage GM Cryocooler with compressor that can achieve Tmin = 10 K and provide 30 W at 20 K and 60 W at about 70 K. All cryogenics facilities are supported by a full complement of cryogenic hardware to measure flow rate, void fraction, liquid level, temperature and pressure. Microcomputer data acquisition is available for interfacing to all experiments. The electronics available in the laboratory that may be accessed through this system include a full complement of amplifiers, signal conditioning equipment and data recorders. The laboratory contains all necessary equipment to perform modern cryogenic experiments. High vacuum equipment including a mass spectrometer leak detector and two portable turbo pump systems provides thermal isolation. A high-capacity vacuum pump (500 liter/s) is used to support subatmospheric experiments including those with superfluid helium.

The Robotics Laboratory conducts research in four broad areas: robust control, mechatronics and robotics, applications of adaptive and intelligent control, and computer aided design. In robust control research, emphasis is on the development of optimization-based, control synthesis techniques for the design of fixed-architecture, robust controllers for mechanical systems (e.g., jet engines and magnetic bearings) with uncertain dynamics. Mechatronics is an interdisciplinary design methodology based upon a synergistic integration of fundamental procedures and techniques from mechanical, electrical, and computer engineering. Research in this area involves the use of specialized microelectronic sensors, actuators, and processors. In the area of robotics the objective is to employ multiple sensors and actuators to monitor and control wheeled mobile robots. Adaptive and intelligent control focuses on distributed knowledge based control techniques for linear and nonlinear systems, which allow processes to adapt to changes in parameters and learn to respond properly under rapidly changing constraints. Research in this area requires highly integrated mechanical engineering, electrical and computer engineering, and computer science solutions and is conducted in the Power Control Lab of the Center for Advanced Power Systems. The research conducted in the Computer Aided Design facility (CAD) involves computer modeling of complex systems, such as solid assemblies,

followed by the simulation of these same systems. The CAD facility is currently well equipped with IBM RS/6000 workstations, Silicon Graphics Indy workstations, multimedia Pentium personal computers, and several laser and color inkjet printers.

The Robotics Laboratory also conducts intelligent mechanical systems research including: manipulator design and control, haptic interface design and control, machine learning, mobile robot control, human-robot collaboration (COBOT), and telerobot control. Recent projects include: manipulator design for human-robot collaborative systems, novel suspension design for decreased mobile robot wheel slip, control algorithm development for parallel robots, mobile robot terrain classification using neural networks, mitigation of time delay effects in telerobot control, and lift hoists design for automatic inertia calculation of space systems. The laboratory offers research opportunities for students seeking master's and doctoral degrees as well as for undergraduate students. The majority of students work on individual projects that involve: design of electro-mechanical systems to solve engineering problems; use of experimentation, mockups, and computer simulations to develop and study control algorithms and novel mechanism; production of CAD drawings, part manufacturing and assembly; and electronic control chassis design and construction.

The High Temperature Superconductors Magnets and Materials Laboratory (HTSMML) involves experimental and computational research that advances the fundamental understanding and applications of high-temperature superconducting materials. HTSMML research is interdisciplinary, involving materials processing, composite mechanical behavior, and electrical-magnetic-mechanical properties of these emerging technical superconductors. This research includes the investigation of the key obstacles to implementing HTS materials in practical magnet systems. Current research directions include the development of a 5 T insert coil, coil design optimization, electro-mechanical behavior of conductors for power applications, magneto-optical imaging of YBCO coated conductors subjected to axial tension, quench propagation measurements, ac loss measurements, processing of low ac loss conductors, processing of alternative conductor materials, and texturing of materials within high magnetic field. Computational research is motivated by the experimental research. Research in the HTSMML is lead by Professor Justin Schwartz and includes research staff from the NHMFL and the Center for Advanced Power Systems, post-doctoral researchers, graduate students, and undergraduate students.

Research programs in the Materials Processing and Applications Laboratory focus on the development of processes that put high performance materials into actual system or device applications. As such, the programs tend to be interdisciplinary and cooperative research efforts often are carried out with industrial firms. The laboratory's aim is to provide novel ideas and approaches to solutions of engineering problems in cutting edge technologies and to educate students in complex real-life settings. Accomplishments include the development of a magnetometer system for nondestructive analysis of materials and the development of a software design tool for multilayer structures. Physical property measurements of materials are being conducted in a variety of areas, including the measurement of the thermal expansion of materials at cryogenic temperatures by digital micro-image processing.

Research in the Materials Testing and Characterization Laboratory is focused on the investigation of processing-structure-property relationships in advanced materials. Materials of interest include but are not limited to high temperature materials (titanium aluminides and their composites), superplastic materials (titanium and aluminum), superconducting materials, and high-strength conductors and polymeric matrix composites. The program is divided into three areas of specialization: processing and testing, materials characterization, and micromechanical modeling. Research in processing and testing employs deformation processing, such as rolling, forging or wire drawing to improve the mechanical properties of materials. Research in materials characterization aids in the improvement of the mechanical properties of materials by identifying and measuring vital metallurgical parameters at several stages of processing. The microstructural characterization facility consists of optical microscopes, an X-ray diffractometer, a scanning electron microscope, and an environmental scanning electron microscope. Research in micromechanical modeling relates the micromechanics to mechanical properties such as stress, strain rate and hardness.

A major part of the research activities in the Quantum Turbulence Visualization Program focuses on visualization study of turbulence in superfluid helium. Superfluid helium is an important cryogenic coolant for engineering applications. Heat transportation in helium however can be strongly affected by the presence of turbulence. Due to the quantum nature of the liquid, turbulence in superfluid helium possesses unique physical properties. Studying the turbulence in helium not only has practical significance but can also improve our understanding of turbulence in general. To visualize the flow in superfluid helium, we use metastable helium molecules as tracers. A laser-induced fluorescence technique has been developed to image the molecular tracers. Using this method, we have successfully unveiled a new form of turbulence when a heat current passes through superfluid helium. In the next experiment, we plan to use a strong femtosecond laser to create a line of helium molecules via laser-field ionization in liquid helium. Studying the drift and distortion of a molecular line shall provide us detailed information of the flow field. We also work on helium-based dark matter detector R&D. While evident through its gravitational effects, dark matter has an unknown intrinsic nature. Direct searches for light dark matter particles are especially challenging because of the low energies transferred in elastic scattering, resulting in few events above energy threshold for the heavy nuclear targets typically used in dark matter experiments. A helium-4 nucleus is kinematic matched to light dark matter particles. Using superfluid helium-4 as a target material shall allow us to explore the low-mass regime of the dark matter parameter space that other detectors can hardly access.

The Scansorial and Terrestrial Robotics and Integrated Design (STRIDe) Laboratory is dedicated to the design, analysis and manufacturing of novel and dynamic robotic systems. In order to imbue robotic systems with the agility and functionality akin to their biological inspirations, it is critical to understand the interplay between the structures' underlying passive dynamics and the control systems that enervate them. Research in this lab involves working closely with biologists to understand the underlying functional principles behind successful animal locomotion. These prin-

ciples are then encoded in simplified dynamic models. The analysis of these models leads to insight regarding the roles of passive and active elements in creating self-stabilizing dynamic systems. Innovative manufacturing processes, such Shape Deposition Manufacturing (SDM) and other rapid prototyping techniques are then applied to build robots capable of moving in a dynamic and agile manner over difficult terrain. To analyze and build these robots, the lab is equipped with dynamic motion analysis equipment as well as a suite of state-of-the-art manufacturing tools.

Graduate students participating in research are provided office space in the laboratories and have access to substantial staff support from their research group.

Bachelor/Master of Science

The BS-MS program is a combined undergraduate-graduate program leading to the simultaneous award of the BS and MS degrees. This program is designed for five years of full-time study. It provides students with a unique opportunity to combine advanced undergraduate and graduate studies in mechanical engineering with practical, real-world, product-oriented experience in the engineering of mechanical systems. Students in the BS-MS program cover the same scope and level of subjects as those in the regular MS program, and the successful student will have equivalent qualifi cations and opportunities for advanced graduate study programs. Completion of the fourth year of the five year curriculum will give the student enough credit and breadth of subject matter to satisfy university requirements for the BS degree should individual circumstances arise that preclude a student from continuing the fifth year.

It has become clear in recent years that industry needs people who have not only a sound education in mathematics, basic sciences, and engineering science, but who also have knowledge and experience in the solution of real world, product-driven problems. This means that students need to learn communication skills suited to the engineering workplace. They also need to experience team design projects that produce real products to satisfy real requirements. These increasing demands upon the undergraduate engineering curriculum, both for greater depth of knowledge in an expanding technical field, and for practical, product-oriented experiences, could not be satisfied within the parameters of a traditional four year undergraduate curriculum. The five-year BS-MS program was created to satisfy the industry need by coordinating the curriculum in the fourth undergraduate year with that in an additional fifth graduate year coupled with industrial internship experiences.

Master's Program

The Department of Mechanical Engineering offers several options for the Master of Science degree. Students may pursue a traditional Mechanical Engineering degree (with a thesis or non-thesis option) or specialize in Sustainable Energy. The department is also a member of the Interdisciplinary Materials Science Program through which students can earn a master's degree in Material Science.

Admissions

Prospective students must have a BS degree (or a recognized equivalent) in Mechanical Engineering or any one of the following related fields: Any Engineering Major, Chemistry, Computer Science, Material Science, Mathematics/Applied Mathematics or Physics/Applied Physics. Non-majors, students without a BS degree in Mechanical Engineering, may be required to take up to twelve credit hours of remedial coursework in Mechanical Engineering as a condition of admission.

Applicants must have at least a 3.0 upper-division GPA, a GRE Verbal score of at least 150, and a GRE Quantitative score of at least 155 (or a minimum combined GRE General Test score of 1150). International students must take the TOEFL exam and score at least 550 on the paper-based exam, 213 on the computer-based exam, or 80 on the Internet-based exam. Applicants must also submit a personal statement, resume, and three letters of recommendation. Please visit the department Web site for additional details.

Note: Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this test, go to http://www.ets.org/gre.

Major in Mechanical Engineering

I. Thesis Option

Mechanical Engineering students must take the following minimum distribution of courses for a total of thirty credit hours:

Core Courses

- Nine credit hours: EML 5060 Analysis in Mechanical Engineering and two core courses in the major area (either Dynamics and Controls, Fluid Mechanics and Heat Transfer or Solid Mechanics and Materials Science).

- Core courses in Dynamics and Controls: EGM 5444 Advanced Dynamics (3), EML 5317 Advanced Design and Analysis of Control Systems (3), EML 5361 Multivariable Control (3), EML 5930r Special Topics in Mechanical Engineering (1-6).

- Core courses in Fluid Mechanics and Heat Transfer: EML 5152 Fundamentals of Heat Transfer (3), EML 5155 Convective Heat and Mass Transfer (3), EML 5709 Fluid Mechanics Principles with Selected Applications (3), EML 5930r Special Topics in Mechanical Engineering (1-6).

- Core courses in Solid Mechanics and Materials Science: EGM 5611 Introduction to Continuum Mechanics (3), EGM 5653 Theory of Elasticity, EML 5930r Special Topics in Mechanical Engineering (1-6).

Mechanical Engineering Courses

Six credit hours: two courses in Mechanical Engineering.

Electives

Nine credit hours: Select three graduate-level courses in engineering, mathematics, or any science discipline (computer science, physics, etc.). Courses must be selected in consultation with the student's major professor. One of the three electives may include EML 5905 Directed Individual Study or EML 5910 Supervised Research.

Thesis
Six credit hours: EML 5971 Thesis (3-6) and EML 8976 Master's Thesis Defense (0).

II. Non-Thesis Option

The non-thesis option requires thirty-three credit hours, of which at least thirty credit hours must be letter-graded courses. Students must complete twenty-one credit hours of coursework within mechanical engineering. Six credit hours may be taken outside the department in any of the following areas: engineering, mathematics, or any science discipline (computer science, physics, etc.). The remaining six credit hours are devoted to an Engineering Design Project or two additional letter-graded courses.

Major in Sustainable Energy

Sustainable Energy students must take the following minimum distribution of courses for a total of thirty credit hours:
Core Courses

Fifteen credit hours: EML 5060 Analysis in Mechanical Engineering I (3), CHM 5153 Engineering Electrochemistry (3), EML 5451 Energy Conversion Systems for Sustainability (3), EML 5452 Sustainable Power Generation (3), EML 5930r Special Topics in Mechanical Engineering (1-6).

Electives

Nine credit hours: Select three graduate-level courses in engineering, mathematics, or any science discipline (computer science, physics, etc.). Courses must be selected in consultation with the student's major professor. One of the three electives may include EML 5905 Directed Individual Study or EML 5910 Supervised Research.

Thesis
Six credit hours: EML 5971 Thesis (3-6) and EML 8976 Master's Thesis Defense (0).

Doctor of Philosophy

Admissions

PhD Program

Prospective students must have MS degree in Mechanical Engineering or any one of the following related fields: any Engineering Major, Chemistry, Computer Science, Material Science, Mathematics/Applied Mathematics or Physics/Applied Physics. Non-majors students without a BS degree in Mechanical Engineering may be required to take up to twelve credit hours of remedial coursework in Mechanical Engineering as a condition of admission.

Applicants must have at least a 3.0 upper-division GPA a GRE Verbal score of at least 150, and a GRE Quantitative score of at least 155 (or a minimum combined GRE General Test score of 1150). International students must take the TOEFL Exam and score at least 550 on the paper-based exam, 213 on the computer-based exam, or 80 on the Internet-based exam. Applicants must also submit a personal statement, resume, and three letters of recommendation. Please visit the department Web site for additional details.

Note: Effective August 2011, the GRE Revised General Test replaced the GRE General Test. To learn more about this test, go to http://www.ets.org/gre.

BS to PhD Program

In addition to the standard PhD program the department offers a direct BS to PhD program. This program is limited to students with excellent academic transcripts and demonstrated potential

for advanced research. Applicants must submit strong letters of recommendation from professors or persons qualified to evaluate their academic potential. Finally, a member of the Mechanical Engineering faculty must recommend the student to the program. Admission to the program is finalized at the end of the second semester. During their first two semesters, student must maintain a minimum graduate GPA of 3.50. Final admission to the PhD program is granted by the Graduate Committee.

Students initially admitted to the master's program may request a transfer to the BS-PhD program at the end of their second semester. The student must have maintained a graduate GPA of 3.50 or better during their first two semesters.

Degree Requirements

PhD Program

The standard PhD program requires forty-five credit hours of coursework, of which at least twenty-four credit hours must be dissertation hours. The remaining twenty-one letter-graded credit hours are divided into three areas:

General Engineering and Mathematics

Students must complete six credit hours of general engineering and advanced mathematics courses. One of those courses must be EML 5930 - Special Topics in Mechanical Engineering. The remaining course must be from the approved course list. See department Web site for approved list.

Electives

Students must co**mpl**ete fifteen credit hours of electives. Courses may be taken in any engineering program, mathematics, and/or

any science discipline.

BS to PhD Program

The BS-PhD program requires sixty credit hours of coursework, of which at least twenty-four credit hours must be dissertation hours. The remaining thirty-six letter-graded credit hours are divided into three areas:

General Engineering and Mathematics

Students must complete six credit hours of general engineering and advanced mathematics courses. One of those courses must be EML 5930 - Special Topics in Mechanical Engineering. The remaining course must be from the approved course list. See department Web site for approved list.

Core Courses

Students must complete nine credit hours of core courses in their chosen depth area.
Mechanical Engineering Courses
Students must complete six credit hours of general mechanical-engineering courses.

Electives

Students must complete fifteen credit hours of electives. Courses may be taken in any engineering program, mathematics, and/or any science discipline. Students may substitute one elective course with a Directed Individual Study (DIS) course or Supervised Research (SR) course.

Additional Requirements

Preliminary Examination

All PhD students are required to register for and pass EML 8968 - Preliminary Examination before the end of their second semester (fourth semester for BS-PhD students). The exam is designed to evaluate a student's grasp of a specified spectrum of Mechanical Engineering and their ability to think creatively. It consists of both written and oral examinations and is administered each spring. After passing the exam the student will be granted doctoral candidacy status.

Prospectus Defense

Within one year of obtaining candidacy status each PhD student must present to their Committee a prospectus on a research project suitable for a doctoral dissertation. A forty-five minute presentation of the proposed dissertation topic will be followed by an oral examination in the general area of the dissertation.

Dissertation Defense

Demonstrated ability to perform original research at the forefront of mechanical engineering is the final and major criterion for granting the doctoral degree. The candidate's dissertation serves, in part, to demonstrate such competence; on completion it is defended orally in a public seminar before the doctoral dissertation committee, which may then recommend the awarding of the degree.

Doctor of Philosophy in Materials Science and Engineering

The Department of Mechanical Engineering is a member of the Interdisciplinary Program in Materials Science and Engineering. For more information on the Materials Science and Engineering program, please visit http://materials.fsu.edu.

Definition of Prefixes
EGM - Engineering Mechanics
EGN - General Engineering
EMA - Materials Engineering
EML - Mechanical Engineering

Graduate Courses

EGM 5444. Advanced Dynamics (3). Prerequisites: EGN 3321, EML 3220, MAP 3306. Topics include particle and rigid body kinematics, particle and rigid body kinetics, D'Alembert Principle, LaGrange's equations of motion, system stability, computational techniques, orbital dynamics, multi-body dynamics.
EGM 5611. Introduction to Continuum Mechanics (3). Prerequisite: Graduate standing. Solid and fluid continua. Cartesian tensor theory. Kinematics of infinitesimal deformation, relations between stress, strain, and strain rate for elastic, plastic, and viscous solids and for compressible and viscous fluids. General equations of continuum mechanics, integral forms, and their physical interpretation. Particular forms of equations and boundary conditions for elastic and viscoelastic solids and Newtonian fluids.
EGM 5653. Theory of Elasticity (3). Prerequisite: EGM 5611. This is an introductory course which provides background necessary to mechanical engineers who wish to pursue the area of theoretical or analytical solid mechanics. Topics include Cartesian tensors, kinetics and kinematics of motion, constitutive equations, linearized theory of elasticity, and solutions to boundary value problems.
EGM 5810. Viscous Fluid Flows (3). Prerequisite: EML 5709. Presents the basic fundamentals underlying the mechanics of gas, air, and fluid flows. Discussion of the possible methods of estimating and predicting the characteristics and parameters governing those flows.
EGM 6845. Turbulent Flows (3). Prerequisite: EML 5709. In-depth study of turbulent flows, statistical description of turbulence; instability and transition; turbulence closure modeling; free shear and boundary layer flows; complex shear flows; development of computational strategies; recent literature on applications and chaos phenomena.
EGN 5456. Introduction to Computational Mechanics (3). Prerequisite: MAP 4402. Familiarizes students with the procedures, stability, advantages, and disadvantages of numerical discretization as applied to solution of common engineering problems. Emphasizes numerical experimentation, cost effectiveness, and range of applicability.
EMA 5226. Mechanical Metallurgy (3). Prerequisites: EGM 3520, EML 3234. Tensile instability, crystallography, theory of dislocations, plasticity, hardening mechanisms, creep and fracture, electron microscopy, composite materials.

EMA 5514. Optical and Electron Microscopy (3). Prerequisite: EML 3234 or permission of instructor. Fundamentals and techniques of optical and electron microscopy as applied to the determination of physical, chemical, and structural properties of materials and materials behavior in practice.

EML 5060. Analysis in Mechanical Engineering (3). Prerequisite: Graduate standing in mechanical engineering. Familiarizes the student with methods of analysis in mechanical engineering. Surveys applications of integration and series, ordinary and partial differential equations, and linear algebra.

EML 5072. Applied Superconductivity (3). Prerequisites: EEL 3472, EGM 3520, EML 3100, 3234; PHY 3101. Introduction to superconductivity for applications, fundamentals of the superconducting state, transport current and metallurgy of superconductors, superconducting electrons and magnets, system engineering.

EML 5152. Fundamentals of Heat Transfer (3). Prerequisite: Graduate standing in mechanical engineering. An introductory course in basic heat transfer concepts. Topics include conduction and heat diffusion equation, forced and free convection, radiative heat transfer, boiling heat transfer, and condensation.

EML 5155. Convective Heat and Mass Transfer (3). Prerequisites: EML 5152, EGM 5810. Familiarizes the student with meth ods to evaluate a convection heat transfer coefficient and a mass transfer coefficient for a variety of engineering applications. Evaluation of the driving force in mass transfer and combined problems.

E**ML 5162. Cryogenics** (3). Prerequisites: EML 3100, 3140, 3701; PHY 3101. Fundamental aspects of cryogenics system and engineering properties of materials and fluids at low temperatures. Cryogenic heat transfer and fluid dynamics, low temperature refrigeration and system engineering.

EML 5311. Design and Analysis of Control Systems (3). Prerequisite: MAP 3306. Mathematical modeling of continuous physical systems. Frequency and time domain analysis and design of control systems. State variable representations of physical systems.

EML 5317. Advanced Design and Analysis of Control Systems (3). Design of advanced control systems (using time and frequency domains) will be emphasized. Implementation of control systems using continuous (operational amplifier) or digital (microprocessor) techniques will be addressed and practiced.

EML 5361. Multivariable Control (3). Prerequisite: EML 4312 or 5311. Course covers H2 and H control design for linear systems with multiple inputs and multiple outputs and globally optimal techniques, fixed-structure (e.g., reduced-order) techniques. Includes introductory concepts in robust control.

E**ML 5422 - Fundamentals of Propulsion Systems (**3) . Prerequisite: Graduate standing in mechanical engineering. This course offers an analysis of the performance of propulsion systems using fundamental principles of thermodynamics, heat transfer, and fluid mechanics. Systems studied include turbojet, turbofan, ramjet engines, as well as piston-type internal combustion engines.

EML 5451. Energy Conversion Systems (3). Prerequisites: EML 3101, 3140, 3701. Investigation of such energy conversion systems as the internal combustion engine, compressors and turbines, gas turbines, nuclear power plants, garbage burning power plants, solar, wind, geo-thermal and electrical systems.

EML 5537. Design Using FEM (3). The Finite Element Method - what it is, elementary FEM theory, structures and elements, trusses, beams, and frames, two-dimensional solids, three-dimensional solids, axisymetric solids, thin-walled structures, static and dynamic problems, available hardware and software, basic steps in FEM analysis, pre/post processing, interpretation of results, advanced modeling techniques, design optimization, advanced materials using FEM.

EML 5543. Materials Selection in Design (3). Prerequisite: EML 3234 or equivalent. The application of materials predicated on material science and engineering case studies covering most engineering applications.

EML 5709. Fluid Mechanic Principles with Selected Applications (3). Prerequisites: EML 5060; EGM 5611, and graduate standing in mechanical engineering. Introductory concepts, description, and kinematical concepts of fluid motion, basic field equations, thermodynamics of fluid flow, Navier-Stokes equations, elements of the effects of friction and heat flow, unsteady one-dimensional motion, selected nonlinear steady flows.

EML 5710. Introduction to Gas Dynamics (3). Prerequisites: EML 3101, 3701. Concentrates on the unique features of compressibility in fluid mechanics. It provides the student with knowledge and understanding of the basic fundamentals of compressible fluid flow and is basic to studies in high-speed aerodynamics, propulsion, and turbomachinery.

EML 5725. Introduction to Computational Fluid Dynamics (3). Prerequisites: EML 5709, EGN 5456. Topics for this course include introduction to conservation laws in fluid dynamics; weak solutions; solving the full potential equations for subsonic, transonic, and supersonic flows; solving system of equations. In particular, upwind schemes and flux splitting will be introduced in solving the Euler equations. Coordinate transformation and grid generation methods will also be covered.

EML 5802. Introduction to Robotics (3). Prerequisite: Graduate standing in mechanical engineering. A study of the fundamentals of robot operation and application including: basic elements, robot actuators and servo-control, sensors, senses, vision, voice, microprocessor system design and computers, kinematic equations, and motion trajectories.

EML 5831 - Introduction to Mobile Robotics (3). Prerequisite: Graduate standing. This course examines analytical dynamic modeling and dynamic simulation of mobile robots, mobile robot sensors, basic computer vision methods, Kalman filtering and mobile robot localization, basic mapping concepts, path planning and obstacle avoidance, and intelligent-control architectures.

EML 5905r. Directed Individual Study (1-6). (S/U grade only.) Prerequisite: Instructor consent. May be repeated to a maximum of twelve (12) semester hours.

EML 5910r. Supervised Research (1-6). (S/U grade only.) A maximum of three (3) semester hours may apply to the master's degree. May be repeated to a maximum of six (6) semester hours.

EML 5930r. Special Topics in Mechanical Engineering (1-6). Prerequisite: Instructor consent. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor. May be repeated to a maximum of twelve (12) semester hours.

EML 5930 - Advanced Engineering Thermodynamics (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Advanced Materials (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Analysis in Mechanical Engineering II (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Experimental Methods in Nanoscale Science and Engineering (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 - Magnet Design (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 – Magnet Technology (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 – Robotics and Locomotion (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5930 – Vehicle Design (3). Prerequisite: Instructor permission. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor.

EML 5935r. Mechanical Engineering Seminars (0). (S/U grade only.) May be repeated to a maximum of ten times.

EML 5946r - Professional Internship Experience in Mechanical Engineering (4). This course provides practical experience through working as an intern at selected industry or research laboratories supervised by the on-the-job mentors and by the Department of Mechanical Engineering. The course is designed to provide the student with professional internship experience in preparation for his/her future career development.

EML 5971r. Thesis (3-6). (S/U grade only.) A minimum of six (6) semester hours is required.

EML 6980r. Dissertation (1-12). (S/U grade only.) May be repeated to a maximum of forty-eight (48) semester hours.

EML 8968. Preliminary Doctoral Examination (0). (S/U grade only.)

EML 8976r. Master's Thesis Defense (0). (S/U grade only.)

EML 8985r. Dissertation Defense (0). (S/U grade only.) May be repeated to a maximum of three times.

School of Allied Health Sciences

About the School of Allied Health Sciences

The School of Allied Health Sciences (SOAHS) is one of three health professional schools at Florida Agricultural and Mechanical University (FAMU). The school was established in recognition of the need to provide access to quality education in a group of rapidly growing health professions. The school is divided into five divisions: Cardiopulmonary Science, Health Care Management, Health Informatics and Information Management, Occupational Therapy (which offers a Health Science–Pre-Occupational Therapy concentration) and Physical Therapy (which offers a Health Science–Pre-Physical Therapy concentration).

Since its start in 1982, SOAHS has experienced continuous involvement in education, practice and research that has contributed to the strong reputation of each academic division within the school. Each division is accredited by its respective accrediting body. Overall, FAMU ranks as the number one producer of African-American allied health professionals in the State of Florida. SOAHS has been successful in attracting substantial extramural funding, and it has received over $4 million from the Department of Health and Human Services to support programs designed to increase the number of minorities and other underrepresented persons in the allied health professions. After completing their degree requirements, highly trained professionals assume leadership roles in their discipline throughout the state and nation.

SOAHS Mission

The mission of the School of Allied Health Sciences is to provide an enlightened and enriched academic, intellectual, moral, cultural, ethical, technological, and student-centered environment for the purpose of educating individuals to become competent allied health professionals who are capable of: Complex critical thinking; Comprehensive communication skills; Interdisciplinary collaboration; Analysis and involvement in research processes; Improving the health status of under-represented and underserved populations; Lifelong learning.

SOAHS Vision Statement

The School of Allied Health Sciences as an exemplary health professions entity within Florida A&M University will provide the highest quality academic experiences at graduate and undergraduate levels, through excellence in student advising, teaching, research and service, in existing and emerging health care arenas, for the benefit of the citizens of Florida, the nation and the world.

SOAHS Core Values

The SOAHS core values are: scholarship; ethics; excellence; openness; collaboration; diversity; service; fairness; integrity; respect; collegiality; freedom; fiscal responsibility; accountability; courage; and honesty.

Degree Listing

- Cardiopulmonary Science: BS
- Health Care Management: BS
- Health Administration: MHA
- Health Informatics and Information Management: BS
- Health Sciences (Concentrations: Pre-Occupational Therapy and Pre-Physical Therapy): BS
- Occupational Therapy: MSOT
- Physical Therapy: DPT

Program Requirements

Admissions Qualifications

The School of Allied Health Sciences is comprised of five professional programs and two generalist programs.

Admission to the professional programs in the School of Allied Health Sciences is a two-step process. Undergraduate applicants must first be accepted by the university and then must apply for admission to the professional division of his or her choice. Admission to the university does not guarantee acceptance into any of the professional divisions. Graduate level applicants must submit an application to the professional division as well as to the School of Graduate Studies and Research. The requirements and procedures necessary for admission to the university are outlined under the heading Special Admissions, Requirements of Colleges and Schools.

A student seeking admission to a professional division in the School of Allied Health Sciences must have completed all admission requirements by the designated deadlines, as prescribed by each division.

Admission to a professional division in the School of Allied Health Sciences is based on an applicant's selection by the appropriate admissions committee. Selection will be based on the evaluation of a number of factors such as, the student's overall grade point average, grade point average in required science courses, work experiences, grade trends, leadership activities, demand for manpower, and mission of the university. A personal interview may be required. **Consult each individual program for specific admission criteria.**

Completion of pre-professional courses does not guarantee admission to the professional divisions.

The professional curriculum is composed of all courses and clinical experiences required to satisfy specific program requirements for graduation. Undergraduate students must earn a minimum grade of "C" in all required courses. *Graduate students must maintain a "B" average (3.0 GPA) ** Curriculum development is an ongoing process designed to keep pace with an ever-changing society and profession. Upon completion of curricula in the programs of cardiopulmonary science, health administration, health care management, health informatics and information management, health

sciences, occupational therapy or physical therapy, a student will receive the designated undergraduate or graduate degree in the respective discipline.

***Please consult the section on the "School of Graduate Studies and Research" and the Graduate Student Handbook for progression requirements. ** The school may implement curricular changes which are required not only of incoming students, but also for currently enrolled students.**

Policies

1. Dress Code- The student is required to adhere to a dress code, as determined by each of the divisions of the school. Faculty members will enforce this code in the classroom, laboratory, and during clinical experiences, as an integral part of professional socialization of health professionals. The student has a responsibility to adhere to the dress code of other colleges and schools where appropriate.

2. Excused Absence- The student is required to obtain, complete and submit an excused absence request form when a class absence has occurred. The request form must be completed and submitted along with appropriate supporting documentation within five days of the student return to class or campus. The approved excused absence is effective only until the expiration date.

3. Emergency Medical/Illness Policy- When an individual experiences any sudden, unexpected and unexplainable change in the physical or emotional condition of a student or faculty, which directs attention away from academic matters such as collapsing, vomiting, persistent moaning and noisy distractions during class, immediately make the student or faculty member comfortable, call 911, call campus police, and dean's office using a cell phone or office phone if available. The campus emergency numbers will be in each classroom. Procedures are available in the office of the dean.

4. Disruption of the Academic Process Policy- The disruption of the academic process is the act and/or words of a student in a classroom or teaching environment which are deemed unreasonable in the estimation of a faculty member that directs attention away from academic matters such as noisy distractions; persistent, disrespectful or abusive interruptions of lecture, examinations or discussions; or presents a danger to the health and safety of the faculty member or other students. Procedures are available in the office of the dean.

5. Academic Honesty Policy- This policy applies to any student who gives or takes information or material and wrongfully uses it to aid himself/herself or another student in academic endeavors. It shall further include receiving unauthorized written or oral information from a fellow student. Stealing, buying, selling or referring to unauthorized written, oral or electronic information is also included. Procedures are available in the office of the dean.

6. Sequence of Courses- The student is expected to enroll in and complete courses in sequence, adhering at each point to all prerequisites. It is essential that the student keeps up with the progression of his or her course of study in order to stay in proper sequence to complete requirements on schedule. No student is allowed to take courses out of sequence or without completing prerequisites; nor is the student permitted to enroll in an advanced level of sequential courses without having completed the lower level course(s). Any exceptions to the rules above must be approved by the division director and the dean.

7. Appeal and Academic Grievances- Any decision affecting the status or academic standing of applicants for admission or students enrolled in any School of Allied Health Sciences programs may be appealed. Procedures of appeals and grievances are available in the office of the dean.

8. Clinical Experiences- The five professional divisions in the School of Allied Health Sciences have as part of their academic requirements a clinical experience in their particular discipline. The experiences vary in length and frequently occur away from the university site in Tallahassee. Prior to the start of clinical assignments, students must submit to, pay for, and pass background (criminal) checks, drug screening and fingerprinting. By title and function, a faculty member in each division coordinates clinical experiences. Each student is expected to assume responsibility for cost associated with clinical experiences.

9. Immunization- To qualify for admission to School of Allied Health Sciences programs, all students must submit documentation proving immunization against rubeola and rubella. Please call the Student Health Center (Clinic) at (850) 599-3777. No student will be allowed to register until this documentation has been submitted. All students in the cardiopulmonary science, occupational therapy, and physical therapy programs must have proof of prior vaccination, immunity to or be vaccinated for hepatitis B at their own expense prior to the time of enrollment.

10. Graduation Competency- The School of Allied Health Sciences administration and faculty recognize their responsibility to graduate only the student whom they judge to be ready to accept the challenges of the allied health professions academically, ethically, and professionally and having met degree requirements. Consequently, the dean of the School of the Allied Health Sciences, upon recommendation of the faculty of the respective division, reserves the right to withhold the recommendation for graduation of any student who does not conform to these expectations.

Division of Cardiopulmonary Science

Pre-Professional Program

Cardiopulmonary science, also known as respiratory care, is an allied health profession whereby professionals are identified as respiratory therapists who provide for the diagnosis, treatment, management, preventive care, and rehabilitation of patients with cardiopulmonary abnormalities.

Patients who have asthma, chronic bronchitis, emphysema, cystic fibrosis, and coronary heart disease are commonly seen by respiratory therapists. The respiratory therapist works with patients in the critical care unit, emergency department, newborn nursery, outpatient clinic, critical care transport, home care, and alternate care centers.

Working with physicians and other health professionals, respiratory therapists assess the health status of clients, manage complex diagnostic and life support systems, maintain sophisticated monitoring devices, and routinely administer medications, as well as other procedures.

Note: Florida A&M University changed the program name from respiratory therapy to cardiopulmonary science in 1998.

Faculty
Director: Simmons, Mary
Director of Clinical Education: Woods, Kandy
Medical Director: Saint, David

Curriculum—The curriculum in cardiopulmonary science is designed to prepare students to become registered respiratory therapists. The curriculum is divided into two phases: a pre-professional curriculum and a professional curriculum. The professional phase consists of classroom, laboratory, and clinical experiences. The curriculum is structured to provide the necessary knowledge and clinical competence requisite to entry-level license and eligibility to registry credentials. All courses and comprehensive examinations in the professional phase must be passed in sequence with a "C" grade or better and/or acceptable score. Comprehensive examinations must be successfully completed to graduate.

Admission Process---To apply for admission into the professional curriculum, a grade of "C" or better is required in all pre-professional courses. Candidates must complete a Division of Cardiopulmonary Science application and 16 hours of clinical observation and inquiry to be considered and accepted for admission into the professional curriculum.

Clinical Education—The clinical education experience begins in the second semester of the professional curriculum. In this phase of the program, the student is expected to adhere to the curriculum, clinical policies and hospital regulations. Students are required to pay for and clear criminal background and finger print screening. Students are responsible for the purchase of uniforms and accessories needed as part of the educational experience.

Professional Credentials—A Bachelor of Science degree in cardiopulmonary science is awarded upon completion of the curriculum. Graduates are eligible to apply for the Florida Respiratory Care Practitioner License and/or Entry-Level Examination administered by the National Board for Respiratory Care (NBRC). Successful candidates will be eligible to apply for the Registry Examinations also administered by the NBRC.

Accreditation---The CPS Program is accredited by the Commission on Accreditation for Respiratory Care (CoARC). CoARC #200321

Commission on Accreditation for Respiratory Care
1248 Harwood Road
Bedford, Texas 76021-4244
(817) 283-2835

Cardiopulmonary and Respiratory Links
•Respiratory therapist and the profession: http://www.aarc.org/career/
•American Association for Respiratory Care Links: http://www.aarc.org/links/links.asp
•Florida Society for Respiratory Care: http://www.fsrc.org/
•Promoting Heart and Lung Health: http://www.aacvpr.org/
•Accreditation of Respiratory Therapist Programs: Commission on Accreditation for Respiratory Care: http://www.coarc.com/
•Credentialing and Licensure of Respiratory Therapists: http://www.nbrc.org
•Honor Society for the Respiratory therapy profession: http://www.nbrc.org/Lambda/default.htm
•American Heart Association: http://www.americanheart.org/presenter.jhtml?identifier=1200000
•Animated Lungs and Tutorials on the Cardiovascular System: http://www.innerbody.com
•About Lung Health: http://www.yourlunghealth.org/
•Lung Photographs: http://www.quitsmokingsupport.com/lungphotos.htm
•How Lungs and Sleep works: http://science.howstuffworks.com/sleep.htm
Official CoARC Communication - Outcomes Data Published: http://www.coarc.com/47.html

The following courses, or acceptable equivalent courses, must be completed prior to entering the division as a major in cardiopulmonary science. "The asterisk (*) indicates the course is a state common prerequisite. Substitutes indicated in the state Common Prerequisite Manual at www.facts.org will be accepted."

Pre-Professional Program

Freshman Year

Fall Semester	**Sem. Hrs.**
AMH 2010 OR AMH 2020 U. S. History	3
BSC 1010 Biological Sciences with Lab*	4
CHM 1030 Introductory Chemistry for Health Sciences with Lab OR CHM 1045 General Chemistry 1 with Lab	4
ENC 1101 Freshman Communicative Skills I	3
MAC 1105 College Algebra	3
Total	**17**

Spring Semester	**Sem. Hrs.**
AMH 2091 Introduction to African American History	3
CHM 1031 Chemistry for Health Sciences with Lab or CHM 1046 General Chemistry II with Lab	4
ENC 1102 Freshman Communicative Skills II	3
HSC 1100 Health for Modern Living	3
MAC 1114 Algebraic and Trigonometric Functions	3
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
BSC 2093 Anatomy and Physiology I with Lab*	4
SPC 1050 Foundation of Speech*	3
PSY 2012 Introduction to Psychology	3
HSC 1000 Orientation To Health Science	1
HUM 2230 Historical Survey	3
Total	**14**

Spring Semester	Sem. Hrs.
BSC 2094 Anatomy and Physiology II with Lab*	4
HSC 3531 Medical Terminology	3
PHY 2053 College Physics with Lab*	4
CGS 1160 Introduction to Microcomputers	3
Total	**14**

Summer Semester	Sem. Hrs.
MAN 3025 Principles of Management	3
STA 2023 Introduction to Probability and Statistics	3
MCB 3005 Microbiology (with Lab)* OR	
PHA 3751 Medical Microbiology and Immunology (with Lab)	4
Total	**10**

Pre-Professional Curriculum Total Credits	**71**

Professional Curriculum

Junior Year

Fall Semester	Sem. Hrs.
RET 3493 Health Assessment and Intervention I (with Lab)	4
RET 3495 Integration of Structure and Function of Human Systems	4
RET 4354 Medical Therapeutic Agents	4
Total	**12**

Spring Semester	Sem. Hrs.
RET 3034 Cardiopulmonary Assessment with Lab	4
RET 3884 Clinical Process and Intervention I.	4
HSA 3110 Organization and Administration of Health Facilities	3
RET 4294 Cardiopulmonary Pathophysiology	2
Total	**13**

Summer Semester	Sem. Hrs.
RET 3268 Critical Health Assessment and Interventions with Lab	4
RET 3885 Clinical Process and Critical Interventions II	4
RET 4930 Professional Seminar, Cardiopulmonary Science	1
Total	**9**

Senior Year

Fall Semester	Sem. Hrs.
RET 4618 Advanced Practicum in Cardiopulmonary Science	3
RET 4886 Clinical Process and Critical Interventions III	4
RET 4717 Neonatal and Pediatric Respiratory Therapy with Lab	5
Total	**12**

Spring Semester	Sem. Hrs.
RET 4887 Clinical Process and Critical Interventions IV	4
RET 3419 Diagnostics and Non-Traditional Health Care Delivery with Lab	4
RET 4616 Advanced Seminar in Cardiopulmonary Science	2
Total	**10**
Professional Curriculum Total Credits	**56**
Total Credits	**127**

Foreign Language Requirement

Prior to graduation, all students must have documentation showing completion of the foreign language requirement: two (2) years of the same language or American Sign Language taken in high school or eight semester hours at an accredited undergraduate institution.

Course Descriptions

RET 3034 Cardiopulmonary Assessment and Interventions (3, 1) Prereq: RET 3493. RET 3495, Coreqs: RET 3884. RET 4930. Pathophysiology is integrated with problem-oriented activities. Client/Patient assessment skills, interpretation of clinical data, and intermediate interventions for acute and chronic illnesses are structured.

RET 3268 Critical Health Assessment and Interventions (3, 1) Prereq: RET 3034, RET 4294, RET 3884. Coreq: RET 4930, RET 3885. Integration of pathophysiology with advanced clinical assessment and intervention skills is conducted. Cardiorespiratory monitoring and critical care interventions are presented in forms of problem oriented activities.

RET 3419 Diagnostics and Non-Traditional Health Care Delivery (3,1) Prereq: RET 4618, RET 4886. Coreqs: RET 4616. RET 4887. Theoretical concepts or cardiorespiratory diagnostics and data interpretation are presented. Disease prevention, rehabilitation and home care and nontraditional health care delivery settings are also emphasized.

RET 3493 Health Assessment and Interventions (3, 1) Prereq. BSC 2093, BSC 2094. An introduction to clinical problem-solving and the respiratory care profession are presented. Principles of health prevention and assessment, interpretation of clinical data and basic therapeutic interventions are emphasized.

RET 3495 Integration of Structure and Function of Human Systems (4) Prereq: BSC 2093. BSC 2094, MCB 3005, PHY 2053 Emphasizes organizational control and function of the human body, homeostatic mechanisms, and evaluation of functional balance. Emphasis is placed on presentations of physiologic principles of metabolism.

RET 3884 Clinical Process and Interventions I (4) Prereq: RET 3493, RET 3495. Coreq: RET 3034, RET 4294. Interpersonal interactions practice or fundamental assessment and interventions are integrated with case presentations, clinical problem-solving activities, and selected clinical simulations.

RET 3885 Clinical Process and Critical Interventions II (4) Prereq: RET 3884, RET 3034. Coreq: RET 3268. Interpersonal interactions, practice of intermediate assessment and interventions are integrated with case presentations, clinical problem-solving activities, clinical conferences and clinical simulations.

RET 4294 Cardiopulmonary Pathophysiology (2) Prereq: RET 3493, RET 3495. RET 4354. Coreq: RET 3034, RET 3884. Etiology, pathophysiology, and management of selected respiratory diseases are approached from a pulmonary medicine prospective.

RET 4354 Medical Therapeutic Agents (4) Coreq: RET 3493, RET 3495. Principles or medical physiology, biological and synthetic substances, mechanisms of action, and therapeutic evaluation applied to respiratory medicine. Mathematics of drugs and solutions, federal and state regulations are also emphasized.

RET 4616 Advanced Seminar in Respiratory Therapy (2) Pre req: RET 3034, RET 3495, RET 3885. Concepts fundamental to entry-level into respiratory care are examined. In addition, topics on entry-level competence, health organizations, legal, ethical, socioeconomic issues relative to respiratory care and research are

presented.

RET 4618 Advanced Practicum in Respiratory Therapy (3) Prereq: RET 4618, RET 4717 Emphasis is placed on research in respiratory care, health related organizations, principles and practice of respiratory care education, supervision and management of respiratory care services. Organizational, political and economic aspects of health outcomes assessment are studied.

RET 4717 Neonatal and Pediatric Respiratory Therapy (4, 1) Prereq: RET 3495, RET 4294, RET 4886; Coreq. RET 4886. Assessment, pathophysiology and interventions of selected cardiopulmonary diseases common to neonatal and pediatric critical care patients are presented.

RET 4886 Clinical Process/Diagnostics and Interventions III Health Care Delivery (4) RET 388, RET 4616. Coreq: RET 4618. Interpersonal interactions, practice of advanced diagnostics and intervention skills are integrated in non-traditional and home care settings. Emphasis is placed on epidemiological psychosocial, environmental assessments and economical aspects of care.

RET 4887 Clinical Process and Interventions IV (4) Prereq: RET 4618, RET 4886; Coreq. RET 3419. Interpersonal interactions, practice of advanced diagnostics and health interventions in specialty areas are integrated with clinical problem-based learning activities.

RET 4906 Directed Individual Study Var. (1-10) Independent study/research in professional area of interest with appropriate supervision is conducted.

RET 4930 Professional Seminar Respiratory Therapy (1) Prereq. RET 3034, RET 4294. Practical experiences on professional competence beyond entry-level, management of respiratory care services, respiratory therapy education, and research are emphasized.

DIVISION OF CARDIOPULMONARY SCIENCE
ALTERNATE COURSE LISTING
Lower Division Courses

Course	Alternative
AMH 2091	AMH 3571, AMH, 3572, AFA 3104, AFA 3571, AFA3572
BSC 1010 w/Lab	BSC 1011 w/Lab
BSC 2093 w/Lab	PCB 3723 w/Lab
BSC 2094 w/Lab	HSC 3501, PCB 3723 w/Lab
CGS 1160	CIS 1920, CGS 2120, CDA 3101
CHM 1030 w/Lab	CHM 1045 w/Lab, CHM 2210 w/Lab
CHM 1031 w/Lab	CHM 1046 w/Lab, CHM 2211 w/Lab
ENC 1101	NO SUBSTITUTION
ENC 1102	NO SUBSTITUTION
HSC 1000	NO SUBSTITUTION
HSC 1100	HSC 2400, HSC 3200, HSC 3107
HSC 3531	NO SUBSTITUTION
HUM 2211	Any university approved humanities/ social science course
MAC 1105	MAC 1114, MAC 1147
MAC 1114	MAC 1147, MAC 2311
MAN 3025	NO SUBSTITUTION
MCB 3010	MCB 3005, PHA 3751
PHY 2053	w/Lab PHY 2054 w/Lab
PSY 2012	CYP 3003, SOC 2012, SOP 3003
SPC 2608	SPC1017
STA 3023	PHA 3713, PSY 3204

DIVISION OF CARDIOPULMONARY SCIENCE
ALTERNATE COURSE LISTING
Upper Division Courses

Course	Alternative
RET 3483 w/Lab	NO SUBSTITUTION
RET 3485	NO SUBSTITUTION
RET 4350	NO SUBSTITUTION
RET 3874	NO SUBSTITUTION
RET 3034 w/Lab	NO SUBSTITUTION
HSA 3110	NO SUBSTITUTION
RET 4294	NO SUBSTITUTION
RET 3264 w/Lab	NO SUBSTITUTION
RET 3875	NO SUBSTITUTION
RET 4930	NO SUBSTITUTION
RET 3418 w/Lab	NO SUBSTITUTION
RET 4876	NO SUBSTITUTION
RET 4714 w/Lab	NO SUBSTITUTION
RET 4616	NO SUBSTITUTION
RET 4877	NO SUBSTITUTION
RET 4618	NO SUBSTITUTION

Division of Health Care Management
Bachelor of Science in Health Care Management

The health care industry is the largest and fastest growing industry in this country. According to employment forecasters, over the next decade eight of ten fastest growing career fields will be in health services occupations.

Health care management is a profession which utilizes administrative and managerial principles and concepts to direct the allocation of resources and delivery of services in health care organizations. Health care managers perform the same functions as managers in any other industry or field. Health care managers plan, direct, organize, control, and coordinate the resources of health care organizations. As integral members of the health profession, health care managers are responsible for working with the board of directors to create the best possible working environment for the medical staff, nurses, therapists and other clinical professionals who provide direct health care services. Additionally, they ensure that health care is provided in a cost-effective and humane manner.

The primary mission of the Division of Health Care Management is to provide comprehensive undergraduate and graduate education in health care management. The Bachelor of Science (B.S.) degree program seeks to develop an understanding of the complex interaction of economic, financial, political and social factors affecting the management and delivery of health care services. Upon graduation, students are prepared for entry-level positions in a variety of private and public settings in healthcare.

The baccalaureate degree program in health care management has full certified undergraduate status with the Association of University Programs in Health Administration (AUPHA). Hence, the program has met the accreditation standards of the AUPHA Undergraduate Program Review Committee. The concentration in long-term care administration is certified by the Florida Department of

Business and Professional Regulations and the Florida State Board of Nursing Home Administrators.

Association of University Programs in Health Administration (AUPHA)
2000 14th Street, North
Suite 780
Arlington, VA 22201
(703) 894-0940
www.aupha.org

Faculty
Associate Professors: Davis-Weaver, Juliet; Lewis, Marisa; Perryman, Martha
Assistant Professors: Audi, George; Beck-Jones, Juanda
Visiting Professor: Woodley, Pia

Admissions Process

Admission to the health care management degree program is a two-step process. Students must be accepted to the university. Then, during the last semester of their sophomore year, students must apply for acceptance into the professional phase of the program. Admission to the university does not guarantee acceptance into the professional program. Eligibility to enter the professional program includes a grade of "C" or better in the following state common prerequisites, pre-professional courses: ACG 2021, ACG 2071, ECO 2013/ECO 2023, STA 2023, CGS 2060, and a minimum GPA of 2.0. The application requires a college transcript (s), resume, two letters of reference, criminal background check and possibly an interview with the admissions committee.

Curriculum

The B.S. degree program is a 120-credit hour course of study designed to be completed in four years. The professional curriculum includes an in-depth study of topics such as the health care system, financial management, organizational behavior and management practice, strategic health planning, health policy, quality management and critical health issues.

Internship Experience—An essential component of the academic experience is a 13-week field practicum. The administrative internship serves as a "bridge" between concepts, theories and practice. It integrates course work with a supervised practicum experience and allows the student to explore an area of special interest. Criminal background check clearance is required for internship placement.

Pre-Professional Curriculum
Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
MAC 1105 College Algebra OR any higher level Math Course	3
BSC 1005 Biological Science	3
HUM 2211 Historical Survey I OR Any Approved Humanities Course	3
HSC 1000 Orientation to the Health Sciences	1
Total	**13**

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communication Skills II	3
PSC 1121 Introduction to Physical Science with Lab	4
*ACG 2021 Financial Accounting Principles	3
SPC 2608 Public Speaking OR SPC 1017 Foundation of Speech	3
Total	**13**

Sophomore Year

Fall Semester	**Sem. Hrs.**
*ECO 2013/ECO 2023 Principles of Economics	3
PHI 2010 Introduction to Philosophy OR PHI 2101 Intro. to Logic OR PHI 3601 Ethics	3
*ACG 2071 Managerial Accounting Principles	3
AMH 2010 United States History OR AMH 2020	3
PSY 2012 Introduction to Psychology OR SYG 2000 Introduction to Sociology	3
Total	**15**

Spring Semester	**Sem. Hrs.**
AMH 2091 Introduction to African-American History, OR AFA 3104 The African American Experience	3
*CGS 2060 Computer Literacy OR MAN 2543 Introduction to Business Systems	3
POS 2041 American National Government OR POS 2001 Introduction to Political Science	3
*STA 2023 Introduction to Probability and Statistics I	3
Total	**12**
Pre-Professional Total Credit Hours	**53**

Professional Curriculum
Junior Year

Fall Semester	**Sem. Hrs**.
HSA 3110 Organization and Administration of Health Care Facilities	3
HSC 3531 Medical Terminology	3
MAN 3025 Principles of Management	3
HSA 3170 Financial Management in Health Care	3
HSC 3930 Professional Development I	1
MAR 3023 Principles of Marketing	3
Total	**16**

Spring Semester	**Sem. Hrs.**
HSA 3140 Approaches to Healthcare Strategic Planning	3
HSA 3180 Health Care Management Theory and Practice	3
MAN 4301 Personnel Management	3
HSA 3225 Introduction to Long-term Care	3
HSC 3931 Professional Development II	1
HSA 4191 Information Systems Management in Health Care	3
Total	**16**

Summer	**Sem. Hrs.**
HSA 4850 Health Care Management Practicum/Internship	6
Total	**6**

Senior Year

Fall Semester	**Sem. Hrs.**
HSA 3430 Health Care Economics	3
HSA 4700 Health Care Research	3
HSA 4383 Quality Improvement in Healthcare Organizations	3

HSC 4930 Professional Development III	1
HSC 3640 Health Law	3
Total	**13**

Spring Semester	**Sem. Hrs.**
HSC 4634 Critical Health Issues	3
HSC 4202 Public and Community Health	3
HSA 4150 Health Policy and Politics	3
HSC 4931 Professional Development IV	1
MAN 4240 Organizational Behavior	3
HSA 4922 Capstone: Health Care Management	3
Total	**16**
Professional Curriculum Total Credit Hours	**67**
Total Semester Hours	**120**

*State common prerequisite. Substitutes indicated in the state Common Prerequisite Manual at www.facts.org will be accepted. Must successfully complete these courses with a grade of "C" or higher.

Foreign Language Requirement

Prior to graduation, all students must have documentation showing completion of the foreign language requirement: two (2) years of the same language or American Sign Language taken in high school or eight semester hours at an accredited undergraduate institution.

Long-term Care Administration Concentration

In order to fulfill the requirements of the long-term care administration concentration, a student majoring in health care management must, in addition to completing the general curriculum, complete the following courses with a minimum "C" grade:

HSA 3220 Long-term Care Management
HSA 4183 Applied Management in Long-term Care
SYP 4730 Aging America
SYO 3400 Medical Sociology

Rehabilitation Services Administration Concentration

In order to fulfill the requirements of the rehabilitation services administration concentration, a student must complete all of the following courses with a minimum "C" grade:

RCS 3030 Introduction to Rehabilitation
RCS 3700 Disability and Society
RCS 4060 Psychological Aspects of Disability
RCS 4200 Introduction to Vocational Evaluation
RCS 4610 Supervision and Coordination of Vocational Rehabilitation

Approved Electives

Any course in either concentration will qualify for elective credit. In addition, the courses listed below are approved for elective credit:

MAN 3701 Business Ethics
MAN 4810 Systems Theory and Designs

Course Descriptions

HSA 3110 Organization and Administration of Health Care Facilities (3) An overview of the health care delivery systems in the United States. Designed to acquaint beginning health care management students with social, political, economic, demographic, and technological forces that shape the structure, operation, and outcomes of the U.S. health care system. Division approval required.
HSA 3140 Approaches to Healthcare Strategic Planning (3) Prereq: MAN 3025 and HSA 3110. Co-requisites: HSA 3170 and HSA3180 - Theories, methodologies, practices in health planning, institutional strategic planning, and health marketing. Division approval required.
HSA 3170 Financial Management in Health Care (3) Prerequisites: ACG 2021; ACG 2071. Managerial financial management of health care institutions relating to acquisition, planning, budgeting, and control of funds to meet organizational objectives. Division approval required.
HSA 3180 Health Care Management Theory and Practice (3) Prerequisites: MAN 3025, HSA 3110. Corequisite: HSA3140. An in depth examination of the application of management and organizational theory and concepts in health care institutions. Division approval required.
HSA 3220 Long Term Care Administration (3) Prereq: HSA 3110; HSA 3225. Theory, philosophy and behavior of administration and management of long-term care facilities. Emphasis placed on the role of long-term care administrators relative to general management, personnel management, financial management, marketing, laws and regulatory codes, and patient care. Division approval required.
HSA 3225 Introduction to Long-Term Care (3) Provides a basic orientation to the long-term care continuum, including both nursing homes and non-institutional alternatives such as home health agencies, adult day care centers, and retirement homes. It examines the long-term care needs of the elderly and the public policy responses to those needs. Regulatory, environmental health and safety, and licensure requirements are discussed.
HSA 3430 Health Economics (3) Prereq: ECO 2013; HSA 3110. Examinations of economic mechanisms of the health care industry, health policy, payment methods, national health insurance, economic efficiency, cost effectiveness, and benefit-cost analysis. Division approval required.
HSA 4150 Health Policy and Politics (3) Prereq: POS 2041; HSA 3110. Analytic and descriptive study of health policy and politics in the United States in terms of philosophy, history, economics, and administration of health care. Emphasis on how policy affecting health care delivery is generated, promoted, opposed, adopted, and implemented. Division approval required.
HSA 4183 Applied Management in Long-Term Care (3) Prereq: HSA 3225 HSA 3110, HSA 3180, HSA 3220. Students take part in an in-depth discussion, research, and case studies of management, organizational, and operational problems in long-term care institutions. Division approval required.
HSA 4191 Information Systems Management in Healthcare (3) Prereq: HSA 3110; CGS 2060. An introduction to the use of health information systems with a focus on technology and char-

acteristics of information systems in health care settings. Various applications for information systems in health care management will be discussed.

HSA 4383 Quality Improvement in Healthcare Organizations (3). Prereq.: HSA 3110 and HSA 4191. Foundations of quality focus on patient satisfaction and provision of quality care. Emphasis will be placed on the need for incremental measures of quality care. Additionally, formal quality assessment procedures, regulatory agencies and schools of thought on quality management will be reviewed. Division approval required.

HSA 4700 Health Care Research (3) Prereq: CGS 2060 or MAN 2812; STA 2023; HSA 3110. An introduction to research design with emphasis on application of techniques to address questions of concern to the health care systems and health care managers. The design of a manageable research proposal is required. Division approval required.

HSA 4850 Health Care Management Practicum (6) Prereq: All pre-professional courses and : HSA 3110; HSA 3170; MAN 3025; HSC 3930; HSC 3931; HSA 3140; HSA 3180 and HSA 3225 for students completing the long-term care concentration. A 13-week practicum designed to give students direct experience in various health care settings. Criminal background clearance is required. Division approval required.

HSA 4922 Capstone: Health Care Management (3). Prereq: All pre-professional courses, pre-internship courses and HSA 3110, HSA 3170, HSA 3140, HSA 3180, HSA 4191, HSA4383, HSA4700, HSA 4850, MAR 3023 and MAN 3025. This capstone course is designed to enable students to integrate knowledge and skills derived from prior coursework to address current management issues in health care. Division approval required.

HSC 1000 Orientation to Health Sciences (1) A survey of the health care professions and organizations.

HSC 3640 Health Law (3) Prereq: HSA 3110. Introduction to the legal system, specifics and legal implications of health related legislation and programs, and medical malpractice, labor law, and informed consent to treatment. Division approval required.

HSC 3930 Professional Development I (1) This course is the first in a series of four professional development courses designed for health care management majors. It is structured to familiarize students with the concept of professionalism, examine health care management career paths and professional associations. Additional topics of discussion include career success, ethics and judgment, resumes, business attire and appropriate behaviors. This course will also introduce students to the FAMU Career Placement Center and its resources. Division approval required.

HSC 3931 Professional Development II (1) Prereq: HSC 3930. This course is the second in a series of four professional development courses designed for Health Care Management majors. The focus of this course is internship preparation and placement. Various topics relative to internship success will be discussed. Division approval required.

HSC 4202 Public and Community Health (3) Prereq: HSA 3110. Study of the impact on the health status of individuals as a result of

public health practices and services including topics in epidemiology. Division approval required.

HSC 4634 Critical Health Issues (3) Prereq: HSA 3110. An examination of current issues facing the health care industry including access, quality of care, end of life, health disparities, cultural competence, diversity, ethics, HIPAA and confidentiality. Division approval required.

HSC 4930 Professional Development III (1) Prereq: HSA 4850, HSC 3931. This is the third in a sequence of four professional development courses for Health Care Management majors. The focus of this course is internship debriefing and discussion. In addition, there will be opportunities for students to strengthen their presentation and interview skills. Division approval required.

HSC 4931 Professional Development IV (1) Prereq: HSA 4850, HSC 4930. This course is the last in a series of four professional development courses for Health Care Management majors. The focus of this course is realistic career planning for employment or graduate education. Emphasis will be placed on identifying employment opportunities, job interviews, graduate school preparation and career success. Division approval required.

RCS 3030 Introduction to Vocational Rehabilitation (3). An overview of the history and philosophy of rehabilitation. Examines the organizational structure of public and private rehabilitation agencies.

RCS 3700 Disability and Society (3). Overview of the types of disabling conditions, myths about people with disabilities, societal attitudes facilitating and impeding opportunities for people with disabilities, and career opportunities in the field of rehabilitation.

RCS 4060 Psychological Aspects of Disability (3). An in depth study of the psychological and sociological aspects of disabilities, including adjustment factors in living with disabilities, community attitude toward individuals with disabilities, and strategies to change attitudes.

RCS 4200 Introduction to Vocational Evaluation (3). An overview of (a) types of and purposes of traditional vocational assessments, (b) the use of vocational assessment measures and assessment for supported employment services, (c) measures of physical capacities/functional limitations and independent living skills.

RCS 4610 Supervision and Coordination in Rehabilitation (3). Examines the roles, duties, and responsibilities of rehabilitation managers and the factors involved in the supervision and coordination of rehabilitation agencies.

Division of Health Care Management

Master in Health Administration (MHA)

About Health Care Management

The health care industry is the largest and fastest growing industry in this country. According to employment forecasters, over the next decade, eight of ten fastest growing career fields will be in health services occupations.

Health care management is a profession that utilizes administrative and managerial principles and concepts to direct the allocation of resources and delivery of services in health care organizations. Health care managers perform the same functions as managers in any other industry or field. Health care managers plan, direct, or ganize, control, and coordinate the resources of health care organi zations. As integral members of the health profession, health care managers are responsible for working with the Board of Directors to create the best possible working environment for the medical staff, nurses, therapists and other clinical professionals who provide direct health care services. Additionally, they ensure that health care is provided in a cost-effective and humane manner.

The primary focus of the Division of Health Care Management is to provide comprehensive undergraduate and graduate education in health care management. Upon graduation, students are prepared for entry-level management positions in a variety of private and public settings in healthcare.

Program Description

The Master in Health Administration (MHA) degree program is designed to meet the educational needs of both traditional and non-traditional students. A minimum of fifty-five (55) credit hours, divided between the didactic and experiential component (field-work/residency) is required for the MHA degree. The curriculum is offered in a lock-step format with new cohorts entering the program each fall semester. Courses in finance, economics, statistics, application of research methods and quality are designed to help students develop problem-solving and decision-making skills. Management, strategy, human resources, legal aspects and organizational theory courses are included in the curriculum to provide students with the conceptual framework and operational aspects of health services administration.

Also included in the curriculum are several courses that foster students' understanding of the social, political, and economic factors affecting the delivery of health care. The integrative portion of the curriculum includes a capstone course and an administrative field-work/residency. Students participate in the capstone course during the final semester of didactic training. Prospective students are strongly encouraged to complete the following foundation courses prior to starting the program: Financial Accounting, Managerial Accounting, Microeconomics, Statistics and/or Research Methods, and Computer Applications.

Program Admission Requirements

Applicants to the program must meet the minimum requirements for admission including:
•An earned baccalaureate degree from an accredited college or university,
•A grade point average of 3.0 or higher in the last 60 semester hours of undergraduate work completed or a requisite combined score on the GRE.
•Application to the School of Graduate Studies, application to the School of Allied Health Sciences MHA program, transcripts, GRE scores, resume, three letters of recommendation, and a personal statement. Students may be interviewed by the admissions committee.

Program Mission

The mission of the Master of Health Administration program (Program) is to provide comprehensive graduate education in health care administration, to prepare recent college graduates for early- and mid-level careers in the healthcare delivery system. The Program competencies are achieved through classroom-based, student-centered learning experiences such as: case analysis, in-class presentations, team activities and simulations. In keeping with the historic mission of the University, of educating African Americans, the Program embraces persons of all races, ethnic origins and nationalities.

Program Vision

Florida A&M University's MHA Program will be nationally recognized as an outsganding graduate program in healthcare administration through excellence in performance of our graduates, faculty scholarship and service.

Program Values

The Master of Health Administration Program holds the following components to the acheievement of the above stated mission: excellence; accountability; integrity/ethics; diversity; respect; service; professionalism; collaboration.

The Program Competencies

The program seeks to develop in students an essential understanding of the management, organization, financing, delivery, and performance of the healthcare delivery systems and services. The program also seeks to develop professional competencies that are relevant in the healthcare environment of today. These competencies are achieved through classroom-based, student-centered learning experiences such as: case analysis, in-class presentations, team activities and simulations.

The Health Leadership Alliance (HLA) Core Competencies have been identified as the set of competencies for the Program. Domains for the core and specialty competencies are outlined below.

Domain 1: Communication and Relationship Management
Domain 2: Leadership
Domain 3: Professionalism
Domain 4: Knowledge of the Healthcare Environment
Domain 5: Business Knowledge and Skills

**** MHA Curriculum**

Semester 1	**Hrs.**
HSA 5103 Intro to Health & Medical Care Organizations	3
HSA 6414 Social Dimensions & Issues in Health Care	2
HSA 5752 Health Care Statistics	3
HSA 6175 Health Care Financial Management	3
HSA 5926 Seminar in Health & Business Communications	1
Total Hours	12

Semester 2	**Hrs.**
HSA 6432 Economic Aspects of Health Care	3
HSA 6735 Application of Research Methods in Health Care	3
HSA 6118 Organization Theory & Behavior in Health Care Management	3
HSA 6415 Managerial & Administrative Uses of Epidemiology	2
HSA 5935 Executive Symposium I	1
Total Hours	**12**

Semester 3	**Hrs.**
HSA 6153 Current Issues in Health Policy & Politics	3
HSA 6178 Health Care Financial Management II: Cases	3
HSA 6149 Health Care Planning & Marketing	3

HSA 6925 Executive Symposium II	1
Total Hours	**10**

Semester 4	**Hrs.**
HSA 6507 Health Information Systems	3
HSA 5426 Legal Aspects and Ethics in Health and Medical Care	3
HSA 6342 Leadership & Human Resources Management in Health Care	3
HSA 6385 Quality Management in Health Care	3
Total Hours	**12**

Semester 5	**Hrs.**
HSA6938 Health Management Capstone	3
HSA 6875 Health Management Fieldwork/Residency	6
Total Hours	**9**

Health Management Capstone

The health management capstone course is a strategic health management case study that requires the student to synthesize, evaluate, and apply the theoretical, analytical, critical thinking, and problem-solving skills to all aspects of health services administration. Capstone eligibility includes successful completion of all courses with a grade of "B" or above. In order to complete the capstone students must demonstrate the successful acquisition of critical competencies necessary for effective leadership in health services organizations. A case analysis and case presentation is used to evaluate the successful integration of all MHA course learning outcomes.

Health Management Fieldwork/Residency

The health management fieldwork/residency requirement is an integral part of the MHA curriculum. This experiential component of the program is designed for students to bridge the gap between academia and health management practice by gaining practical experience in one of a variety of health care agencies and organizations. Under the supervision of a qualified preceptor the fieldwork/residency experience benefits the student by providing an opportunity to apply management and leadership theory, management principles, and management practices.

In order to be eligible for fieldwork/residency, students must successfully complete all courses with a grade of "B" or above before they can register for this course. The fieldwork experience is conducted in the last semester of study, the semester of graduation.

Thesis Option

The Program offers a thesis option to satisfy the MHA residency/fieldwork requirement. This option must be selected upon accept

tance to the Program and is not available after the first semester of study. There have been no requests for the thesis option for the past two years.

The Program follows the School of Graduate Studies Policy on thesis and dissertation guidelines. Graduate School Dissertation and Thesis Guidelines Manual can be found on the School of Graduate Studies' website.

Course Descriptions

HSA 5103 Introduction to Health and Medical Care Organizations (3): Identification and examination of elements that comprise the health care system in the United States. Analysis of the interaction of health organizations with political, financial, cultural, economic, and social systems. Emerging alternative delivery systems are explored.

HSA 5426 Legal Aspects and Ethics in Health and Medical Care (3): Prereq: HSA5103. Legal and ethical considerations affecting the organization and management of health care institutions. Topics include sources of law, corporate liability, anti-trust, contract law, tort and labor law, informed consent, privacy and confidentiality, and contemporary health issues. Case studies will be used to teach practical application of law and ethics in health management.

HSA 5752 Health Care Statistics (3): Systematic analysis of the social dimensions of the structure and organization of the health care delivery system. Topics covered will include social definition of health and illness; physician-patient relationship; provider-patient relationship; epidemiology and demography of health and illness; professional socialization of physicians, health administrators, and allied health practitioner; and access and utilization of health services.

HSA 5926 Seminar in Health& Business Communications (1): An overview of communication theory and its application in health care management. Topics covered will include principles of business writing, effective oral communication, job interview letters, use of PowerPoint, and other visual aids in business presentations.

HSA 5935 Executive Symposium I (1): This course is the first part of a learning experience designed to enhance the professional socialization of students. Students will be provided a forum to interact with professional health care executives.

HSA 6118 Organizational Theory and Behavior in Health Care Organization (3): Prereq: HSA5103. Applies organization theory and behavior to health organizations. Motivation and leadership, inter-group relations and conflict, power and politics, decision-making processes, information and control, performance analysis, communications, systems theory, organizational structure and design, change and adaptation, innovation, and population ecology theory.

HSA 6149 Health Care Planning and Marketing (3): Prereq: HSA5103, HSA6118. Planning and marketing strategies and outcomes examined from the perspective of health care organization and professional. Topics examined will include the theoretical and historical foundations of health planning; the relationship of health planning and regulation; application of planning methods; uses of strategic planning and its relationship to marketing; theories and practices of marketing and marketing research.

HSA 6153 Current Issues in Health Policy and Politics (3): Prereq: HSA5103. Analyzes the public policy process, the development of health policies in the United States, and the role of government in the health care system.

HSA 6175 Health Care Financial Management I (3): Application of financial and accounting principles and concepts in health management. Teaches theory and practice of how accounting and financial information is generated and recorded and used to make managerial decisions. Topics covered will include capital investment decision analysis, budgeting, variance analysis, cost allocation, ratio analysis, management of working capital, rate

setting and reimbursement, sources and uses of capital, cash management, breakeven analysis, and administrative uses of financial statements.

HSA 6178 Health Care Financial Management II: Case Studies (3): Prereq: HSA6175. Case studies and presentations involving financial issues, trends, and problems facing health organizations. Entities in both public and private sector health delivery systems will be covered.

HSA 6342 Leadership and Human Resources Management in Health Care (3): Prereq: HSA5103, HSA6118. Leadership and human resources theories, principles, concepts and techniques used by health care managers to maximize the effectiveness of employees. Special topics include role and functions of human resources management, job design, job analysis, and job evaluation; recruitment and selection; training and development; wage and benefit administration; and labor issues.

HSA 6385 Quality Management in Health Care (3): Prereq: HSA5103, HSA5752, HSA6735; Coreq: HSA6507. This course will present the concepts and organizational foundations of quality and the provision of quality care in a health care delivery environment. Emphasis will be placed on the need for incremental measures of quality care and how those measures are evaluated. Additionally, formal quality assessment processes and procedures, the role of regulatory agencies and schools, quality management tools and techniques will be reviewed.

HSA 6414 Social Dimensions and Issues in Health Care (3): Systematic analysis of the social dimensions of the structure and organization of the health care delivery system. Topics covered will include social definition of health and illness; physician-patient relationship; provider-patient relationship; epidemiology and demography of health and illness; professional socialization of physicians, health administrators, and allied health practitioner; and access and utilization of health services.

HSA 6415 Managerial and Administrative Uses of Epidemiology (2): Application of epidemiological and community health concepts in health service management. Analyze data pertaining to the distribution and determinants of disease and illness.

HSA 6432 Economic Aspects of Health Care (2): Application of economic concepts and principles to the study of health services. Emphasis placed on the financing and delivery of personal medical care systems and the economics of health insurance. Analyze and discusses payment techniques used by third-party payers to pay for services rendered to insured or program beneficiaries by health care organizations or individual providers.

HSA 6507 Health Information Systems (3): Prereq: HSA5103. Concepts and implementation of clinical and health information systems to support managerial planning, control, decision making, and risk assessment and management.

HSA 6735 Application of Research Methods in Health Care Management (3): Prereq: HSA5752. An application of statistical methods, quantitative methods, and operations research within health services management and policy contexts.

HSA 6875 Health Management Fieldwork/Residency (6): Prereq: All didactic courses including HSA6938. A 12-week field work experience in a health care organization or agency.

HSA 6925 Executive Symposium II (1): Prereq: HSA5935. This course is the second part of a learning experience designed to enhance the professional socialization of students. Students will be provided a forum to interact with professional health care executives.

HSA 6938 Health Management Capstone (3): Prereq: All didactic courses. The course is designed to provide students an opportunity to synthesize and integrate knowledge from all formal and informal learning presented during previous academic coursework and apply it to contemporary issues in the health care industry. The course is designed to help prepare students for a successful residency experience and management career by providing experiences that enhance their competitive advantage in the health care market.

HSA 6978 Master's Thesis (6): Prereq: All didactic courses except HSA6938 and advisor approval. Preparation of a master's thesis consistent with requirements of the School of Graduate Studies and Research.

Division of Health Informatics and Information Management

Health Informatics and Information Management (HIIM) is an allied health profession that focuses on the integration of information technology and management for all types of health related facilities, professional organizations, and agencies.

Health informatics (HI) is a science that defines how health information is technically captured, transmitted and utilized. Health informatics focuses on information systems, informatics principles, and information technology as it is applied to the continuum of healthcare delivery. It is an integrated discipline with specialty domains that include management science, management engineering principles, healthcare delivery and public health, patient safety, information science and computer technology. Health Informatics programs demonstrate uniqueness by offering varied options for practice or research focus.

Health information management (HIM) is the practice of acquiring, analyzing and protecting digital and traditional medical information vital to providing quality patient care. HIM professionals are highly trained in the latest information management technology applications and understand the workflow in any healthcare provider organization from large hospitals to the private physician practice. They are vital to the daily operations management of health information and electronic health records.

Health information management professionals work in a variety of different settings and job titles. They often serve in bridge roles, connecting clinical, operational, and administrative functions. These professionals affect the qaulity of patient information and patient care at eveyr touch point in the healthcare delivery cycle. Having skilled HIM professionals on staff ensures an organization has the right information on hand when and where it is needed while maintaining the highest standards of data integrity, confidentiality and security.

Accreditation

The program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Commission on Accreditation for Health Informatics and Information Management Education
233 North Michigan Avenue
21st Floor

Chicago, IL 60601-5800
(312) 233-1100
www.cahiim.org

Faculty
Professor: Mosley, Barbara
Associate Professor: McNeill, Marjorie
Assistant Professor: Burke, Lauralyn; Cooper, Lon'tejuana

Admission Process—Criteria for admission to the Division of Health Informatics and Information Management include:

1. Acceptance into the university;
2. Completed Application for Admission to the Division of Health Informatics and Information Management.
3. Official transcripts from all colleges and/or universities attended. Official course syllabi or course descriptions for all courses not taken at a Florida college or university.
4. Minimum overall GPA of 2.0 or a grade of "C" or in designated pre-professional courses (BSC 2093 with lab, BSC 2094 with lab, CGS 2060C, ACG 2021, ACG 2071, STA 2023, MAN 3025).
5. Typed autobiographical essay of at least 300 words including your reason for desiring to enter the health informatics and information management profession.
6. Current resume.
7. The admissions committee may interview applicants.

Students must clear a criminal background check to be eligible to participate in the clinical component of the curriculum.

Curriculum—The health informatics and information management curriculum is made up of two parts: the pre-professional curriculum and the professional curriculum. First, the student will complete two years of basic science and general education courses. Second, the student will complete two years of intensive coursework in health informatics and information management. This experience includes, but is not limited to, laboratory and supervised clinical experiences at area health care facilities.

Clinical Experiences—Each student, upon acceptance into the HIIM program, is required to participate in supervised learning experiences in the technical and administrative aspects of health information management in the Tallahassee and surrounding area health care facilities. The health informatics and information management student is also required to participate in a six-week management affiliation (internship) in a health care facility or related organization. The student's preferences of the choice of the facility are considered; however, the faculty reserves the right to select alternative affiliation sites which serve the best interests and needs of the student to complete the education requirements.

Professional Credentials—A Bachelor of Science in Health Informatics and Information Management is awarded upon completion of the curriculum. Graduates are eligible to take the national certification examination to become a Registered Health Information Administrator (RHIA).

Health Informatics and Information Management
Pre-Professional Curriculum

Freshman Year

Fall Semester		**Sem. Hrs.**
ENC 1101	Freshman Communicative Skills I	3
MAC 1105	College Algebra	3
BSC/CHM	(Any approved biology or chemistry) w/Lab	4
HSC 1000	Orientation to Health Sciences	1
AMH 2010	U.S. History 1492-1865 OR	
AMH 2020	American History 1865 – Present	3
Total		**14**

Spring Semester		**Sem. Hrs.**
ENC 1102	Freshman Communicative Skills II	3
MAC 1114	Algebraic/Trigonometric Functions	3
BSC 1010	General Biology I (w/lab) OR	
	BSC 1005 Biological Science (w/lab)	4
SYG 2000	Introduction to Sociology OR PSY 2012	
	Introduction to Psychology	3
AMH 2091	Introduction to African American History OR	
	AFA 3104 African American Experience	3
Total		**16**

Sophomore Year

Fall Semester		**Sem. Hrs.**
*BSC 2093	Anatomy and Physiology I (w/lab)	4
*ACG 2021	Financial Accounting Principles	3
HUM 2211	Historical Survey I OR HUM 2230 Historical	
	Survey II OR Any recognized humanities course	3
*CGS 2060C	Computer Literacy I OR MAN 2543	
	Introduction to Business Systems	3
SPC 1017	Foundations of Speech OR	
	SPC 2608 Public Speaking	3
Total		**16**

Spring Semester		**Sem. Hrs.**
*BSC 2094	Anatomy and Physiology II (w/lab)	4
*ACG 2071	Managerial Accounting Principles	3
*STA 2023	Introduction to Probability and Statistics	3
MAN 3025	Principles of Management	3
Total		**13**

Pre-Professional Curriculum Total Credits **59**

*This is a state common prerequisite. Substitutes indicated in the state Common Prerequisite Manual at www.facts.org will be accepted. Must successfully complete this course with a grade of C or better.

Professional Curriculum
Junior Year

Fall Semester		**Sem. Hrs.**
HIM 3006	Foundations in Health Information	
	Management (w/lab)	3
HIM 3437	Fundamentals of Medical Science I	3
HIM 3930	Professional Development I	1
HSA 3110	Organization and Administration of	
	Health Care Facilities	3
HSC 3531	Medical Terminology	3
Total		**13**

Spring Semester		Sem. Hrs.
HIM 3016	Legal Aspects of Health Information	3
HIM 3116	Quality Management in Health Services (w/lab)	3
HIM 3438	Fundamentals of Medical Science II	3
COP 3710	Database Management Systems	3
Total		**12**

Summer Semester		Sem. Hrs.
HIM 3806	Clinical Education I	1
HIM 4465	Healthcare Informatics (w/lab)	3
HSA 3170	Health Care Finance OR HSA 3430 Health Care Economics	3
Total		**7**

Senior Year

Fall Semester		Sem. Hrs.
HIM 4226	Clinical Classifications and Terminologies I w/lab	3
HIM 4306	Organization and Management, Health Information Department I (w/lab)	3
HIM 4656	Health Information Systems (w/lab)	3
MAN 4544	Systems Theory & Design OR CIS 3040 Information Systems in Organizations	3
Total		**12**

Spring Semester		Sem. Hrs.
HIM 3626	Health Statistics and Research	3
HIM 4286	Clinical Classifications and Terminologies II (w/lab)	3
HIM 4344	Organization and Management, Health Information Department II (w/lab)	3
HIM 4816	Clinical Education II	1
HIM/HSC/HSA	Approved Elective (Upper Division)	2
Total		**12**

Summer Semester		
HIM 4932	Seminar, Health Information Management	1
HIM 4933	Professional Development II	1
HIM 4838	Management Affiliation	3
Total		**5**

Professional Curriculum Total Credits	**61**
Total Semester Hours	**120**

Foreign Language Requirement

Prior to graduation, all students must have documentation showing completion of the foreign language requirement: two (2) years

of the same language or American Sign Language taken in high school or eight semester hours at an accredited undergraduate institution.

Course Descriptions

HSC 3531 Medical Terminology (3) Study of the basic medical language skills, including pronunciation, spelling, word construction, and definitions necessary for communication in a medical environment.

HIM 3003 Health Information Documentation (2) Introduction to writing skills needed for documentation in various health care facilities/organizations. Emphasis is placed on techniques necessary to convert clinical observations and thoughts into documentation that meets accreditation and regulatory requirements. Medical spelling, symbols, abbreviations, and phrasing are covered.

HIM 3006 Foundations in Health Information Management (3) Introduction to the foundations of health information systems. Exploration of the content and format of health records, accreditation and regulatory standards for documentation, and data storage and retrieval methods. Health care statistics. Laboratory accompanying.

HIM 3016 Legal Aspects of Health Information (3) Prereq: HSA 3110. Study of legal, ethical, and regulatory requirements affecting the use, control, access, and disclosure of health information.

HIM 3116 Quality Management in Health Services (3) Introduction to quality and performance improvement in a health care facility. Focus on outcomes measurement, disease management process, and data quality assessment and integrity. Laboratory accompanying.

HIM 3437 Fundamentals of Medical Science I (3) Prereq: BSC 2093/2094 lecture/lab. Study of the pathophysiology and treatment of specific human diseases.

HIM 3438 Fundamentals of Medical Science II (3) Prereq: HIM 3437. Continued study of the pathophysiology and treatment of specific human diseases.

HIM 3626 Health Statistics and Research (3) Prereq: STA 2023, HSA 3110. An introduction to research design and methods with emphasis on health care outcomes improvement. Statistical analysis of health care data, including reporting and presentation techniques.

HIM 3806 Clinical Education I (1) Coreq/Prereq: HIM 3006. Introduction to health information functions within health care facilities. Rotation through technical functions of the department following the flow of patient data, including analysis; release of information; and storage, retrieval, and control procedures.

HIM 3930 Professional Development I (1) Structured learning experiences that introduce students to the health information management profession. Study of ethical standards of professional practice. Emphasis on preparing students to develop professional objectives and map career plans.

HIM 4226 Clinical Classifications and Terminologies I (3) Coreq/Prereq: HIM 3438. Introduction to the principles and applications of ICD-10-CM/PCS. Overview of Diagnostic Related Groups (DRGs and MSDRGs). Management of coding services. Laboratory accompanying.

HIM 4286 Clinical Classifications and Terminologies (3) Coreq/Prereq: HIM 3438. Continued study of medical nomenclature and classification systems. Management of clinical data and its impact on revenue cycle management and reimbursement. Principles and applications of CPT coding. Study of secondary data sources, registries, clinical indices, and databases. Laboratory accompanying.

HIM 4306 Organization and Management of a Health Information Department I (3) Prereq: HIM 3006. Study of strategic and organizational management as related to the operation of a health information department with focus on leadership, planning, organizing, and managing resources. Laboratory accompanying.

HIM 4344 Organization and Management of a Health Information Department II (3) Prereq: HIM 4306. Continued study

of management theories with practical application to the operation of a health information department with focus on work design, performance improvement, project management, and budgeting. Laboratory accompanying.

HIM 4406 Health Care Records (3) Study of health record systems in various types of non-acute and ambulatory health care facilities.

HIM 4465 Healthcare Informatics (3) Prereq: CGS 2060C. Introduction and application of computer concepts and technology for the management of health information to improve quality of patient care, medical education and research, and evaluation of health care services. Systems development life cycle. Laboratory accompanying.

HIM 4656 Health Information Systems (3) Prereq: HIM 4465. Application of data analytics and decision support throughout the health care continuum. Data exploration and mining. Concepts of health information exchange. Laboratory accompanying.

HIM 4816 Clinical Education II (1) Prereq: HIM 3006, HIM 3116, HIM 4226. Supervised learning experiences in health care facilities with emphasis on electronic health record applications, quality improvement, health care statistics, data analysis, and coding.

HIM 4838 Management Affiliation (3) Prereq: All HIM courses. Supervised learning experience in the administrative aspects of health information practice with emphasis on leadership and management functions. Student will spend six weeks in the health information arena of a health care facility/organization. Division approval required.

HIM 4932 Seminar, Health Information Management (1) An examination of current issues and challenges facing the health care industry and the health information management profession. Effective leadership and problem solving skills will be explored.

HIM 4933 Professional Development II (1) Prereq: All HIM courses. Course content is designed to provide students with a review of all domains covered on the Registered Health Information Administrator (RHIA) national certification examination. Test taking strategies will be emphasized. A comprehensive examination covering all major course content offered in the curriculum will be administered.

HIM 4935 Current Issues in Health Informatics & Information Management (variable) Open to HIIM majors only. Provides an opportunity for the focused examination of topics having special and/or current significance for students in health informatics and information management. Topics may vary from semester to semester.

HIM 4466 Advanced Health Informatics & Information Management Concepts (variable) Open to HIIM majors only. Advanced concepts in health informatics and information manage ment. Guided projects applying instructional resources in health data standards, quality management, systems technology, classification system, reimbursement methodologies, privacy, and security issues.

Division of Occupational Therapy
Bachelor of Science in Health Science

The School of Allied Health Sciences offers a course of study that leads to the degree Bachelor of Science health science: pre-occupational therapy concentration. The health science curriculum is designed to produce graduates capable of demonstrating those characteristics identified as desirable by employees of tomorrow's health care professionals. The student majoring in health science graduates with a general degree that will allow that graduate to work in health care settings, community programs or agencies, or continue to a graduate program.

Currently, the health science major includes all prerequisite courses required for entry into the occupational therapy graduate program. **Therefore, it is recommended that students interested in majoring in occupational therapy should major in health science with a concentration in pre-occupational therapy at the undergraduate level.** Students who wish to apply to the occupational therapy graduate program will major in health science pre-occupational Therapy concentration (see below). Those who wish to pursue physical therapy will major in health science pre-physical therapy concentration (see Division of Physical Therapy for complete curriculum). The health science degree provides the basis for students to pursue graduate education in other health care, community, and science-oriented arenas. The health science degree is suitable for students wishing to pursue and graduate with general health –related knowledge to be used as the basis for work in the health-care setting. Additionally, students who already have an associate of arts (AA) degree who wish to pursue a Bachelor of Science degree and return to work in a related health arena would benefit from the health science degree. The degree is useful for lower division pre-professional students who completed the necessary prerequisite courses for a professional program but were not accepted into that program. With the health science degree, such students are still able to graduate in a health-related area.

Faculty
Interim Director: Oliveira, Debora
Professor: Hughes Harris, Cynthia
Associate Professor: Hinds, Maria
Assistant Professor: Alexander, Aurelia
Academic Fieldwork Coordinator: Mbiza, Sarah

Health Science Pre Occupational Therapy Curriculum

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
MAC 1105 College Algebra	3
BSC 1010 *General Biology I	3
BSC 1010L *General Biology Lab I	1
HUM XXXX Any Approved Humanities	3
HCS 1000	1
Total	**14**

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communications Skills II	3
PHI 1100 Critical Thinking	3
ANT 2000 Intro to Anthropology OR	
SYG 2000 Intro to Sociology	3
DEP 2004 *Human Growth and Development	3
HSC 1000 Orientation to Health Sciences	1
CHM 1020 *Fundamentals of Chemistry	3
Total	**16**

Sophomore Year

Fall Semester	**Sem. Hrs.**
AMH 2010 US History 1492-1865 OR	
AMH 2020 US History 1865-Present	3
PHY 2053 *College Physics I	3
PHY 2053L *College Physics I Lab	1
BSC 2093 *Anatomy & Physiology I	3
BSC 2093L *Anatomy & Physiology I Lab	1
SPC 2608 Public Speaking	3
XXXX Elective	1
Total	**15**

Spring Semester	**Sem. Hrs.**
BSC 2094 *Anatomy & Physiology II	3
BSC 2094L *Anatomy & Physiology II Lab	1
STA 2023 *Intro to Probability & Statistics	3
AFA 3104 African American Experience OR	
AMH 2091 African American History	3
PSY 2012 *Intro to Psychology	3
CGS 2060 Intro to Microcomputer Applications	3
Total	**16**

Junior Year

Fall Semester	**Sem. Hrs.**
HSA 3110 Organ & Admin HealthCare	3
CLP 4143 *Abnormal Psychology	3
RCS 4200 Intro to Vocational Rehabilitation	3
RCS 3700 Disability and Society	3
HSC 3531 Medical Terminology	3
Total	**15**

Spring Semester	**Sem. Hrs.**
RCS 3030 Introduction to Rehabilitation	3
HSC3640 Health Law	3
HSC4202 **Public and Community Health	3
SYO 3400 Medical Sociology	3
HSA 4700 *Health Care Research	3
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
SYP 4730 **Aging in America	3
HIM 3437 Fundamental of Medical Science I	3
RCS 4060 Psychosocial Aspects of Disability	3
OTH 4721 **Professional Development I OR see note	3
SOW 3104 **Human Behavior Across the Life Cycle	3
Total	**15**

Spring Semester	**Sem. Hrs**.
HIM 3438 Fundamentals of Medical Science II	3
HSC 4634 **Critical Health Science	3
HSC 3710 **Health Promotion	3
ANT 3711 **Cross Cultural Conflict Resolution	3
RCS 4610 Supervision and Coordination in Vocational Rehab	3
Total	**15**
Total Hours	**120**

Required pre-requisite for MSOT Program

**Note: Any -> SYO, ANT, SOP, SYP, SOW, EDF, HSC course 3000 level or higher may be substituted for the senior level courses with a prefix of SYO, SOP, ANT, PSY, SOW or EDF. Revised 7/2013

Foreign Language Requirement

Prior to graduation, all students must have documentation showing completion of the foreign language requirement: two (2) years of the same language or American Sign Language taken in high school or eight semester hours at an accredited undergraduate institution.

Division of Occupational Therapy

Occupational therapy is a health care profession that promotes lifelong health and well-being through engagement in occupation. The primary objective embodied within the concept of occupation is the practitioners' use of activities meaningful to individuals within their environments. Occupational therapy services are provided to individuals within the context of self-care, work, play and leisure activities. Practitioners provide services to individuals to increase their daily function, enhance/support health and development, and prevent disability through promotion of performance skills within environments and /or tasks adapted to meet their individual needs.

Practitioners facilitate functional outcomes in persons of all ages and cultural backgrounds. Occupational therapy aims to develop and/or restore the highest level of independence with individuals limited by physical/mental injury or illness, developmental or learning disability, or adverse environmental conditions.

Occupational Therapy services are provided in a variety of health care settings within the context of both community and private practice. These may include hospitals, psychiatric and community settings, school systems, rehabilitation centers, skilled nursing facilities, outpatient clinics, or home health. Occupational therapists function as clinicians, educators, consultants, researchers and administrators. Services to consumers and their families include evaluation/treatment planning, assessment of home and work environments, and training in the use of adaptive equipment and assistive technology.

The Division of Occupational Therapy, one of the five divisions within the School of Allied Health Sciences, was established in 1989. Starting in the year 2005, the division transitioned to the entry-level Master of Science in occupational therapy degree.

History of Occupational Therapy at FAMU

The Division of Occupational Therapy, one of the five divisions within the School of Allied Health Sciences, was established in 1989 .The State of Florida, in its' 1988-1993 strategic plan, identified as one of its critical problems in the rapidly growing State of Florida the need for an increased number of allied health practitioners. The division, consistent with the mission of the university and the State of Florida, has conferred more than 200 baccalaureate degrees in occupational therapy. The last class of undergraduate students received their baccalaureate degrees in 2006. The

division has now transitioned to an entry-level master's degree program from which the first student graduated in 2007.

Philosophy of the Division

We believe that humans are complex and active beings whose development is dependent upon participation in occupations. This participation is context dependent and involves the whole person. Humans continually adapt as they grow. When this adaptation process is interrupted, occupational therapy utilizes occupation to facilitate change and renewal.

The Division of Occupational Therapy believes that occupational therapy is client-centered and occupation based. It is the role of the occupational therapy educators to promote the use of occupation to assist strength, fitness and wellbeing, growth, change, and adaptation to encourage full participation in meaningful occupation that culminates in general safety, security and appropriate quality of life. Occupational therapy is science-driven and based upon evidence. Occupations will be utilized to prevent, habilitate, and rehabilitate, through the intervention planning process to allow maximum participation in occupations.

We believe students should develop a solid base of knowledge that facilitates critical thinking, clinical reasoning and problem-solving skills, all of which are essential to transition from student to competent occupational therapy practitioner. Recognizing that all interventions must be focused on client priorities, we emphasize client-centered evaluation and intervention. We believe that human beings grow and develop through occupation to participate fully in life. Participation in occupations is critical to a sense of well-being and health.

The curriculum is designed to provide students with an educational experience which focuses on continuous critical thinking in order that occupational therapy students be well prepared to function and thrive in the ever changing contexts and environments of a diverse and multicultural society. This process acknowledges that skills must be achieved and maintained through research in a self-directed independent manner; foundational knowledge is best retained and applied when learned in a meaningful context of occupations. Graduate education must respect the uniqueness of individuals and honor a variety of perspectives, backgrounds and learning styles that enhance the richness of the graduate experience.

How the Program Philosophy Reflects the Current Philosophy of the Profession

The program philosophy has been revised, with input from the program faculty, to more explicitly reflect the current philosophy of the occupational therapy profession. The program faculty believes that the core philosophy of the profession includes the concepts that occupational therapy is occupation based, evidence-based, client-centered, and addresses health and well-being. The revised philosophy of the program explicitly includes these concepts as evidenced by the use of practical opportunities to screen and assess e clients during university health fairs and through learning activities with children. The division utilizes such activities as observation, evaluation, splint making opportunities and group projects to disseminate Occupational Therapy information. Community events, such as the Forget Me Not walk assists to meet the needs of a diverse and multicultural society. Our program embodies these concepts as reflected in the revised philosophy.

Mission

The mission of the Division of Occupational Therapy at Florida A&M University is to:

- Offer students a curriculum designed to create an environment that nurtures intellectual growth and scholarship through interactive and thoughtful discourse, self-directed learning and development of links between faculty and professionals to establish collaborative community partnerships.
- Prepare entry-level occupational therapists equipped with skills, knowledge and attitudes necessary to demonstrate excellence with care in all professional practice contexts.
- Prepare entry-level practitioners capable of serving as leaders and contributors in an ever evolving society.
- Promote critical thinking, reasoning and problem-solving skills to further knowledge of occupational science and the efficacy of occupational therapy practice, research and education.
- Prepare students to become skilled practitioners who provide occupational therapy services aimed at promoting health and wellness, and at enabling individuals' meaningful and satisfactory participation in life activities.
- Graduate students who are prepared to embrace life-long learning concepts that reflect current theory, evidence-based practice and an understanding of individuals from different racial, ethnic and cultural backgrounds.

Accreditation

The Master of Science occupational therapy program is accredited through the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA). www.acoteonline.org

These agencies are located at:
ACOTE, c/o Accreditation Department, American Occupational Therapy Association (AOTA)
4720 Montgomery Lane, Suite 200
Bethesda, MD 20814-3449

301-652-AOTA (2682)
www.aota.org

NBCOT Certification Results

For the three most recent calendar years (2011, 2012, 2013) the performance of the graduates of the occupational therapy program was as follows:

Total number of program graduates 44
Total number of first-time test takers of NBCOT exam 29
Total number of first-time test takers who passed 19
First-time test taker percentage pass rate 66%
Total pass rate for all test-takers 93%%

Most of our graduates are employed as occupational therapists. Recent surveys of employers rate our graduates as good or excellent employees and therapists! https://secure.nbcot.org/data/schoolstats.aspx

Curriculum
The Master of Science in occupational therapy curriculum is designed to provide students with an educational experience with focus on a modified problem-based philosophy of education and general concepts about adult learners. This process acknowledges that: 1) skills must be achieved and maintained through the acquisition of knowledge acquired through research; and 2) foundational knowledge is best retained and applied when learned in a meaningful context of practice problems. Therefore, the curriculum is designed to impart relevant content and stimulate a creative and critical graduate experience.

This is a two and a half-year professional program designed to prepare occupational therapy practitioners who work in a variety of settings, have a broad base of knowledge serving consumers of all ages, and can critically appraise health science literature. They will also be able to apply appropriate principles and procedures to the evaluation, interpretation, and intervention processes. They will understand use of current trends in clinical practice and demonstrate knowledge of and sensitivity to culturally diverse populations and their attitude towards health care.

Fieldwork Education

Fieldwork is a substantive aspect of occupational therapy education. Clinical education provides students with the opportunity for role-modeling, supervision, and the experience in execution of professional responsibilities. Fieldwork takes place in a variety of settings (traditional and non-traditional) and emerging areas of practice. Fieldwork placements are subject to availability at locations that have a contractual agreement with the division. The availability of contracts may vary from semester to semester. The academic fieldwork coordinator (AFC) recruits, assigns, confirms and monitors both semester practicums and final internships. Supervision of fieldwork sites provides clinicians with opportunities for exchange of academic and practical knowledge and skills as students work under their supervision.

Professional Credentials

A Master of Science in occupational therapy is awarded after successful completion of all course work and fieldwork assignments. The graduate is then eligible to take the national certification examination administered by the National Board for Certification in Occupational Therapy (NBCOT). After successful completion of this exam, the individual will be an occupational therapist, registered. Most states require licensure to practice. Licensure is usually based on results of the NBCOT certification exam.

Faculty
Interim Director: Oliveira, Debora
Professor: Hughes Harris, Cynthia
Associate Professor: Hinds, Maria
Assistant Professor: Alexander, Aurelia
Academic Fieldwork Coordinator: Mbiza, Sarah

Occupational Therapy Pre-requisite Courses
All prerequisites must be completed prior to entrance into the program.

Graduate Track: Hold a baccalaureate or higher degree in a discipline other than Occupational Therapy from an accredited college or university or receive a baccalaureate degree in a discipline other than Occupational Therapy by the time of enrollment.

The following courses must be successfully completed prior to admission into the program and regardless of degree status:

Four (4) courses in Social and Behavior Science
Introduction to Psychology, Abnormal Psychology, Human Growth & Development, Introduction to Anthropology or Sociology.

One (1) course with laboratory in Biology
Biology I

Two (2) courses in Anatomy and Physiology with laboratories
Anatomy & Physiology I and II.

One (1) course in Statistics.
Probability and Statistics.

One (1) course in General Chemistry
General Chemistry.

One course in Physics with Laboratory
College Physics with Laboratory OR

An Approved Kinesiology Class

One course in Research

Health Care Research

Applicants to the program must meet the minimum requirements for admissions, including (1) a baccalaureate degree from an accredited college or university; (2) a grade-point average of 3.0 or better in the last 60 semester hours (or 90 quarter hours) of under graduate work completed; or (3) possession of a graduate degree from an accredited institution of higher education. In addition to the above criteria, the overall prerequisite GPA is considered in the process of admission into the Division of Occupational Therapy Master of Science Occupational Therapy Program.

Applicants are required to submit an application to the Occupational Therapy Centralized Application System (OTCAS) and to the School of Graduate Studies and Research admissions office, an application for admission to the MS program in the School of Allied Health Sciences, an autobiographical essay (*300-500 words), evidence of 40 hours of volunteer/observations/work experience in an occupational therapy setting, three letters of recommendation and an official copy of transcripts from all colleges or universities attended. Acceptance into the Florida A&M University School of Graduate Studies and Research does not guarantee acceptance into the physical therapy program**.**

Master of Occupational Therapy Curriculum

Course Sequence
Year One
Fall Semester

Course	Credits
OTH 5206 Occupation across the Life Span	4
OTH 5241 Human Gross Anatomy	3
OTH 5241L Human Gross Anatomy Lab	1
OTH 5723 Professional Development I	3
OTH 5032 Foundations of Occupational Therapy	3
TOTAL	**14**

Spring Semester

Course	Credits
OTH 5033 Concepts in Human Occupation	3
OTH 5142 Therapeutic Communication Skills	3
OTH 5245 Neuroanatomy	3
OTH 5766 Scientific Inquiry	**1**
TOTAL	**10**

Summer

Course	Credits
OTH 5243 Functional Human Motion	3
OTH 5243L Functional Human Motion Lab	1
OTH 6270 Occupational Pharmacology	2
OTH 6767 Scientific Inquiry II	1
TOTAL	**7**

Year Two
Fall

Course	Credits
OTH 5205 Biospychosocial I: Infancy thru Adolescence	2
OTH 5205L Biospychosocial I: Lab	2
OTH 5870 Level I Fieldwork: Infancy thru Adolescence	1
OTH 5935 Seminar I	1
OTH 5141 Communication in Groups	3
OTH 5450 *Fundamentals of Medical Science	3
OTH 6768 Scientific Inquiry III	1
TOTAL	**13**

Spring

Course	Credits
OTH 5207C Biospychosocial II: Adults & Older Adults	3
OTH 5207L Biospychosocial II: Lab (Includes Level I FW)	2
OTH 5208 Level I Fieldwork: Adults and Aging	1
OTH 6936 Seminar II	1
OTH 6002 Health Care Foundations	2
OTH 5080 **Psychosocial Aspects of Disability	3
TOTAL	**12**

Summer

Course	Credits
OTH 6830 Biospychosocial III: Community/Lab	3
OTH 6833 Level I Fieldwork: Community	1
OTH 6937 Seminar III	1
OTH 6715 Leadership and Management	3
TOTAL	**8**

Year Three
Fall

Course	Credits
OTH 6941 Fieldwork Level II: Rotation I	8
OTH 6938 Advanced Topics	1
TOTAL	**9**

Spring

Course	Credits
OTH 6942 Fieldwork Level II: Rotation II	8
OTH 6727 Professional Development II	1
TOTAL	**9**

TOTAL CREDIT HOURS FOR GRADUATION 81

*May substitute for OTH 5932 Special Topics 1, 2, & 3
** May substitute for OTH 5932 Special Topics 1, 2, & 3
*** Changes in curriculum can occur based on the needs of the students and input from faculty

Course Descriptions

OTH 5032 Foundations of Occupational Therapy (3) Prerequisite: Admission to Program. Introductory professional course that serves as a foundation to development of a broad base of knowledge and insight into Occupational Therapy as a profession of choice.

OTH 5033 Concepts in Human Occupation (3) Prerequisite: Admission to Program. This course will explore the meaning and purpose of human occupation and will examine and analyze activities, habits, roles and occupations for individuals with varying disabilities. The focus of learning experiences and modified problem solving groups will be individuals engaged in occupation within various social and cultural contexts.

OTH 5080 Psychological Aspects of Disability (3). An in depth study of the psychological and sociological aspects of disabilities, including adjustment factors in living with disabilities, community attitude toward individuals with disabilities, and strategies to change attitudes.

OTH 5141C Communication and Interaction with Groups w/ Lab (3) Prerequisite: Admission to program; OTH 5032. The focus of this course is the study of group dynamics, group structure, occupation, communication and roles that facilitate or hinder group function. Students are provided with skills to facilitate and lead the group process. Students will use a variety of frames of reference to design groups and group interventions for a broad range of client populations.

OTH 5142 Therapeutic Communication Skills (3) Prerequisite: Admission to program. This course is designed to provide students with opportunities to experience and participate in practical applications of therapeutic communication skills within patient/consumer-simulated contexts in lecture and laboratory sessions. Students will participate in small and large therapeutic group experiences designed for them to acquire functional knowledge of a variety of skills necessary to effectively communicate with individuals across the lifespan.

OTH 5205C Biopsychosocial Development I w/Lab: (5) Prerequisite: Admission to program; OTH 5241 and OTH 5241L; and OTH 5245 (or in conjunction with class). Infancy through

adolescence. This course provides students with the foundational knowledge to evaluate and intervene as occupational therapy practitioners. Students will learn broad foundational concepts to be applied across diagnoses and populations. They will also learn the importance of a comprehensive holistic approach to human health.

OTH 5206 Occupations Across Lifespan (3) Prerequisite: Admission to Program. This course promotes knowledge of normal human development and occupational roles from infancy to older adulthood. Developmental theories, activities and tasks are explored. The student will develop skills in observation and assessment of occupational performance components and roles. Prerequisite: Admission to Program

OTH 5207C Biopsychosocial Development II w/Lab: Adulthood through Aging (5) Prerequisite: Admission to Program;OTH 5241 and OTH 5241L; OTH 5243 and OTH 5243L.This course examines adult typical, atypical development, diseases, disorders, conditions and trauma. Focus is on impact of atypical development and disease on function and purposeful occupations. Learning experiences within problem-based learning labs are provided with emphasis on the application of remedial and rehabilitation approaches to assist with successful adaptation and function within occupational performance roles for adults and the elderly.

OTH 5208 Level I Fieldwork: Adults and Aging (1) This practicum provides students with a modified problem based learning experience. This format will provide students with a forum within which they acquire basic knowledge, skills, and professional behaviors required in occupational therapy practice. This approach is student centered, and facilitated by academic and fieldwork educators. Students will articulate problem areas, brainstorm ideas, define learning plans, explore the evidence base, and synthesize knowledge learned with focus on the occupations during the lifespan of adults and the older adults in the settings of private clinics, school systems, and hospital based facilities.

OTH 5241 Human Gross Anatomy w/Lab (4) Prerequisite: Admission to program. Course includes micro and macroscopic structures and function of the human body with emphasis on musculoskeletal and neuromuscular systems. Lab includes dissection and study of prosected materials of micro and macroscopic structures of the human body with emphasis on musculoskeletal and neuromuscular systems.

OTH 5243 Functional Human Motion w/Lab (4) Prerequisite: Admission to program; Co-requisite: OTH 5241 and OTH 5241L. This course examines the physical and physiological aspects of human movement and the internal and external environmental influences on sensory motor functioning. Students learn the function and use of goniometers and participate in joint range of motion and muscle strength testing. The course applies the principles of physics and kinesiology to occupation and occupational performance across the lifespan.

OTH 5245 Neuroanatomy (3) Prerequisite: Admission to program. This course will emphasize the human nervous system. Focus will be on the brain and spinal cord, internal organization and structure, pathways, blood supplies and somatosensory systems.

OTH 5450 Fundamentals of Medical Sciences (3) Prerequisite: BSC 2093/2094 lecture/lab. Study of the pathophysiology and treatment of specific human diseases.

OTH 5723 Professional Development I (3) Prerequisite: Admission to Program. This course is designed to provide students with structured learning experiences that facilitate modeling of acceptable professional behaviors such as dependability, professional presentation, initiative, empathy and cooperation.

OTH 5766 Scientific Inquiry I (1) Prerequisite: Admission to program. This introductory research course will provide students with functional knowledge of the principles of scientific inquiry in health care. The primary focus of the course will be on research methods and designs, data analysis and basic principles of epidemiology. The course is designed to increase ability to read and comprehend current research that impacts on the delivery of occupational therapy services.

OTH 5932 Special Topics: Conditions (3) This course examines the effect of clinical conditions on occupational performance. The focus is on common health problems and their impact on a person's physical, psychological, cognitive and social functioning. Students will explore how contextual factors, such as the social and physical environment, affect client needs and occupational therapy services.

OTH 5935 Seminar I: Infancy through Adolescence (1) Prerequisite: Admission to program; OTH 5766. This seminar provides students with a modified problem-based learning experience. This model is student oriented, focused on student learning and facilitated by instructors or guest lecturers. Students will have the opportunity to attain knowledge, skills and adoption of professional attitudes.

OTH 6002 Health Care Foundations (2) Prerequisite: Admission to program. Course will examine and analyze the official doc uments of the AOTA that include the Code of Ethics, Core Values and Attitudes and Practice Framework. Analysis of position papers that impact the practice of Occupational Therapy.

OTH 6270 Occupational Pharmacology (2) Prerequisite: Admission to Program. Course is designed to present an overview of pharmacological principles that impact the delivery of occupational therapy services. Students are provided with comprehensive, accurate and relevant information on the impact of pharmacology on consumer's ability to participate in occupational roles and performance areas.

OTH 6715 Leadership and Management (3) Prerequisite: Admission to program. Course examines theoretical and practical models for development of effective and visionary management and leadership in health care systems, communities and emerging practice areas. Students will design, implement and integrate outcome of a needs assessment into occupation-based programs.

OTH 6727 Professional Development II (1) Admission to program; Successful completion of all didactic coursework; OTH 6938. The course content, provided within a workshop format, is designed to provide students with a review or overview of all core courses identified by NBCOT as test areas to be included on the national board exam. Strategies and test-taking skills will be emphasized and practice tests administered which the student must pass to graduate.

OTH 6767 Scientific Inquiry II (1) Prerequisite: Admission to program; OTH 5766. This research course culminates with the submission of the first of two drafts of student research proposals.

OTH 6768 Scientific Inquiry III (1) Prerequisite: Admission to Program; OTH 5766 and OTH 6767. Students will be provided with a forum to present, discuss and develop research proposals.

OTH 6830 Biopsychosocial Development III: Community Models (3) Prerequisite: Admission to program; OTH 5205. Students seek out, contract for, and engage in service-based experience. Students will implement their plan and conduct evaluation strategies. Designed to provide students with proactive entrepreneurial

skills necessary for new and emerging areas of practice.

OTH 6833 Practicum III: Community Models (1) Prerequisite: Admission to program; Co-requisite: OTH 5870. Course is designed to offer students supervised professional fieldwork experiences. The focus will be on understanding, analyzing and demonstrating clinical reasoning and problem solving skills within community models of practice.

OTH 6936 Seminar II: Adulthood through Aging (1) Prerequisite: Admission to program; OTH 5205. Provides students with a modified problem-based learning experience with focus on appropriate acquiring of knowledge, skills and adoption of professional attitudes.

OTH 6937 Seminar III: Community Models (1) Prerequisite: Admission to program; OTH 5935. Modified problem-based learning experience.

OTH 6938 Advanced Topics (1) This course is designed to develop student's critical thinking and test taking skills.

OTH 6941 Fieldwork: Rotation I (8) Prerequisite: Admission to program; Successful completion of all didactic coursework. The purpose of this twelve-week fieldwork experience is to integrate coursework into clinical practice. Students must demonstrate entry-level practice skills at the end of the rotation.

OTH 6942 Fieldwork: Rotation II (8) Prerequisite: Admission to program; Successful completion of all didactic coursework.
The purpose of this twelve-week fieldwork experience is to integrate coursework into clinical practice. Students must demonstrate entry-level practice skills at the end of the rotation.

The School of Allied Health Sciences, as recommended by faculty within the Division of Occupational Therapy, reserves the right to revise the curriculum at any time to facilitate students' receipt of current knowledge.

NBCOT Exam Preparation Course: During the week before commencement graduating students are required to be on campus and participate in a three day exam preparation course. This course enables the student to understand what, how and for how long they must review and study in order to pass the NBCOT examination. You are also required to pass a comprehensive examination prior to graduation. The exam is given three times, all tied to courses. The last class, Professional Development II is your third time to take the exam. A passing score of 70 or above is required to pass the exam and be eligible for graduation.

Division of Physical Therapy

Bachelor of Science in Health Science

The School of Allied Health Sciences offers a course of study that leads to the degree Bachelor of Science health science: pre-physical therapy concentration. The health science curriculum is designed to produce graduates capable of demonstrating those characteristics identified as desirable by employees of tomorrow's health care professionals.

The student majoring in health sciences graduates with a general degree that will allow that graduate to work in a health care setting or continue on to graduate school.

Currently, the health science major includes all of the courses required for entry into the physical therapy graduate program. **Therefore, it is recommended that students interested in majoring in physical therapy should major in health science at the undergraduate level.** Students who wish to apply to the physical therapy graduate program will major in health science pre-physical therapy concentration (see below). Those who wish to pursue occupational therapy will major in health sciences pre-occupational therapy concentration (see Division of Occupational Therapy for complete curriculum). The health science degree also provides the basis for students to pursue graduate education in other health care and science-oriented arenas. The health science degree is suitable for students wishing to pursue and graduate with general health –related knowledge to be used as the basis for work in the health-care setting. Additionally, students who already have an associate of arts (AA) degree who wish to pursue a Bachelor of Science degree and return to work in a related health arena would benefit from the health science degree. The degree is also useful for lower division pre-professional students who completed the necessary prerequisite courses for a professional program but were not accepted into that program. With the health science degree,
such students are still able to graduate in a health-related arena.

Curriculum

Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills I	3
MAC 1105 College Algebra	3
BSC 1010 General Biology I w/Lab	4
CHM 1045 General Chemistry I w/Lab	4
HSC 1000 Orientation to Health Sciences	1
Total	**15**

Spring Semester	**Sem. Hrs.**
ENC 1102 Freshman Communications Skills II	3
*STA 2023 Intro to Probability & Statistics	3
CHM 1046 General Chemistry II w/Lab	4
BSC 1010 General Biology II w/Lab	4
DEP 2004 Human Growth and Development	3
Total	**17**

Sophomore Year

Fall Semester	**Sem. Hrs.**
PHY 2053 College Physics I	3
PHY 2048L General Physics I Lab	1
#BSC 2093 Anatomy & Physiology I w/ Lab	4
AMH 2010 US History 1492-1865 OR	
AMH 2020 US History 1865-Present	3
PSY 2012 Intro to Psychology	3
XXX XXXX Humanities 1	3
Total	**17**

Spring Semester	**Sem. Hrs.**
PHY 2054 College Physics II	3
PHY 2049L General Physics II Lab	1
BSC 2094 Anatomy and Physiology II w/Lab	4
XXX XXXX Humanities 2	3
AFA 3104 African American Experience OR	
AMH 2091 African American History	3
Total	**14**

Junior Year

Fall Semester	**Sem. Hrs.**
HSA 3110 Organ & Admin HealthCare	3
HSC 3531 Medical Terminology	3
#HIM 3437 Fundamentals of Medical Science I	3
PHT 4028 Professional Development	3
XXX XXXX Elective 1	3
Toal	**15**

Spring Semester	**Sem. Hrs.**
SYO 3400 Medical Sociology	3
#HIM 3438 Fundamentals of Medical Science II	3
*HSA 4700 Health Care Research	3
HSC 3640 Health Law	3
HSC 4202 **Public and Community Health	3
RCS 3030 Introduction to Rehabilitation	
Total	**15**

Senior Year

Fall Semester	**Sem. Hrs.**
SYP 4730 Aging in America	3
RCS 4060 Psychosocial Aspects of Disability	3
RCS 3700 Disability and Society	3
RCS 4200 Intro to Vocational Evaluation	3
XXX XXXX Elective 2	3
Total	**15**

Spring Semester	**Sem. Hrs.**
MAN 3025 Principles of Management	3
CLP 4142 Abnormal Psychology	3
HSC 4634 Critical Health Issues	3
RCS 4610 Supervision and Coordination in Vocational Rehab	3
Total	**12**
Total Hours	**120**

*HSA 4700; Health Statistics/Research has a prerequisite of HSA 3110 &n ASTA 2023.
#HIM 3437; Fundamentals Medical Science I has a prerequisite of BSC 2093 & 2093L.
^HIM 3438; Fundamentals Medical Science II has a prerequisite of BSC 2093 & 2093L, BSC 2094 & 2094L.

Foreign Language Requirement

Prior to graduation, all students must have documentation showing completion of the foreign language requirement: two (2) years of the same language or American Sign Language taken in high school or eight semester hours at an accredited undergraduate institution.

Course Description

PHT 4028 Professional Development (3) Students will learn aspects of professionalism and how to develop specific professional behaviors. The course will emphasize behaviors that are highly valued such as professional demeanor, teamwork, organizational skills, empathy, and initiative. Teaching professional behaviors will also be accomplished through the role modeling/mentoring approach. Students will be provided guidance through definitions of professional behaviors, both as students and clinicians. These behaviors are woven through categories which will include: dependability, professional presentation, initiative, empathy, cooperation, clinical reasoning, supervisory processes, verbal communication, and written communication. As students and future therapist, these behaviors and skills are necessary to survive in an ever-changing, evolving, and dynamic market place. Students will learn that professionalism and professional behaviors needs to be a conscious, active and deliberate process on the part of health care practitioners.

Division of Physical Therapy
Doctor of Physical Therapy

Physical therapy (PT) is a challenging profession for men and women who are interested in the fields of science and medicine and who like to work with people. As an allied health profession, it involves the evaluation and treatment of individuals with a va riety of problems, such as musculoskeletal, neurological, and cardiovascular difficulties related to disability, injury, disease and aging. The therapist evaluates, plans, administers, and modifies treatment incorporating the use of physical measures, functional activities, and electrotherapeutic devices for restoring function and promoting independence. Physical therapy requires knowledge in biological, physical, and behavioral sciences such as psychology, gross and applied anatomy, physiology, and physics. It utilizes knowledge acquired through prerequisite foundational courses in the application of current treatment philosophies and therapeutic modalities.

Physical therapists work closely with physicians, occupational therapists, nurses, speech and language pathologists, psychologists and other members of the health care team. They practice in a wide variety of settings—including hospitals, rehabilitation centers, school systems, private offices, and the home and serve patients from all age groups. Whether patients are recovering from knee surgery, neck pain, carpel tunnel syndrome, or arthritis or learning to walk again after a stroke, physical therapists help them regain function by improving the ability of muscles, nerves, and joints to move efficiently and effectively.

Physical therapists also play a significant role in the prevention of injuries and movement disorders. They work as consultants in industrial settings to improve workplace design and reduce the risk of workers overusing certain muscles or developing low back pain. Physical therapists also screen athletes at all levels for potential problems and recommend preventive exercise programs. The growing emphasis on health and fitness of all Americans provides opportunities for physical therapists to consult with individuals and fitness clubs to develop workouts that are safe and effective, especially for people who already know they have a problem with their joints or back.

The Division of Physical Therapy at Florida A & M University was established in 1981, becoming the third physical therapy program in the State University System (SUS) of Florida. The first class of students was admitted to the baccalaureate program in 1982; the last baccalaureate class graduated in August, 2001. Currently, all applicants for the Doctor of Physical Therapy program must have completed a bachelor's degree and have satisfied all FAMU graduate school admission requirements prior to admission to the program. Consistent with other SUS physical therapy programs,

applicants accepted into the FAMU program will be admitted as graduate students in the 34-month professional curriculum.

Accreditation Status

Florida A&M University has been granted accreditation by the Commission on Accreditation in Physical Therapy Education (CAPTE) for the Doctor of Physical Therapy curriculum.

1111 North Fairfax Street
Alexandria, Virginia 22314
Telephone: 703-706-3245
email: accreditation@apta.org
website: www.capteonline.org

Professional Credentials

A Doctor of Physical Therapy degree (DPT) is awarded upon successful completion of the curriculum. Also, the graduate is eligible to apply for the physical therapy licensing examination.

Admissions Criteria

Applicants to the program must meet the minimum requirements for admissions, including: (1) a baccalaureate degree from an accredited college or university; (2) a grade-point average of 3.0 or better in the last 60 semester hours (or 90 quarter hours) of undergraduate work completed; or (3) possession of a graduate degree from an accredited institution of higher education; and (4) a preferred score of 300 on the verbal and quantitative sections of the Graduate Record Examination (GRE). In addition to the above criteria, the overall science GPA is considered in the process of admission into the Division of Physical Therapy, entry-level doctoral degree program.

Applicants are required to submit an application to the School of Graduate Studies and Research admissions office, an application for admission to the Doctor of Physical Therapy program (DPT) in the School of Allied Health Sciences, an autobiographical essay (300-500 words), evidence of 20 hours of volunteer/observations/work experience in a physical therapy setting, two letters of recommendation, and an official copy of transcripts from all colleges or universities attended. Acceptance into the Florida A&M University School of Graduate Studies and Research does not guarantee acceptance into the physical therapy program.

Curriculum

The Doctor of Physical Therapy (DPT) curriculum is built on a broad foundation of liberal arts, social sciences, and basic sciences. Therefore, applicants to the entry level master's program must have a bachelor's degree from an accredited institution and must also be able to demonstrate, by official transcript completion of the physical therapy program prerequisites. Course-work within the professional curriculum challenges students to build on their undergraduate background by incorporating a balance of foundational and clinical sciences; critical inquiry; clinical practice; and studies of society, health care delivery, and physical therapy practice. The curriculum is designed to provide students with a combination of didactic and clinical experiences necessary to perform effectively and efficiently as entry level physical therapists, as well as to successfully prepare for the licensing process.

Standards of Academic Progression
Students in the program should complete the curriculum at the time and in the sequence that the courses are offered to allow completion of the program in the requisite 34 month time-frame. The policies below are designed to serve as a guide for students en rolled in the Division of Physical Therapy (DPT) program. It is the responsibility of each student to review and adhere to the policies and procedures pertaining to academic progression, grading, graduation, and clinical participation.

For the purpose of progression, only graduate level courses are allowed to be taken in the DPT Program. If undergraduate courses are taken while enrolled in the DPT program, they shall be taken only with the permission of the Director and those credits earned shall be excluded from GPA calculations.

The Minimum Grade Requirements for the Doctor of Physical Therapy (DPT) program
For the purpose of academic progression

- Only a cumulative GPA of 3.0 or higher is acceptable within the DPT program.
- A course grade of a "D", "F", or "U", is deemed a failing grade.
- Any failed course must be repeated.
- A student may repeat no more than two failed courses and each failed course only once.
    - o The failed course must carry the same course prefix, number, and description.
    - o The same course must be repeated in the order that it appears within the curriculum which may delay the graduation of the student.
    - o Both grades will be used in computing the student's graduate GPA.

If a student's graduate cumulative GPA falls below 3.0, documentation of the Academic status (Warning, Probation or Dismissal) will be imprinted on the student's university transcript by the Registrar.

ACADEMIC WARNING, PROBATION, OR PERMANENT DISMISSAL
A graduate student whose cumulative GPA is less than 2.0 or who has a failing grade in more than 2 courses will be immediately dismissed from the DPT program and will not be permitted to enroll in graduate courses, unless the student has been admitted into another graduate program.

The academic requirements for the DPT include the satisfactory completion of the curriculum designated by the faculty. It is the responsibility of each student to review and adhere to these policies and procedures. If any student is having academic or behavioral problems, the DPT Academic Progress Committee (APC) will review the situation and make recommendations to the Division Director.

The APC will meet to assess the performance of each student once, at the end of each semester as needed to include review of any "I",

"D", "F", or "U course grades and their impact upon the student's progress in the program.

Students must maintain a 3.00 cumulative grade point average (GPA) or better at the end of each semester of enrollment to be considered in good academic standing. If a student's graduate cumulative GPA falls below 3.0, documentation of the Academic

status (Warning, Probation or Permanent Dismissal) will be imprinted on the student's university transcript by the Registrar. Additionally the student will be referred to the APC.

If at the end of any given semester a student's cumulative GPA is below 3.00, the student will be sanctioned as follows.

1. Academic Warning

A student will be placed on academic warning if:

o The student earns less than a 3.0 cumulative GPA in any one (1) semester of the Doctor of Physical Therapy program.

Documentation of the academic warning will be placed on the student's university transcript by the registrar.

2. Academic Probation

A student will be automatically placed on academic probation if:

o The student earns less than a 3.0 cumulative GPA (i.e. GPA between 2.00 to 2.99) in two consecutive semesters of the DPT program.

Documentation of the academic probation will be placed on the student's university transcript by the registrar.

3. Permanent Dismissal

A student will be permanently dismissed from the DPT program without any opportunity for further appeal for retention for any of the following reasons

a. If the APC recommends dismissal which is then endorsed by the division director;

b. If an appeal is successful and the student does not earn a cumulative GPA of 3.0 or better in the subsequent semester following the suspension; or

c. If a student obtains a second warning and does not earn a cumulative GPA of 3.0 or better the following term after the second warning; or in any semester after the second warning.

d. If the student's cumulative GPA is less than 2.0

e. If the student has a failing grade in more than 2 courses, or has failed the same course twice.

In addition to the above standards of progression, all students must have a cumulative grade point average of at least 3.0 in order to graduate from the Doctor of Physical Therapy program. Students must also score at least 70% or better on the physical therapy program's comprehensive examination.

A student is ineligible for clinical placement, while on academic warning, probation, or suspension. Additionally, a student, who has failed a course or who has received an "I" (incomplete) grade is ineligible for clinical placement until the course has been successfully completed with a "C" or better.

Clinical Experiences

The physical therapy curriculum at FAMU includes opportunities for "hands-on" experiences as well as classroom instruction. Under the supervision of a licensed physical therapist, students have the opportunity to problem-solve and to apply knowledge and

skills under "real world" conditions. Three full-time internships (non-paid) are scheduled throughout the program, totaling over 1200 clock hours. The final semester of the program consists of two eight-week internships. Practically all internships are out-of-town. The assignments are usually within the State of Florida, although there are a number of clinical sites that are located throughout the United States.

Clinical centers are selected based on criteria endorsed by the Commission on Accreditation of Physical Therapy Education (CAPTE). While students are encouraged to provide input in the clinical placement process, the academic coordinator of clinical education has the ultimate responsibility for clinical assignments.

Prospective students should realize that, in all probability, they will have to stay at an out-of-town location for a period of time ranging from eight to sixteen-week blocks. Cost of living expenses, housing and travel arrangements as well as all other expenses incurred during clinical internships are the sole responsibility of the student. Expenses (including lodging, utilities, meals, possibly airfare, local transportation/gasoline) will depend on factors such as the geographical location, the length of the affiliation, family support in the area, etc. By far, the location of affordable housing for internships presents the greatest challenge to students.

Faculty

Associate Professors: Brown-Cross, Dawn; Thomas, Tracy;
Assistant Professors: Dalal, Rajiv; Reaves, Phyllis; Reed, Kischa S.; Smothers, Bernard
Visiting Professor: Gendy, Sherif

Physical Therapy Prerequisite Courses

All prerequisite courses must be completed prior to entrance into the program.

Biological Sciences

BSC 1010 General Biology I w/Lab	4
BSC 1011 General Biology II w/Lab	4
BSC 2093 – Anatomy and Physiology I w/Lab	4
BSC 2094 – Anatomy and Physiology II w/Lab	4

Chemistry

CHM 1045 – General Chemistry I w/Lab	4
CHM 1046 - General Chemistry II w/Lab	4

Mathematics

STA 2023 – Introduction to Probability & Statistics.	3

Psychology

DEP 2004 – Human Growth & Development	3
PSY 2012 – Intro to Psychology	3

***Physics**

PHY 2053 – College Physics I 3
PHY 2053 General Physics I lab or
PHY 2048 – General Physics I Lab 1

PHY 2054 – College Physics II 3
PHY 2059 - General Physics II Lab 1
*The following courses may be substitute for the Physics courses above:
PHY 2004 – Elements of Physics I w/Lab 4
PHY 2005 – Elements of Physics II w/Lab 4

Note: A grade of C (not C-) is the minimum grade considered as acceptable for any one of the prerequisite courses. However, the "average" grade required across all prerequisite science courses is B (3.0).

Curriculum Outline

Doctor of Physical Therapy Curriculum

Year One

Fall Semester	**Sem. Hrs.**
PHT 5115 – Gross Anatomy w/Lab	4
PHT 5154 – Human Physiology	3
PHT 5125 – Analysis of Human Motion I w/Lab	3
PHT 5025 – Professional Behavior	1
PHT 5149 – Life Span Development	2
Total	**13**

Spring Semester	**Sem. Hrs.**
PHT 5166 – Neuroscience	3
PHT 5156 – Exercise Physiology w/Lab	3
PHT 5306 – Pathology & Pharmacology	2
PHT 5202 – Patient Care Skills w/Lab	3
PHT 5178 - Analysis of Human Motion II w/Lab	3
PHT 5606 – Scientific Inquiry I	1
Total	**15**

Summer Semester	**Sem. Hrs.**
PHT 5246 - Orthopedic I w/Lab	3
PHT 5161 - Neurology I w/Lab	3
PHT 5380 - Cardiopulmonary I w/Lab	2
PHT 5243 - Integument w/Lab	2
PHT 5932 – Clinical Integration I	2
PHT 5024 – Health Care Systems and Administration	2
PHT 5805 - Clinical Education I	1
Total	**15**

Year Two

Fall Semester	**Sem. Hrs.**
PHT 6248 - Orthopedics II w/Lab	3
PHT 6719 – Neurology II w/Lab	3
PHT 6381 – Cardiopulmonary II w/Lab	2
PHT 6618 – Scientific Inquiry II	1
PHT 6219 – Physical Agents and Electrotherapy w/Lab	3
PHT 6733 - Special Topics in Physical Therapy	2
PHT 6934 – Clinical Integration	2
Total	**16**

Spring Semester	**Sem. Hrs.**
PHT 6713 – Prosthetics and Orthotics w/Lab	2
PHT 6420 – Teaching and Learning	1
PHT 6312 – Orthopedic III w/Lab	3
PHT 6328 – Pediatric Physical therapy	2
PHT 6373 – Gerontology	2
PHT 6620 - Scientific Inquiry III	1
PHT 6935 - Clinical Integration III	2
PHT 6402 – Psychological Aspects of Disability	1
Total	**14**

Summer Semester	**Sem. Hrs.**
PHT 6822 – Clinical Education II	4
PHT 6823 - Clinical Education III	4
Total	**8**

Year Three

Fall Semester	**Sem. Hrs.**
PHT 6730 Advanced Differential Diagnosis	3
PHT 6960 Professional Physical Therapy Practice	2
PHT 5070 Diagnostic Testing/Evaluation	3
PHT 6151 Health Promotion and Wellness	3
PHT 6609 Advanced EBP	3
Total	**14**

Spring Semester	**Sem. Hrs.**
PHT 6824 – Clinical Education IV	8
Total	**8**
Didactic Learning	**86**
Clinical Education	**17**
TOTAL	**103**

DPT Course Descriptions

PHT 5024 Health Care Systems and Administration (2) This course provides an overview of business and financial management principles for physical therapy operations. Emphasis will be placed on important current issues confronting physical therapists, areas having direct fiscal implications for physical therapists and the health care environment today and means of anticipating change in the future.

PHT 5025 Professional Behavior (1) An overview of professional behavior, communication and ethics. Students will be introduced to behaviors of an individual in a service profession and strategies for development of these behaviors. Topics in Ethics include deontological and teleological ethics, methods to identify and analyze ethical dilemmas in the practice of physical therapy, application of the APTA Code of Ethics and Guide for Professional Conduct to solving ethical dilemmas, and state and federal laws that apply to physical therapy.

PHT 5070 Diagnostic Testing in PT Practice (3) This course is designed to provide a basic understanding of the indications and implications of commonly the students used diagnostic imaging tests related to physical therapy practice, including X-rays, MRI, bone scans, CT scans, PET scans, ultrasound and other diagnostic tests and allow him to be able to integrate findings with physical therapy diagnoses. Emphasis will be placed on interpreting images as it relates to the physical therapy treatment.

PHT 5115 and PHT 5115 L Gross Anatomy/Lab (4) Basic description of the musculoskeletal system. Lecture and laboratory

with emphasis placed on locating muscle, associated joints, ligaments, tendons, nerves, and blood supply. Human structures are reviewed by regions and include clinical correlations.

PHT 5125 and PHT 5125 L Analysis of Human Motion I/Lab (3) An introductory course on the scientific study of human motion (Kinesiology) emphasizing the basic concepts of Kinesiology, the

study of human arthrology, myology and gait with a focus on muscle and joint kinematics and pathokinematics.

PHT 5149 Life Span Development (2) This course covers human development from conception to death with special emphasis on normal and abnormal movement development. Critical stages in movement development, such as infancy and aging, will be examined. The course will include physical, cognitive, psychological and social aspects of development that influence the lives of individuals. Cultural factors important to development will also be identified.

PHT 5154 Human Physiology (3) Introduction to Human Physiology. Course will emphasize the function and coordinated activities of selected cellular processes and organ systems and the interdependence of these systems for normal whole body function. Physical therapists must understand normal physiologic principles in order to remedy impairments and maximize function in one's environment.

PHT 5156 and PHT 5156 L Exercise Physiology/Lab (3) Study of the human body's physiological responses to acute exercise and chronic physical training.

PHT 5161 and PHT 5161 L Neurological PT I/Lab (3) This course will introduce the physical therapy student to the examination, evaluation, diagnosis, prognosis and treatment of clients with neuromuscular disorders. Testing for sensation, cognition, perception, muscle tone, vestibular function, balance and gait will be covered. The concepts of motor learning and control will be covered as a scientific basis for PT treatments of clients with neuromuscular disorders such as cerebral vascular accidents.

PHT 5166 Neuroscience (3) Study of gross features and development of the brain and spinal cord, including internal organization and structure, pathways, blood supply, and somatosensory, motor, and integrative systems. Will include neurophysiological concepts, clinical manifestations of the central nervous system, pain pathways and clinical correlations.

PHT 5178 and PHT 5178L Analysis of Human Motion II/Lab (3) A biomechanics course with an emphasis on the lower quarter and gait. Students will be introduced to isokinetic testing, electromyography and motion analysis equipment and methods develop their observational gait analysis skills; be involved in small group projects and write critiques on biomechanics related research articles. The integration of biomechanics into clinical application and practice in the physical management of musculoskeletal tissues and joints are absolutely necessary

PHT 5202 Patient Care Skills/Lab (3) Introduction to primary clinical physical therapy skills; bed mobility skills, positioning, draping, transfers, wheelchair prescriptions and mobility skills, basic gait patterns and gait training with assistive devices, gross assessment of activities of daily living, home site evaluations and modifications of architectural barriers and introduction to adaptive equipment.

PHT 5243 and PHT 5243L Integument PT/Lab (2) Overview of the management of the integumentary system in practice, including normal wound healing, patient examination and evaluation, diagnosis, prognosis, treatment interventions, and outcomes.

PHT 5246 and PHT 5246 L Orthopedic PT I/Lab (3) Principles of physical therapy management of individuals with orthopedic diseases and dysfunction.

PHT 5306 Pathology and Pharmacology (2) An introductory course on pathology and pharmacology and its implications on Physical Therapy practice. Students will appraise relevant pathologies and psychological and medication induced conditions that could affect their patient care management.
for all students.

PHT 5380 and PHT 5380L Cardiopulmonary PT I/Lab (2) Principles of physical therapy management of individuals with diseases and dysfunction of the cardiopulmonary systems.

PHT 5606 Scientific Inquiry I (1) This course is designed to introduce students to the principles of scientific inquiry in health care. The course will include research design, research methods and data critique and analysis. The students will be required to access and critique research literature.

PHT 5805 Clinical Ed. I (1) Students are introduced to professional physical therapy practice through a clinical-observation experience. Students observe physical therapist practitioners managing patients/clients with musculoskeletal, neuromuscular, cardiopulmonary and integumentary disorders. Students observe practitioners apply examination, evaluation and diagnostic procedures, and develop and implement a plan of care that includes determining prognoses and intervention measures. Students also have opportunities to develop communication skills and observe various supervisory and administrative functions that a Physical Therapist Practitioner performs.

PHT 5932 Clinical Integration I (2) Integration of foundational and clinical science courses to develop clinical decision making skills for physical therapy practice. Students are presented clinical case studies of complex patients with multiple co-morbidities involving orthopedic, neurological, cardiopulmonary, and integumentary disorders commonly seen in physical therapy practice. Students then formulate an evidence-based practice physical therapy plan of care.

PHT 6151 Health Promotion and Wellness (3) This course will provide an extensive study of wellness principles with practical application of skills to enhance the physical therapist's ability to be able to assess family health care needs and access and practice and consult in health promotion and wellness. Students will learn to seek out community resources and develop specific fitness and wellness strategies for physical therapy populations over the life span, including basic nutrition, education and marketing strategies.

PHT 6219 and PHT 6219L Physical Agents and Electrotherapy/Lab (3) Theory and practice of physical therapy agents such as light, sound, water, superficial and deep heat, and electrical current as interventions for clinical problems such as edema, pain loss of motion, and tissue dysfunction.

PHT 6248 and PHT 6248L Orthopedics PT II/Lab (3) Advanced principles of physical therapy management of individuals with orthopedic diseases and dysfunction.

PHT 6312 and PHT 6312 L Orthopedic III PT/Lab: This is the last of three courses designed to introduce the entry-level D.P.T. student to the elements of patient/client management in the orthopedic setting. This course will emphasize the musculoskeletal system and follow both the sequence and nomenclature outlined in the Guide to Physical Therapist Practice including examination, evaluation, diagnosis, prognosis, intervention, and outcomes. Stu-

dents will acquire the cognitive, psychomotor, and affective skills necessary to conduct a general musculoskeletal examination communication and history taking, systems review, symptom physiology, selection and administering tests and measures, and perform interventions relevant to physical therapy practice specific to this

advanced course on arthrology, principles of manual therapy, soft tissue/myofascial intervention, extremity and spine mobilization (non-thrust), and common disorders and injuries, joint evaluations, thrust and non-thrust mobilization techniques, indications and contraindications to joint mobilization of the extremities, spine and TMJ. At completion of this course students will have acquired the requisite knowledge to learn advanced diagnoses and interventions. Case studies will be utilized in conjunction with lecture, laboratory skill practice, and interactive teaching and learning methods to integrate didactic knowledge into real-life clinical scenarios.

PHT 6328 Pediatric PT (2) The course will cover principles of pediatric examination, evaluation, diagnosis, prognosis and treatment.

PHT 6373 Gerontology (2) Identification of the unique challenges presented by the well and ill older individual with the identification of strategies to manage these problems.

PHT 6381 and PHT 6381L Cardiopulmonary PT II/Lab (2) Advanced principles of the physical therapy management of individuals with diseases and dysfunction of the cardiopulmonary systems.

PHT 6402 Psychological Aspects of Disability (1) The study of the psychosocial aspects of rehabilitation in physical therapy care. PHT 6420 Teaching and Learning (1) Introduction to learning theory and teaching methods used to identify individual learning styles and enable the learner to have a successful learning experience. This information will relate to learners in multiple learning situations.

PHT 6609 Advanced Evidence Based Practice (3) This course will focus on a review and critique of physical therapy literature, including validity and reliability of measurement and sampling procedures that will assist students in making clinical decisions that are consistent with the professional literature. Students will enhance their understanding of evidence-based practice, including how to generate clinical questions and critically apply the literature to determine its application to patients with cardiopulmonary, orthopedic, neurological, and other medical problems.

PHT 6618 Scientific Inquiry II (1) Students participate in research projects in collaboration with their research advisor. Students may be engaged in proposal writing, data collection, data analysis, and interpreting and reporting their findings.

PHT 6620 Scientific Inquiry III (1) Students will participate in a research project in collaboration with their research advisor. Students may be engaged in proposal writing, data collection, data analysis, and interpreting and reporting their findings. Students will disseminate the findings of their study in a formal presentation, such as a poster presentation in a research forum or scientific meeting.

PHT 6713 and PHT 6713L Prosthetics and Orthotics/Lab (2) Management of the upper and lower extremity amputee and overview of the phases of prosthetic management, including the rationale and guidance for selecting orthoses for orthopedic and neurologically impaired patients of all ages.

PHT 6719 and PHT 6719L Neurological PT II/Lab (3) This course will explore in depth the examination, evaluation, diagnosis, prognosis and treatment of clients with neuromuscular disorders such as multiple sclerosis, Parkinson's disease, balance disorders and closed head injuries. The physical therapy student will be taught neurophysiological PT treatments for clients with neuromuscular disorders.

PHT 6730 Differential Diagnosis (3) This course is designed to assist the physical therapy student to be able to consider and identify signs and symptoms associated with a broad spectrum of conditions and pathologies represented by musculoskeletal, cardiopulmonary, neurological and systemic diseases, specifically where differential diagnosis is important for the successful outcome of rehabilitation interventions for clients. Emphasis is placed on methods to determine the most appropriate intervention strategy for each patient or client through the diagnostic process including referral to other appropriate healthcare providers.

PHT 6733 Special Topics in Physical Therapy (2) The purpose of this course is to provide the physical therapy student additional information concerning medical special interest groups, issues, or conditions, such as women's health. This knowledge will be integrated and applied into the physical therapy plan of care.

PHT 6822 Clinical Ed. II (4) A supervised full-time, eight-week clinical education experience in a selected physical therapy setting which is designed to provide students the opportunity for mastery of a variety of skills, as well as administration and supervision in physical therapy, under the supervision of a licensed physical therapist. Students are expected to practice in a safe, professional, ethical manner with adherence to legal standards.

PHT 6823 Clinical Ed. III (4) A supervised full-time, eight-week clinical education experience in a selected physical therapy setting which is designed to provide students the opportunity for mastery of a variety of skills, as well as administration and supervision in physical therapy, under the supervision of a licensed physical therapist. Students are expected to practice in a safe, professional, ethical manner with adherence to legal standards.

PHT 6824 Clinical Ed. IV (8) A supervised full-time, sixteen-week clinical education experience in a selected physical therapy setting which is designed to provide students the opportunity for mastery of a variety of skills, as well as administration and supervision in physical therapy, under the supervision of a licensed physical therapist. Students are expected to practice in a safe, professional, ethical manner with adherence to legal standards.

PHT 6934 Clinical Integration II (2) Integration of foundational and clinical science courses to develop clinical decision making skills for physical therapy practice. Students are presented clinical case studies of complex patients with multiple co-morbidities involving orthopedic, neurological, cardiopulmonary, and integumentary disorders commonly seen in physical therapy practice. Students then formulate an evidence-based practice physical therapy plan of care.

PHT 6935 Clinical Integration III (2) Integration of foundational and clinical science courses to develop clinical decision making skills for physical therapy practice. Students are presented clinical case studies of complex patients with multiple co-morbidities involving orthopedic, neurological, cardiopulmonary, and integumentary disorders commonly seen in physical therapy practice. Students then formulate an evidence-based practice physical therapy plan of care.

PHT 6960 Professional PT Practice (2) This course is designed to examine and evaluate student's preparation for professional

Physical Therapy practice prior to the third and fourth clinical education experiences. It will review the current physical therapy licensure examination test blueprint and the strategies for successful completion of the licensure exam. It will also test current

preparation via diagnostic tests in particular content areas and will be administered by the professors who have previously taught in the curriculum. A final comprehensive exam will be administered during the last week of the course.

Admission Application Procedure

The entry-Level Doctor of Physical Therapy (DPT) program selects students based on cumulative grade point average (GPA), prior academic performance, GRE scores from ETS (Educational Testing Service), physical therapy volunteer or work experience, completed application, and letters of recommendation.

Students are admitted to the program during the fall semester only. Graduate students in the program must maintain a 3.0 grade point average (GPA) during the program. Students are strongly encouraged to be involved in professional development through participation in the American Physical Therapy Association events and other professional and academic opportunities at the local, state, regional, national, and/or international level.

How to Apply

The FAMU Doctor of Physical Therapy program participates in the Physical Therapist Centralized Application Service (PTCAS).
PTCAS
P.O. Box 9112
Watertown, MA 02471
ptcasinfo@ptcas.org
(617) 612-2040

PTCAS may take up to 6 weeks to verify supporting documents. Therefore, early application is highly recommended.
PLEASE NOTE: It is your responsibility to confirm that all your materials have been received by contacting PTCAS to confirm receipt of materials.

Materials that must be submitted as part of PTCAS application

A completed application includes:

- The PTCAS application form online at www.ptcas.org
- An autobiographical essay, as described on the PTCAS application.
- Official transcripts for all college and university coursework
- Verification of completion of a minimum of 20 hours of clinical observation or work in a physical therapy setting under the supervision of a licensed physical therapist
- Two letters of recommendation (using the form provided by PTCAS) from faculty, academic advisors, physical therapists, or employers addressing the applicant's ability, motivation, and interest in pursuing graduate studies in physical therapy.
- Official Graduate Record Examination (GRE) scores to PTCAS: a minimum combined score of 300 on the quantitative and verbal sections of the Graduate Record Examination (GRE), AND a GRE analytical writing score of ≥3.0.The GRE code for FAMUs Doctor of Physical Therapy program is 5215. GRE scores must be less than 5 years old.

Other Requirements

The FAMU School of Graduate Studies and Research also requires the following items to be sent directly to the Office of Graduate Admissions:

- A $30 non-refundable application fee.
  - o A Graduate School Application which includes a residency classification section. You must obtain the application from the FAMU School of Graduate Studies and Research
  - o You will need to choose one of the following application forms based on your specific circumstance:

- Admission application for current FAMU students and FAMU alumni

- Admission Application for non-FAMU U.S. Students

- Admission Application for International Students

- If an applicant is from a country where English is not the 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 from a university where English is the only official language of instruction.
  - o Test of English as a Foreign Language (TOEFL= 550/ paper-based; 80 internet-based) or International English Language Testing System (IELTS) scores (6.5) sent directly to FAMU from the Testing Service,

- Immunization Form at http://www.famu.edu/index.cfm?shs&Immunizations. To expedite processing, please download and print the Immunization Form and mail the completed form to the address specified on the form.

- Evidence of Health Insurance.

- Criminal background checks and/or drug screenings will be requested of applicants who are admitted into the professional program.

PLEASE NOTE: ONLY COMPLETE APPLICATION FILES WILL BE CONSIDERED. It is your responsibility to confirm that all your materials have been received by PTCAS and subsequently by the School of Graduate Studies & Research.

Florida A&M University
School of Graduate Studies and Research
Admissions Office
515 Orr Drive,
Room 469 Tucker Hall

Tallahassee, FL 32307
(850) 599-3505

Once FAMU has received the completed PTCAS application, the Graduate School's supplemental application, and the $30 application fee, your file will be reviewed by the Physical Therapy Division's Committee on Admission. Final admission to the University is subject to approval by the Graduate Office of Admissions.

Satisfactory Academic Progress: http://www.famu.edu/FinancialAid/2013-2014%20Documents/2013_2014_SAP%20Procedures%20Final%20Website.pdf

School of Architecture & Engineering Technology

The School of Architecture & Engineering Technology (SA+ET) is a professional school committed to preparing its graduates for excellence in the practice of architecture, construction, and electronics. The SA+ET consist of two divisions. The Division of Architecture offers the Bachelor of Science in Architectural Studies, the National Architectural Accrediting Board (NAAB) accredited Bachelor of Architecture, the NAAB accredited Master of Architecture and the Master of Science in Architecture. The Division of Engineering Technology offers the Accrediting Board for Engineering and Technology, Inc., (ABET) accredited Construction Engineering Technology and the ABET accredited Electronic Engineering Technology degree. All students who wish to become creative and active leaders in either discipline are welcomed to the School's programs. Minors in Architecture, Engineering Technology (general), Construction Engineering Technology, and Electronic Engineering Technology also are offered through the SA+ET.

Admission

Admission to all programs is by formal application to the university. All applications are evaluated individually on the basis of the applicant's academic achievements. Additional consideration may be given for work experience in the field, evidenced in a portfolio, and written and oral communication skills.

Faculty

The faculty are a distinguished group of people with an exceptional range of interests and talents. In addition to teaching, faculty members engage in research and professional development in energy conservation, structural systems, environmental education, low-cost housing, building use programming, architectural communications, and computer-aided design. The low faculty-to-student ratio allows close student contact with the faculty and personal academic advisement.

Students

Students in the School of Architecture and Engineering Technology form a highly diverse group of individuals with a wide range of backgrounds and knowledge. Coming from all over the world, some students enter the SA+ET as high school graduates; others come as transfer students, second-degree candidates or as graduate students. Students are encouraged to become involved in the school's professional organizations, professional fraternities, service organizations and honor societies. Student participation in these organizations provides a valuable service to the school as well as an important leadership-learning experience for members. The SA+ET Dean's Council includes student representatives from both divisions and every level of the program. The council works closely with the dean on all matters of interest to students.

Building and Equipment

The Division of Engineering Technology is housed in the Benjamin Banneker complex. The Division of Architecture is housed in the Walter Smith Architecture building. The buildings offer a complete range of resources, sophisticated laboratories for student use, exhibition space for national and international shows and student displays, and indoor and outdoor areas for student gatherings. The computer laboratories are freely accessible to all students and science and technology laboratories are used for instruction and research in environmental controls, electronics and structures. Equipment is available for energy analysis and studies of the climate and the physical environment. A model-building and construction laboratory is equipped for presentation modeling, three-dimensional space analysis, and experimental studies.

Research

The Institute for Building Sciences (IBS) coordinates the research, service, and continuing education activities of the SA+ET. Through the institute, faculty and students have conducted research and service projects for state and federal government agencies, non-profit foundations and organizations, and industry. Many IBS projects have included international collaborations and funding. Projects have ranged from statistical surveys, analytical studies, and comparative investigations to laboratory-intensive evaluations of building materials and construction methods and Internet-based information dissemination systems. In addition, IBS has conducted numerous symposia, workshops, seminars, and conferences for design professionals, contractors, developers, manufacturers, public officials, and others involved in the design, construction, and management of buildings.

Special Programs and Events

SA+ET students' education is greatly strengthened by visiting critics and lecturers. Therefore, distinguished guests are invited to give a broad range of views. In addition to lecturing, visitors are asked to spend additional time with students discussing potential career opportunities. A guest lecture series is offered each semester and elective courses are regularly offered. The school also realizes special opportunities to work with many state and federal agencies and to be active in helping to establish governmental policies affecting education. To enhance the curriculum, students have the opportunity to travel around the United States, the Caribbean, Central America, and Europe.

Financial Aid

A variety of financial aid sources are available to students, including federal and state loans, grants, and scholarships. Financial aid, in the manner of student loans, is not awarded by the SA+ET. Application must be made to Florida A&M University. Students are encouraged to file financial aid forms as early as possible prior to the scheduled deadlines. For more complete information and forms, write to: Financial Aid Office, Room 101 FHAC, Florida A&M University, Tallahassee, Florida 32307.

Division of Architecture

Accreditation

In the United States, most state registration boards require a

degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the bachelor of architecture, the master of architecture and the doctor of architecture. A program may be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards. Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Center of Excellence

Recognizing the need for more architects to be educated in the State of Florida, especially African Americans, and to attract white and other racial groups to this historically black university, the State University System founded the Division of Architecture at Florida A&M University in 1975. In 1978, the State University System selected one "center of excellence" on each of its nine state campuses. Each of these programs received additional funding, and at Florida A&M, the School of Architecture received this distinction.

Degree Programs

The Division of Architecture offers the NAAB professionally-accredited bachelor and master of architecture degrees as well as the pre- and post-professional Bachelor of Science in architectural studies and the Master of Science in architecture-facility management degrees. The four-year pre-professional Bachelor of Science architectural studies (B.S.) degree of the FAMU School of Architecture is not accredited by NAAB. This pre-professional degree is preparation for either continued education in the professional degree programs or, secondarily, for employment options in architecturally related areas. The bachelor of architecture (B.Arch.), which requires a minimum of five years of study, and the master of architecture (M. Arch.), which requires a minimum of two years of study, follow a related pre-professional bachelor's degree. The professional degrees are structured to educate those who aspire to architectural registration/ licensure. As a limited access program with a fixed facility, admission to the Division of Architecture is competitive.

Minor in Architecture

Students completing a bachelor's degree in other academic programs may earn a minor in Architecture by completing the following courses (18 credit hours):

1. ARC 1301 Design 1.1	4
2. ARC 1302 Design 1.1	4
3. ARC 1003 Orientation to Arch	1
or ARC 1160 Computer App	
4. ARC 2470 Introduction to Technology of Architecture	3
5. ARC 2201 Theory in Architecture	3
6. ARC 2701 Architectural History 1	3
18 credit hours	

Bachelor of Science in Architectural Studies and Bachelor of Architecture

Freshman Year	**Sem. Hrs.**
Fall	
ARC 1003 Orientation to Architecture	1
ARC 1301 Design 1.1*	4
ENC 1101 Freshman Communication Skills I	3
AMH 2091 Intro African American History	3
MAC 1114 Algebraic/Trigonometric Functions	3
Total	**14**
Spring	
ARC 1302 Design 1.2*	4
ENC 1102 Freshman Communication Skills II	3
MAC 2311 Calculus I*	4
ARC 1160 Computer Application*	1
Humanities Elective	3
Total	**15**

Sophomore Year	**Sem. Hrs.**
Fall	
ARC 2303 Architectural Design 2.1*	4
ARC 2201 Theory in Architecture*	3
ARC 2470 Introduction to Technology of Arch*	3
ARC 2161 Advanced Topics in Digital Arch*	1
PHY 2053 College Physics I*	3
Social Science Elective	3
Total	**17**
Spring	
ARC 2304 Architectural Design 2.2*	4
ARC 2701 Architectural History 1*	3
ARC 2501 Architectural Structures 1	3
ARC 2162 CADD for Architecture *	1
Natural Science Elective	3
Total	**14**

Admission Required into Upper Division

- Minimum 2.5/4.0 ARC and Overall GPA
- Completion of all course above with a "C" or better
- Admission is competitive, primarily based on GPA rank of applicant pool. The Division of Architecture is a limited access program (space is limited), not everyone meeting minimum requirements will be able to enroll)

Junior Year	**Sem. Hrs.**
Fall	
ARC 3324 Architectural Design 3.1	5
ARC 2702 Architectural History 2*	3
ARC 3551 Architectural Structures 2	3
ARC 3463 Materials & Methods of Construction 2	4
Total	**15**
Spring	
ARC 3325 Architectural Design 3.2	5
ARC 3703 Architectural History 3	3
ARC 4319 Design Analysis	3
ARC Upper Division Elective	3
Total	**14**

Senior Year

Fall

ARC 4341 Architectural Design 4.1	5
ARC 4610 Environmental Systems in Architecture	3
ARC Upper Division Elective	3
General Education Elective	3
Humanities Elective	3
Total	**17**

Spring

ARC 4342 Architectural Design 4.2	5
Non-ARC Elective	3
Non-ARC 3000-6000 Level Elective	3
Non-ARC 3000-6000 Level Elective	3
Total	**14**

Total B.S. Architectural Studies	**120**

*This is a state common prerequisite. Substitutions identified in the state Common Prerequisite Manual at www.facts.org will be accepted. State common prerequisites (3 hrs) ARC X180, X053, or X058 are substitutes for the FAMU SOA computer courses: ARC 1160 (1 hr), ARC 1161 (1 hr), and ARC 2162 (1 hr).

Bachelor of Architecture (NAAB accredited)

Fall

ARC 5352 Advanced Architectural Design 5.1	6
ARC 5286 Practice 1	3
ARC 6259 Programming Theory and Practice	3
ARC 5xxx Architectural Making	3
Total	**15**

Spring

ARC 5353 Advanced Architectural Design 5.2	6
ARC 5288 Practice 2	3
ARC 6624 New Technology of Enclosed Buildings	3
Non-ARC Elective	3
Total	**15**

Total Bachelor of Architecture	**30**

Course Descriptions

ARC 1003 Orientation to Architecture (1) Introduction to architecture as a career and field of academic study is the focus of this course. Relationship to other design professions, roles of the architect in society, and purpose and functions of the profession are general topics for discussion and exploration.

ARC 1160 Computer Application (1) Introduction to digital media to design, explore, experiment, and most importantly represent architecture work. The various 2-D and 3-D digital interfaces introduced will be of industry standard, which will allow for a sense for preparation for the current methods and practices for professional growth.

ARC 1301 Design 1.1 (4) The primary foci of this course are the development of two- and three-dimensional graphic skills and the ability to think spatially and to manipulate elements in space. Analysis and design exercises are located primarily in abstract two/three dimensional space and deal with topics such as figure/ground relationships, line/plane/mass, the ideas of systems, networks, repetition, and the relation of part to whole.

ARC 1302 Design 1.2 (4) [Prereq: ARC 1301.] This course continues the emphases and topics studied in Design 1.1, with increased expectation with regard to graphic and spatial manipulation ability. Students study exemplary works of art and architecture, beginning the process of developing an understanding of the role history plays in their own creative explorations. By the end of the course, site and the human being are part of the design environment. Exercises engage only a few carefully selected architectural variables at a time.

ARC 2161 Advanced Topics in Digital Architecture (1) [Prereq: ARC 1302] Continuation of development of digital media to design, explore experiment, and most importantly represent architecture work. The various 2-D and 3-D digital interfaces introduced will be of industry standard, which will allow for a sense for preparation for the current methods and practices for professional growth. This course also supports projects assigned in ARC 2303, Architectural Design 2.1.

ARC 2162 CADD for Architecture (1) [Prereq: ARC 1302] This course is a continuation of Advanced Topics in Digital Architecture through the functional representation of a progressively complex project utilizing light construction. This course also supports project assigned in ARC 2304, Architectural Design 2.2. This course will prepare students for ARC 3463, Materials and Methods of Construction II. Drawings incorporating foundations, elevations, wall sections, and roof framing details will be created using CAD techniques.

ARC 2201 Theory in Architecture (3) [Prereq: ENC 1102.] This course is an introduction to contemporary architectural theories, their evolution and their historical basis.

ARC 2303 Architectural Design 2.1 (4) [Prereq: ARC 1302.] The course focuses on the development of inhabited space, including considerations of generic site, climate, and human comfort for simple indoor and outdoor spaces. Students extend the lessons of systems learned in first year to study of basic building parts--floor, wall, and roof. The use of plan/section/elevation and models incorporating the human dimension is the main vehicle for these explorations. This course offers the opportunity to make links, in the form of a joint project, to the theory course and the introduction to technology course.

ARC 2304 Design 2.2 (4) [Prereq: ARC 2303.] In this course, students study sample buildings on specific sites that they are able to visit. The student's design process is carefully structured through a series of exercises within a particular design project. Students are introduced to and are expected to use in their designs ordering systems based on circulation, structural support, function, climate, and context. Precedent, technology, and aesthetics begin to play a part in the development and evaluation of design solutions. The course offers the opportunity to link to Architectural History I and build on the framework of ideas put forth in the first theory course.

ARC 2470 Introduction to the Technology of Architecture (3) This course is the basis for upper-division courses in structures, environment technology, and materials and methods of construction. This course introduces themes that cut across these technology areas such as the response of buildings to the natural and built environments, strength and durability in building materials, and quantitative methods of analysis and design of building assemblies and support systems.

ARC 2501 Architectural Structures I (3) [Prereq: ARC 2470, and PHY 2053 or MAC 2233 or 2311.] This course covers structural concepts and principles of structural behavior. Included are the elements of statics and mechanics of material: concurrent and noncurrent force systems, moments and couples, equilibrium, centroids and moment of inertia, stress and strain, shear and moment diagrams, elastic column buckling, flexural and shearing stresses in beams, and truss analysis.

ARC 2701 Architectural History I (3) [Prereq: ARC 1302.] A critical exploration of the history and theory of architecture from antiquity through the end of the 13th century is covered. This course examines the making and intent of significant buildings and sites tracing the developments that have given meaning to the built environment and brought order to the tectonics of architecture. Open to non-architecture students and fulfills humanities requirement.

ARC 2702 Architectural History II (3) [Prereq: ARC 2701.] This course is a critical exploration of the history and theory of architecture from the 14th century to the present. This course examines the making and intent of significant buildings and sites tracing the developments that have given meaning to the built environment and brought order to the tectonics of architecture.

ARC 3324 Architectural Design 3.1 (5) [Prereq: Upper-division standing.] The important issues from the first two years of design are revisited within the context of small buildings or building complexes with multiple uses and specific sites with distinctive site features. Design exercises are structured to allow for teaching design processes and to ensure that students engage all issues of a project. Students are expected to begin to develop meaningful alternative responses to important design issues and to begin to evaluate these alternatives.

ARC 3325 Architectural Design 3.2 (5) [Prereq: ARC 3324.] The second term of third year emphasizes working within a specific context, both in terms of a site in an historic setting and in terms of the materials and logic of building. It offers the opportunity to link with the history course on modern architecture by locating a design project in a setting being studied in the history course. The course also incorporates a hands-on experience with building materials and systems that relates to a design project for a specific climate and topography.

ARC 3463 Materials and Methods of Construction II (4) [Prereq: ARC 2304, ARC 2470, upper-division standing.] This course covers technical principles governing the construction and behavior of building enclosure in the design process. Principles framed within the context of issues important to present and anticipated future built environment.

ARC 3551 Arch Structures II (3) [Prereq: ARC 2501.] This course covers structural concepts and principles of behavior; structure and form, statics, and mechanics of materials. Relationships to architectural design, structural appropriateness, statics, mechanics, materials, truss analysis, and properties of materials are explored. Topical areas include determinate structural systems and design of timber and steel elements; and indeterminate structures and analysis and design of reinforced concrete elements and systems. Fundamentals of pre-stressed concrete, lateral forces, and resisting systems are also explored.

ARC 3703 Architectural History III (3) [Prereq: ARC 2702.] An in-depth study of critical positions in 20th century architectural thought.

ARC 4319 Design Analysis (3) [Prereq: Upper-division standing.] This course is a survey of the relationship between the design disciplines (specifically, design in architecture) and general science, planning, art, and other human modes of knowing and interacting with reality. The course aims at increasing student understanding of the concepts of design, planning, creativity, science, art, philosophy, and their role and relationship to architectural design. Methods and techniques for improving skills of problem analysis and problem-solving, creativity, critical thinking and judgment, evaluation, communication about design problems, information-gathering and analysis, dealing with design difficulties, and negotiation and conflict resolution.

ARC 4341 Architectural Design 4.1 (5) [Prereq: ARC 3325, ARC 3463.] The first term of fourth year emphasizes accountability in terms of working from a theoretical position grounded in history and precedent and from the idea of the detail as a form determinant. The course includes an out-of-town trip to see examples of the work being studied.

ARC 4342 Architectural Design 4.2 (5) [Prereq: ARC 4341.] This term has two emphases. The first is to bring together the lessons of the previous design courses in the comprehensive design of a building of moderate size, possibly in the context of a competition. The second is to study large, complex buildings culminating within an urban setting in a design project that focuses on the organization of all the parts of such a building and its relation to the historical/cultural and physical context.

ARC 4610 Environmental Systems in Architecture (3) [Prereq: Upper-division standing.] This course considers thermal, electrical, mechanical and conveyance systems and their integration into the architectural design process. This course familiarizes students with the integrated building technology systems (thermal, electrical conveyance and mechanical systems) within the architectural design process. Students will gain an understanding of these behaviors and systems (sanitary water supply, sewage disposal conveyance heating, ventilating, air conditioning, and passive and active sustainable systems) and practices for creating and controlling interior environments, building envelopes & conditions.

ARC 5286 Practice I (3) [Prereq: admission to B.Arch. programs.]This survey course examines the methods and processes related to procuring and delivering projects in an architectural practice. Course content includes the history of architectural practice, legal forms of association, project procurement, design and

construction delivery systems, project management, bidding, contract negotiation processes, construction administration, and cost management.

ARC 5288 Practice II (3) [Prereq: ARC 5286.]This course investigates the evolution of architectural practice and the role of the architect from a historical and contemporary point of view. Emphasis is placed on the current state of practice and its relation and obligations to the community, the marketplace, and the profession. This course explores the varied contexts in which architects have negotiated, conceived, and executed professional services from antiquity to the present. A major intent of the course is to explore professional ethics as related to architectural practice and to assess the architect's obligation and relationship to the community.

ARC 5352 Advanced Architectural Design 5.1 (6) [Prereq: admission to the B.Arch. program.] This term focuses on the study of a particular urban setting. This setting forms the basis for an urban design project conducted during this term and also for the terminal project of Advanced Architectural Design 5.2. The urban design project requires students to work both individually and in groups with other students.

ARC 5353 Advanced Architectural Design 5.2 (6) [Prereq: ARC 5352.] Students are required to design a building or group of buildings in the urban setting studied in Advanced Architectural Design 5.1 and based on the building programs they developed the previous semester. Students work closely with the course instructor and one or more other advisors among the architecture faculty. The student's work must demonstrate comprehensive competence sufficient to meet the exit requirements of this degree program.

ARC 5xxx Architectural Making (3) [Prereq: admission to the B.Arch. program.] This course critically examines the external and internal considerations that inform the poetic and tectonic basis of making architecture. The formation of architectural intent will be examined through various "opposing views" of architectural theory. As such, the course will follow the format of the "dialectical debate" which involves 3 parts: thesis, antithesis and synthesis. The course includes a series of projects that will establish a framework for an emerging theoretical position (with supporting 2 and 3 dimensional fabrications) that will inform the master's thesis project.

ARC 6259 Programming Theory and Practice (3) [Prereq: admission to the B.Arch. program.] This course presents an in depth survey of architectural programming philosophies, theories, and techniques. The emphasis is placed on the evaluation of the relationship between programming, design, and post-occupancy evaluation.

ARC 6624 New Technology of Enclosed Buildings (3) [Prereq: admission to the B.Arch. program.] This course includes identification, assessment, selection and integration of technical systems for large-scale, complex building projects. Core competencies include management of technological aspects: structure mechanics and materials; management of non-technical aspects: labor, scheduling, logistics, and safety; integrating components from international sources; and technologies and planning strategies that respond corporate planning issues.

Division of Engineering Technology

Accreditation

The SA+ET Division of Engineering Technology offers the Accrediting Board for Engineering and Technology, Inc. (ABET) accredited Bachelor of Science degrees in electronic engineering technology and the ABET accredited construction engineering technology. Engineering technology programs prepare students for positions in business, government and other agencies requiring graduates with high-level technological and managerial competencies. The curricula prepare techno-scientifically oriented graduates for key rules in professional engineering practice and for supervision of productive processes and personnel. A wide variety of elective courses are offered within the various disciplines of engineering technology. These are intended to serve the individual preferences of the students and also to prepare them to undertake graduate work.

Engineering Technology Undergraduate Programs

The Division offers two Bachelor of Science degree programs in engineering technology:

Bachelor of Science in Electronic Engineering Technology
Bachelor of Science in Construction Engineering Technology

Faculty

Dean: Wright, Rodner B., AIA
Program Director: Anglade, Yves J., PhD
Faculty Professors: Bellarmine, Thomas, PhD, P.E.
Associate Professor: Li, Chao, PhD, P.E.; Antonio, Soares, PhD;
Assistant Professors: Doreen, Kobelo, PhD; Muhammad, Rabbani, A.I.A.
Instructors: Akinsanya, David; Prosper, Leon

The following minors are offered through the Division of Engineering Technology for students receiving an undergraduate degree in another discipline:

The programs are accredited by the Technology Accreditation Commission of ABET, Inc.

Minor in Construction Engineering Technology

BCN 3251 Construction Documents I	3
BCN 2230 Materials and Methods of Construction I	3
BCN 4617 Construction Estimating I	3
BCN 3700 Construction Management I	3
BCN 3253 Construction Accounting	3
BCN 4705 Contracts, Codes & Law	3
Total	**18**

Minor in Electronic Technology

CET 2365C Computer Program Eng & Technology	
EET 2035 Electrical Fundamentals 1w/lab	
EET 2036 Electrical Fundamentals 2 w/lab	
EET 2106 Electronic Devices and Circuits 1 w/lab	
ETI 4671 Principles of Engineering Economics	
Total	**18**

Minor in Engineering Technology (General)

BCN 1221C Building Construction	3
CET 2365C Computer Program Engineering & Technology	3
ETI 4671 Principles of Engineering Economics	2
EGS 1110C Engineering Graphics 1	4
EGS 112C Engineering Graphics	2
ENC 3243 Technical Report Writing	3
Total	**18**

Bachelor of Science in Construction Engineering Technology

The Bachelor of Science in construction engineering technology offers specialized instruction in modern techniques of the construction practice. The goal of the program is to produce highly competent and technically trained graduates who possess a solid understanding of fundamental engineering and construction concepts. The program prepares graduates to work with architects, engineers, contractors and others concerned with construction. Typically, program graduates perform work associated with project estimating, structure erection, construction supervision or management. The skills and the competencies are derived from thorough exposure to construction techniques and materials, surveying, estimating methods, computer applications, contractual relationships and legal issues. All students are required to develop skills in technical writing and public speaking. All graduates are encouraged to become Occupational Health and Safety Administration (OSHA) certified, complete at least two (2) internships, and demonstrate competency in computer programming and software applications.

Freshman Year		**Sem. Hrs.**
Fall		
EGN 1XXX	Introduction to Engineering Technology	1
ENC 1101	Freshman Communication Skills I	3
MAC 1114	Algebra and Trigonometric Functions	3
AMH 2091	African-American History	3
BCN 1221C	Building Construction	3
EGS 1110C	Engineering Graphics I (with AUTOCAD)	2
Total		**15**
Spring		
ENC 1102	Freshman Communication Skills II	3
PHY 2053	College Physics & Lab	4
CHM 1030	General Chemistry	3
EGS 1112C	Engineering Graphics II (AUTOCAD)	3
PHI 2010	Introduction to Philosophy	3
Total		**16**

Sophomore Year		**Sem. Hrs.**
Fall		
SUR 2140	Elementary Surveying w/Lab	4
BCN 2230	Materials & Methods of Construction I	3
MAC 2311	Calculus with Analytic Geometry I	4
CET 2365	C-Programming	3
Total		**17**
Spring		
STA 2023	Introduction to Probability and Statistics	3
ECO 2013	Principles of Economics I	3
GLY 2010	Principles of Geology w/Lab	3
ETG 2502	Statics	3
BCN 2231	Materials & Methods of Construction II	3
Total		**15**

Junior Year		**Sem. Hrs.**
Fall		
BCN 3720	Construction Planning & Scheduling	2
ETG 2530	Strengths of Materials W/Lab	4
BCN 3251	Construction Documents I	3
BCN 4705	Contracts, Codes & Law	3
BCN 3731	Construction Safety & OSHA Certification	1
PHI 2010	Introduction to Philosophy	3
Total		**16**
Spring		**Sem. Hrs.**
ETC 3211	Soil Mechanics and Foundations w/Lab	4
BCN 3253	Construction Accounting	3
BCN 4782	Computer Applications for Construction Management	3
BCN xxxx	Construction Equipment & Operations	2
ENC 3243	Technical Report Writing	3
Total		**15**

Senior Year		**Sem. Hrs.**
Fall		
BCN 3701	Construction Management I	3
BCN 4617	Estimating I	3
BCN 3565	Electrical Systems in Construction	3
ETC 4454	Reinforced Concrete I w/Lab	4
PHI 3601	Ethics	3
Total		**16**
Spring		
ETG 4939	Professional Seminar	1
ETC 4455	Reinforced Concrete II	3
ETI 4671	Principles of Engineering Economics	2
BCN 4619	Construction Estimating II	3
BCN 4941	Construction Management Internship or Elective	2
BCN 3566	Electrical-Mechanical Systems	3
Total		**14**

Total B.S. in Construction Engineering Technology 124

Students should ensure that all prerequisites are satisfied before registering for any course. Refer to the university catalog or see an advisor if there are any questions.

Course Descriptions

BCN 1221C Building Construction I (3) [Coreq: EGS 1110C.] This course emphasizes the fundamentals of building construction through a sequential approach. Students are introduced to both concrete-masonry and wood framing types of construction. Phases of construction, detailing, codes and other topics relevant to new and rehabilitated structures are also discussed.

BCN 2230 Materials and Methods I (3) Study of building materials (sources, properties and uses) and construction methods. The materials studied are wood, masonry and concrete.

BCN 2231 Materials and Methods II (3) [Prereq: BCN 2230.]

This course is a continuation of the study of building materials (sources, properties and uses) and construction methods of BCN 2230. This course covers steel, precast concrete, finishes and composite structures. Fastening forms, techniques and related structural systems are topics.

BCN 3251 Construction Documents I (3) Study of all components of working drawings and specifications. Students learn the graphic language necessary for reading and producing construction drawings. Students are required to produce detailed wall sections of residential and small commercial projects.

BCN 3253 Construction Accounting (3) This course presents a current and comprehensive guide to construction accounting. The course provides technical language and step-by-step procedures for builders, contractors and developers to establish and maintain a professional record keeping system.

BCN 3565C Electrical Systems in Construction (3) Study of electrical sources, circuit fixtures, lighting, wiring and drawings. In addition, the conditions for proper placement, planning and capacities of electrical components and systems.

BCN 3566C Electromechanical Systems (3) [Prereq: PHY 2048.] Development of engineering and design principles needed to design, construct and monitor electro-mechanical systems in residential, commercial and industrial projects.

BCN 3700 Construction Management I (3) [Prereq: BCN 3251, Construction Documents I.] Study of the processes, techniques and tools associated with construction management. Topics include the roles of the project manager and other key personnel; the elements and main objectives of construction management; the construction industry; construction practices; project cost management; project planning and scheduling; resource management; and project financial management. Primavera and Prolog Manager Software Programs are introduced in this course.

BCN 3701 Construction Management II (3) [Prereq: BCN 3700, Construction Management I.] Continuation of BCN 3700, Construction Management I, with emphasis on contract negotiations, labor take-offs, in the construction estimate. Organization and management theory for construction, elements of leadership and human supervision, contractor organization, office operations, project management and labor relations are covered.

BCN 3xxx Construction Equipment &Operations (2) In his course students learn to identify, select and plan for the use of appropriate heavy equipment for construction projects. Topics include the uses, functions, productivity rates, and costs associated with using various equipment such as dozers, excavators, trucks and cranes.

BCN 3731 Construction Safety (1) This course is designed to equip construction project managers, engineers, job superintendents, and others to implement and maintain a safe working environment for construction projects. The topics covered include Occupational Safety and Health Administration (OSHA) regulations and procedures, legal, and economic issues pertaining to safety, record-keeping requirements, procedures for preventing accidents and illnesses, hazard recognition, and related topics.

BCN 3720 Construction Planning and Scheduling (2) [Prereq: BCN1221C.] Various network methods of project scheduling such as Activityon-Arrow (AOA) and Activity-on-Node (AON), Pert, bar-charting, line of balance, and other techniques are featured. Microcomputers are used for scheduling, resource allocation, and time/cost analysis.

BCN 4617 Construction Estimating I (3) [Prereq: BCN 3251 and BCN 2230.] Quantity surveying and cost estimating for small scale construction projects are major topics. This course includes: 1). a review of basic math; 2). quantity recognition from working drawings; 3). discussions of various units of measure and productivity rates; and 4). current estimating software.

BCN 4619 Construction Estimating II (3) [Prereq: BCN 4617.] This course is a continuation of BCN 4617 where students work on larger systems and structures. The emphasis is the project cost estimate including material, labor, equipment and subcontract costs and indirect costs.

BCN 4705 Contracts, Codes & Laws (3) [Prereq: BCN 3251.] Major topics include the study of municipal, county and state codes; building codes; and construction contracts. This includes the following topics: contractual relationships amongst construction parties; types of agreements, workmen's compensation, insurance, etc.

BCN 4782 Computer Applications for Construction Management (3) [Prereq: BCN 3700.] Use of computers for construction management applications is emphasized.

BCN 4905 Directed Individual Study (1-6) [Prereq: Consent of the dean.] Students pursue a special project related to the field of study.

BCN 4941 Construction Management Internship (3) Practical experience in the construction industry (i.e., fieldwork design in office, laboratory work, etc.) under the guidance of a practitioner, the faculty advisor, and a cooperative education or university placement office representative is the focus. This course is repeatable to a maximum of twelve semester hours.

EGS 1110C Engineering Graphics I (w/Autocad) (2) Freehand and straight-edge drawing used in orthographic projection auxiliary views, sections, and isometric figures, dimensioning, lettering, scale measurement, and technical drawing in the student's field with computer aided design.

EGS 1112C Engineering Graphics II (AUTOCAD) (2) The course provides students with understanding of the features, limitations, and considerations associated with the operation of a computer aided design/ drafting (CADD) system. Students will gain valuable hand-on experience using the AUTOCAD software, computers, input/ pointing devices (such as digitizers and mice), and output devices (such as plotters and raster printers). The course presents logical, well-tested, step-by-step instructions on the AUTOCAD commands, mode settings, drawings, short-cuts and other valuable characteristics of AUTOCAD.

SUR 2140 Elementary Surveying (3) SUR 2140L Elementary Surveying Laboratory (1) [Prereq: MAC 1147.] Combination of theory and practice of surveying, care of tape, level,

Theodolite, and other surveying equipment are utilized. Traverse surveys, measurement of areas from survey of lands, and introduction to use of computerized instruments.

ETC 3211 Soil Mechanics and Foundations (3) [Prereq: ETC 3210.] Applications of soil mechanics; stability of slopes, footings and pile foundations, retaining walls, fill embankments, dewatering, instrumentation in soil mechanics, special problems.

ETC 4454 Reinforced Concrete I (3) [Prereq: ETG 2530. ETC 4454 L.] This course explores basic theory of ultimate strength and working stress design methods; and analysis and design of rectangular beams and slabs for bending, shear, and bond; T-beams; requirements of ACI code; design and analysis of columns. Spread footing design.

ETC 4455 Reinforced Concrete II (3) [Prereq: ETC 4454.] Topical areas include position of loads on continuous beams for

determination of maximum moments and shears, moment distribution; design and analysis of continuous beams; cantilever retaining walls; reinforced concrete columns, interaction diagram and its applications; and spread footings and mat foundations.

ETG 2502 Statics (3) [Prereq: MAC 1147.] This is the first course in engineering mechanics. Topics include the basic principles of trigonometry, scalar and vector quantities, statics of particles, statics of rigid bodies in two-dimension, analysis of trusses, center of gravity, moments of inertia and friction.

ETG 2530 Strength of Materials (3) and **ETG 2530L Strength of Materials Lab** (1) [Prereq: ETG 2502.] Topical areas include axial load, normal and shearing stresses, HookÆs Law, torsion, shear and bending moment diagrams for simply supported and continuous beams, pure bending and transverse loading. Bending and shear stresses in beams and composite beams are covered.

ETG 4939 Professional Seminar (1) Introduction to recent developments, special projects or research related to technology by lecture, film, demonstration or field trips. Presentations made by distinguished visiting scientists, engineers, or professors.

ETI 4671 Principles of Engineering Economy (2) [Prereq: MAC 2311.] The mathematics of compound interest with emphasis on time value of money is covered. Equipment replacement and investment decisions, and topics on depreciation and taxes are also covered.

Bachelor of Science in Electronic Engineering Technology

The program in Electronic Engineering Technology offers instruction in the theoretical and practical analysis of modern electronic circuits, devices and systems. Most courses have a required laboratory component in which skills in the use of computers for problem solving, application and use of modern electronic test equipment and embedded microprocessors are developed. The curriculum prepares the student to design and conduct scientific, electrical, and electronic engineering experiments and to analyze and interpret the resulting data. The Electronic Engineering Technologist is thus well prepared to work with engineers and other technical personnel in industry on the design, development and testing of circuits and systems.

The curriculum offers the student the opportunity to specialize in areas such as Computer Engineering Technology and Telecommunications through specialized elective courses. The option in Computer Engineering Technology prepares students for careers in the fields of computer engineering and information technology.

The graduates of the program will be able to work as engineering technologists and as supervisors and junior managers in manufacturing, communication, control, computer, power, and electronic industries. Opportunities are also available in areas such as engineering contractors, consulting, and marketing and sales and with federal, state, and local governments.

Freshman Year		**Sem. Hrs.**
Fall		
ENC 1101	Freshman Communication Skills I	3
EET 2035	Electrical Fundamentals I	3
EET 2035L	Electrical Fundamentals I Lab	1
AMH 2091	Intro African American History	3
MAC 1147	Pre-Calculus Mathematics	4
Humanities Elective		3
Total		**17**
Spring		
ENC 1102	Freshman Communication Skills II	3
CET 2365C	Computer Programming in Engineering and Technology	3
MAC 2311	Calculus I*	4
EET 2036	Electrical Fundamentals II	3
EET 2036L	Electrical Fundamentals II Lab	1
Humanities Elective (PHI 3601Ethics Recommended)		3
Total		**17**

Sophomore Year		**Sem. Hrs.**
Fall		
ENC 3243	Technical Report Writing	3
PHY 2048	General Physics I*	4
PHY 2048L	General Physics I Lab*	1
EET 2106	Electronic Devices and Circuits I	3
EET 2106L	Electronic Devices and Circuits I Lab	1
MAC 2312	Calculus II	4
Total		**16**
Spring		
CHM 1045	General Chemistry I*	3
CHM 1045L	General Chemistry I Lab*	1
PHY 2049	General Physics II	4
PHY 2049L	General Physics II Lab	1
EET 3107	Electronic Devices and Circuits II	3
EET 3107L	Electronic Devices and Circuits II Lab	1
Total		**16**

Junior Year		**Sem. Hrs.**
Fall		
EET 3325	Communication Systems	3
EET 3325L	Communication Systems Lab	1
CET 3195	Digital Electronics	3
CET 3195L	Digital Electronics Lab	1
CET 3468	Computer-Aided Circuit Analysis	3
STA 2023	Intro to Probability & Statistics	3
Total		**14**
Spring		
EET 3326	Advanced Communications Systems	3
EET 3326L	Advanced Communications Systems Lab	1
EET 4735	Industrial Electronics & Controls	3
EET 4735L	Industrial Electronics & Controls Lab	1
EET 4328	Wireless Communication	3
EET 4328L	Wireless Communication Lab	1
CET 2123	Microprocessor Fundamentals	3
CET 2123L	Microprocessor Fundamentals Lab	1
Total		**16**

Senior Year		**Sem. Hrs.**
Fall		
EET 4165	Electronic Design I	3
EET 4165L	Electronic Design I Lab	1
SPC 2600	Public Speaking	3
Technical Elective		3
Technical Elective		3

EET 4950 Technical Design Project Proposal	1
Total	**14**

Spring

EET 4322 Advanced Electronics II	3
EET 4322L Advanced Electronics II Lab	1
EET 4914 Electronic Engineering Technology Design Project	3
EST 4538 Instrumentation	3
EST 4538L Instrumentation Lab	1
ETI 4671 Prin. of Engineering Economy	2
Total	**13**

Total B.S. Electronic Engineering Technology	**124**

Course Descriptions

CET 2123 Microprocessor Fundamentals (3) and CET 2123L (1) Microprocessor Fundamental Laboratory (1) [Prereq: CET 3195] Study of architecture and microprocessor programming. Microcomputers will be discussed in detail.

CET 2356 C Programming for Engineering and Technology (3) This is a hands-on introduction to the C-programming language with applications in Engineering and Technology. Specifics include arrays, pointers, functions, I/O operations and operations system interaction.

CET 3195 Digital Electronics (3) CET 3195L and Digital Electronics Laboratory (1) [Prereq: EET 2036 w/Lab.] A practical treatment of digital electronics, logic and systems including Boolean algebra, logic gates, truth-tables, multi-vibrators, counters, and registers are course topics.

CET 3468 Computer Aided Circuit Analysis (3) [Prereq: MAC 2312 and EET 2036 w/lab.] This course provides a study of the available tools for computer-aided analysis and design of electronic circuits. Waveform analysis, circuits in the time and frequency domain, network analysis up to microwave frequencies, Laplace transform circuit analysis, p-spice circuit simulation and analysis using available mathematical software packages is covered.

EET 2035 Electrical Fundamentals I (3) and EET 2035L Electrical Fundamentals I Laboratory (1) Introduction to circuit elements, resistance, reactance, capacitance, Kirchhoff's voltage and current laws; basic techniques of DC and AC circuit analysis, loop and node equations are covered. Study of electrical sources, circuits and residential wiring is also included.

EET 2036 Electrical Fundamentals II (3) and EET 2036L Electrical Fundamentals II Lab (1) [Prereq: EET 2035] AC network problems, three phase AC, magnetic and transformers, transient analysis, circuit concepts, resonant circuits and related DC topics.

EET 2106 Electronic Devices and Circuits I (3) and EET 2106L Electronic Devices and Circuits I Laboratory (1) [Coreq: EET 2036.] This is the first of a two-course sequence in Electronic Semiconductor diode and transistor circuit elements. The course introduces the concept of circuit simplification via idealization, approximations, and an overview of semiconductor devices and their electrical properties. Emphasis is placed on circuit analysis and various small signal, linear, and power applications diodes and transistors.

EET 2142 Advanced Electronics I (3) and EET 2142L Advanced Electronics I Laboratory (1) [Prereq: EET 2106.] In depth study of selected topics in microelectronics including analog and digital circuit design are covered.

EET 3326 Advanced Communication Systems (3) and EET 3326L Advanced Communication Systems Lab (1) This course provides a background in electromagnetic theory suitable for use in areas related to communications, wireless applications, high frequency radiation sources and microwave devices. Examples of these electromagnetic applications in modern engineering and science will be presented.

EET 3107 Electronic Devices and Circuits II (3) and EET 3107 Electronic Devices and Circuits II Laboratory (1) [Prereq: EET 2106 w/lab.] This is the second of a two-course sequence in the study of electronic semiconductor circuits. Covered are more computer applications including field effect transistors circuitry, amplitude/ phase shift response of transistor amplifiers, integrated circuits, negative and positive feedback circuits, voltage regulations, operational amplifiers, spectrum analysis, and harmonic distortion.

EET 3325 Communication Systems (3) and EET 3325L Communication Systems Laboratory (1) [Prereq: EET 2106, MAC 2312.] This course features integrated lecture and laboratory experience in the study of AM and FM transmitters and receivers, TV, two-way communication systems and antennas.

EET 3326 Advanced Communication Systems (3) and EET 3326L Advanced Communication Systems laboratory (1) [Prereq: EET 3325 w/lab.] Integrated lecture and laboratory experience in the study of digital communication, digital networks, fiber optics, and satellite communication are topical areas.

EET 4322 Advanced Electronics II (3) and EET 4322L Advanced Electronics II Laboratory (1) [Prereq: EET 2142.] An in-depth study of selected topics in microelectronics including oscillator design: special wave generators and more applications on operational amplifiers are covered.

EET 4328 Wireless Communications (3) Wireless Communications Laboratory (1) [Prereq: EET 3325.] This course is an introduction to the principles, concepts, and applications of wireless communications systems. Cellular radio and wireless communications will be covered in detail. Concepts at the core of these topics are presented to develop an understanding of the design and implementation of such systems. Standards for personal communications are also presented.

EET 4735 Industrial Electronics and Control (3) and EET 4735 Industrial Electronics and Control Laboratory (1) [Prereq: EET 3107, CET 3468.] Characteristics and analysis of electronic devices in modern industry system analysis, control concepts, graphical solution of network response; robots are covered. Additional topics include end-of-arm tooling, robot controller, sensors and interfacing.

EET 4914 Electronic Engineering Technology Design Project (4) [Prereq: Senior standing.] This senior-level course culminates in each student's design and implementation of an individual project in some areas of electronic engineering technology.

EST 4538 Instrumentation (3) and EST 4538L Instrumentation Laboratory (1) [Prereq: EET 3107, CET 3195.] Integrated lecture and laboratory hands-on introduction to the theory and applications of electronic instrumentation to the testing, measurement and control of physical systems is covered.

ETG 4939 Professional Seminar (1) This course is an introduction to recent developments, special projects or research related to technology by lecture, film, demonstration or field trips;

presentations made by distinguished visiting scientists, engineers, or professors.

ETI 4671 Principles of Engineering Economy (2) [Prereq: MAC 2311.] This course explores the mathematics of compound interest with emphasis on time value of money. Equipment replacement and investment decisions and topics on depreciation and taxes are covered.

School of Architecture & Engineering Technology
Graduate Programs

The SA+ET Division of Architecture offers two degree programs at the graduate level to accommodate students from different backgrounds who may have various educational and career goals. These degree programs are:

1. The Master of Architecture (M.Arch., professionally accredited program)
2. The Master of Science in Architecture (M.S.Arch.)

Types of Applicants:

Applicants to the graduate programs are generally of two types:

1. Students who have completed the equivalent of our Bachelor of Science in Architectural Studies.
2. Students who have a prior degree in a field other than architecture.

Progress and Retention Requirements

All students seeking admission to a graduate program in the School of Architecture are required to meet all of the provisions outlined in the university Catalog for satisfactory progress and retention as determined by the School of Graduate Studies and Research. The requirements for satisfactory progress for such students are different from the general requirements for progress and retention for students admitted and enrolled in undergraduate degree programs.

Students admitted to graduate programs in the School of Architecture & Engineering Technology who fail to maintain the required conditions for progress and retention could face termination of their graduate student status. A grade in a graduate-level course of "C" or below must be retaken. Such retakes follow different grade forgiveness policies from those that apply to undergraduate students' grades.

Master of Architecture
Program Description

The Master of Architecture is accredited by the National Architectural Accrediting Board. The successful completion of the requirements of this degree qualifies graduates to pursue licensure as a registered professional architect. The master of architecture program is intended to prepare students for leadership roles in a rapidly changing profession. Since its inception, the school has consistently recognized the diverse sets of roles graduates may play in the profession. Emphasis is upon student freedom to pursue an investigation of personal interest. This consists of in-depth inquiry into diverse architectural and urban issues and understanding architecture's capability to act as an agent of intervention.

Degree Paths

Two distinct paths to the professional Master of Architecture degree are available:

4+2

The 4+2 Master of Architecture path is designed for students who have completed the equivalent of the FAMU Bachelor of Science in Architectural Studies. It constitutes advanced standing in the program, requires a two-year term of study, and leads to a NAAB professionally-accredited Master of Architecture degree.

This course of study is for the student who wishes to enhance his/her personal approach to making architecture and to build upon the skills and knowledge gained in their undergraduate degree. The general profile of the Path A candidate is someone who has had a successful undergraduate career, has an excellent portfolio of work, and is willing to commit the time and energy necessary to be successful in this rigorous program.

4+3.5

The 4 + 3.5 Master of Architecture path is designed for graduates who have earned a four-year non-architectural bachelor's degree. It constitutes a three-and-a-half-year term of study and leads to a professional Master of Architecture degree. This course of study is meant to serve not only the recent graduate but also to provide an educational opportunity for those desiring a career change.

Admission Requirements

For admission to the graduate programs, applicants must meet the requirements of the School of Graduate Studies and Research at Florida A&M as well as those of the School of Architecture & Engineering Technology. For requirements of the School of Graduate Studies and Research, see that section of this Catalog. Requirements are as follows:

1. Required previous degree and education background:
   a. Master of Architecture Degree: an undergraduate degree. The field of the degree helps determine the number of credit hours required for the M.Arch. degree.
   b. Master of Science in Architecture Degree-Facility Management: graduates of an undergraduate degree.

2. Admission requirements for all applicants are:
   a. GRE score and 3.0 GPA in the last 60 hours
   b. An Intent Statement indicating the degree program to which applicant is applying; include educational and career background, goals, and reasons for selecting the degree program.
   c. A résumé
   d. A portfolio of recent academic design work (4+2 path only).
   e. Three letters of reference from people who can speak knowledgeably about the quality of the applicant's recent work.
   f. A completed FAMU graduate application with transcript.

4+2 Year Academic Plan

Year One - Fall	
ARC 6357 Graduate Design 6.1	3
ARC 5206 Advanced Architectural Theory & Philosophy	3
ARC 5xxx Architectural Making	3
ARC 5286 Practice I	3
Total	**14**

Year One - Spring

ARC	6359 Graduate Design 6.2	5
ARC	6624 New Technology of Enclosed Buildings	3
ARC	6974 Intro Thesis/Master's Project Planning	3
ARC	5xxx Digital Fabrication	3
Total		**14**

Year Two - Fall

ARC	6xxx Urban Design Studio	6
ARC	6259 Programming Theory & Practice	3
ARC	6910 Thesis/Master's Project Research	3
Thesis Elective (4000-6000)		3
Total		**15**

Year Two - Spring

ARC	6971 Thesis/Master's Project Studio	6
ARC	5288 Practice II	3
Graduate Elective (4000-6000)		3
Total		**12**
Total		**55**

4+3.5 Year Academic Plan

Year One - Fall

ARC	2470 Intro to Technology of Architecture	3
ARC	2501 Architectural Structures 1	3
ARC	2701 Architectural History 1	3
ARC	2161 Advanced Topics in Digital Architecture (Revit)	1
ARC	5361 Graduate Design 1	3
Total		**13**

Year One - Spring

ARC	2162 CADD for Architecture (Revit)	1
ARC	2702 Architectural History 2	3
ARC	3551 Architectural Structures 2	3
ARC	4610 Environmental Systems in Architecture	3
ARC	5362 Graduate Design 2	3
Total		**13**

Year One - Summer

ARC	3463 Materials & Methods of Construction 2	4
ARC	5363 Graduate Design 3	4
Total		**8**

Year Two - Fall

ARC	3703 Architectural History 3	3
ARC	5206 Advanced Architectural Theory & Philosophy	3
ARC	5364 Graduate Design 4	4
ARC	5xxx Architectural Making	3
Total		**13**

Year Two - Spring

ARC	6359 Design 6.2 (Whole Building)	5
ARC	6624 New Technology of Enclosed Buildings	3
ARC	6974 Introduction to Thesis/Masters Project Planning	3
ARC	Elective (5000-6000)	3
Total		**14**

Year 3 - Fall

ARC	5286 Practice 1	3
ARC	6259 Programming Theory & Practice	3
ARC	6910 Thesis/Masters Project Research	3
ARC	6xxx Urban Design Studio	6
Total		**15**

Year 3 - Spring

ARC	5xxx Digital Fabrication	3
ARC	5288 Practice 2	3
ARC	6971 Thesis/Masters Project Studio	6
	Thesis Elective (4000-6000)	3
Total		**15**
Total		**91**

Course Descriptions

ARC 5206 Advanced Architectural Theory and Philosophy (3) Review of the concepts, elements, roles, and significance of theories of architecture as related to the understanding and appreciation of works of architecture, architectural design and practice, and architectural education. Overview of major architectural theories through history is also covered.

ARC 5286 Practice I (3) This course is a survey of issues related to the profession of architecture, specifically how firms are organized, make money, and design quality buildings.

ARC 5288 Practice II (3) This is the second course in the professional practice sequence. Emphasis will be placed on the current state of practice and its relation and obligations to the community, the marketplace, and the profession.

ARC 6357 Graduate Design 6.1 (5) Design as inquiry with an emphasis on design as a vehicle of intellectual discourse. These investigations will emphasize the students developing and applying their own Architectural Intentions and Conceptual Frameworks by critically examining the external and internal considerations that inform the basis of making Architecture.

ARC 6359 Graduate Design 6.2 (5) [Prereq. ARC 6357.] This is a required course in the professional M Arch curriculum, and addresses specific NAAB criteria. The course content builds on the design studio sequence and portions of the Theory, History & Technology courses. The course focuses on whole building design as a method and result.

ARC 6974 Introduction to Thesis/Master's Project Planning (3) The Thesis Planning course provides a supportive structure to help the student initiate the thesis process. This structure involves deliverables and intermediate due dates, crits, group review of work in progress, faculty guests, chalk talks and short exercises. At the end of the Thesis Planning semester, the student should have chosen the area of study, the topic of investigation within the study area and the particular issue or question within the topic that will be the focus of thesis inquiry.

ARC 6910 Thesis/Master's Project Research (3) [Prereq. ARC 6974.] This course provides a supportive structure to help the student manage his/her thesis to a successful conclusion. At the end of the semester, the students will have completed a substantial portion of the written thesis document.

ARC 6971 Thesis/Master's Project Studio (6) [Prereq. ARC 6910.] Thesis Studio is a studio that focuses on the development of the student's thesis application. It is a studio setting that provides a venue to enable the student to receive direction in a setting that provides peer and faculty input.

Master of Science in Architecture
Program Description

The Master of Science in Architecture: Facilities Management (MScFM) is a collaborative professional degree program between the School of Architecture & Engineering Technology and the School of Business & Industry. Additional courses are provided by the School of the Environment, College of Education, and College of Social Sciences, Arts & Humanities. The MScFM is for students who have an undergraduate degree from an accredited institution of higher learning and wish to acquire an industry driven professional degree that enables the graduate to perform facility management services. Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process, and technology. This MScFM require independent thinking skills and the ability to solve challenging problems through research, investigation, analysis, and development of sound and learned solutions as well as include a presentation and defense. Graduates are eligible to work in private practice, government, or industry and to be licensed as a certified facility manager (CFM), facility management professional (FMP), and sustainability facility professional.

Professional Responsibilities
The course requirements meet the International Facility Management Association (IFMA) Foundation standards. Managing these areas of responsibility requires the merging of critical thinking, business skills, technical expertise, and research. Graduates will be highly skilled professionals (http://www.ifma.org/images/education/fm_career-map_02b.jpg?sfvrsn=2). The Florida A&M University model prepares future facilities managers with the knowledge and skills to:

i. Plan and organize facility function:
   1. Interface with professionals and clients in the design and construction of facilities
   2. Perceive design requirements, their impact on quality of life and environmental issues, and their value in the engineering of facilities
   3. Prepare candidates to work at the local, state, national and international level.

ii. Manage personnel assigned to the facility function:
   1. Coordinate efforts of in-house staff and consultants to perform specific aspects of the facilities management function.
   2. Evaluate performance and support personnel development
   3. Provide leadership

iii. Administer the facility function:
   1. Synthesize interdisciplinary efforts and act across traditional administrative, planning, and operational boundaries to organize, coordinate, and control diverse facilities and management activities.
   2. Analyze facilities needs and develop planning initiatives and effective implementation strategies that are responsive to specific current and projected facilities issues.

iv. Manage the Delivery of Facility Services:
   1. Manage the process of facility development to complete projects on schedule and within budget, to a specified standard of quality
   2. Coordinate development activities with ongoing operations to minimize disruptions and maintain the continuity of facilities functions and economic viability.

Admissions
Students with any undergraduate degree may apply for admission. A typical candidate must be self-motivated, goal-oriented, and able to work in a context that is often individualized in nature. Due to the short duration of the curriculum path, students should have a well-formulated and faculty-approved educational agenda before entering the MScFM program.

General Requirements
- A baccalaureate degree from an accredited institution
- Foreign students may also need a TOEFL score of 550
- A GRE score and a GPA of 3.0 and higher in the last 60 hours of undergraduate coursework
- Professional Resume
- Professional Intent Statement
- Three references (SOA reference form)

Apply online through FAMU's graduate school, where you also will find specific information about applying..

Curriculum
A minimum of 30 graduate-level semester hours are required. Academic plans for students entering the MScFM from various undergraduate degrees are as follows:

Path A: BS Architectural Studies or Equivalent

Summer	
SPM 5108 Sport & Leisure Facilities Management	3
Environmental Stewardship Elective	3
Total	**6**
Fall	
ACG 2071 Managerial Accounting Principles	*3
FIN 3403 Corporation Finance	*3
ARC 5xxx Introduction to Facility Management	3
EVR 5062 Principles of Environmental & Occupational Health	3
Leadership & Strategy Elective	3
Total	**15**
Spring	
ARC 5018 Facility Management	3
ARC 6278 Construction Management	3
ARC 6932 Masters Seminar (Capstone)	3
QMB 5555 Managerial Research Methods	3
MAN 5940 MBA Internship	1
Environmental Stewardship Elective	3
Total	**16**
TOTAL HOURS PATH A	**37**

Path B: Business undergraduate

Pre-requisites	
ACG 2071 Managerial Accounting Principles	3
FIN 3403 Corporation Finance	3

QMB 2100 Quantitative Methods & Business Decisions 1 3
Total ***9**

Summer
SPM 5108 Sport & Leisure Facilities Management 3
Total **3**

Fall
ARC 5xxx Introduction to Facilities Management 3
ARC 5xxx Principles of Space Planning 3
ARC 2161 Advanced Topics in Digital Arc 1
ARC 4610 Environmental Systems in Architecture 3
EVR 5062 Principles of Environmental & Occupational Health 3
Leadership & Strategy Elective 3
Total **16**

Spring
ARC 5018 Facility Management 3
ARC 6278 Construction Management 3
ARC 6932 Masters Seminar (Capstone) 3
MAN 5940 MBA Internship 1
Environmental Stewardship Elective 3
Environmental Stewardship Elective 3
Total **16**
TOTAL HOURS PATH B **35-44***

*Pre-requisite courses. A minimum of 30 graduate hours needed for the degree.

Path C: Non-Architecture, non-business undergraduate degree

Fall
ACG 2071 Managerial Accounting Principles 3*
FIN 3403 Corporation Finance 3*
ARC 5xxx Introduction to Facility Management 3
ARC 5xxx Principles of Space Planning 3
ARC 2161 Advanced Topics in Digital Architecture 1*
ARC 4610 Environmental Systems in Architecture 3
Total **16**

Spring
ARC 5018 Facility Management 3
ARC 6278 Construction Management 3
QMB 2100 Quantitative Methods & Business Decisions 1 *3
Environmental Stewardship Elective 3
Total **12**

Summer
MAN 5940 MBA Internship I 1
SPM 5108 Sport & Leisure Facilities Management 3
Total **4**

Fall
ARC 6932 Masters Seminar (Capstone) 3
EVR 5062 Principles of Environmental & Occupational Health 3
Leadership & Strategy Elective 3
Environmental Stewardship Elective 3
Total **12**
TOTAL HOURS PATH C **44**

Core Competency Electives
Leadership & Strategy (select 1)
BUL 5323 Legal Issues & the Environment, PAD 5417 Public Personnel Administration, PAD 5025 Public Management, PAD 6227 Seminar in Public Finance Admin, EDA 6260 Facilities & Auxiliary Services
Environmental Stewardship (select 2)
EVR 5864 Env & Risk Management, ENV 5xxx Env Engineering Sustainability, ARC 5-6000 Special Study "Urban Design", FAMU/FSU COE Graduate Sustainability, FSU Graduate Real Estate Courses

Course Descriptions
ACG 2071 Managerial Accounting (3) Conceptual introduction to managerial accounting. Emphasis placed on cost reporting and analytical tools used by management.
ARC 2161 Advanced Topics in Digital Architecture (1) Development of digital media to design, explore experiment, and most importantly represent architecture work. The various 2-D and 3-D digital interfaces introduced will be of industry standard, which will allow for a sense for preparation for the current methods and practices for professional growth.
ARC 4610 Environmental Systems in Architecture (3) This course considers thermal, electrical, mechanical and conveyance systems and their integration into the architectural design process. This course familiarizes students with the integrated building technology systems (thermal, electrical conveyance and mechanical systems) within the architectural design process. Students will gain an understanding of these behaviors and systems (sanitary water supply, sewage disposal conveyance heating, ventilating, air conditioning, and passive and active sustainable systems) and practices for creating and controlling interior environments, **building envelopes & conditions.**
ARC 5XXX Introduction to Facility Management (3) Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, planning, engineering, architecture, construction management, facility system technical services (HVAC, electrical, plumbing), business support services (financial management, IT, HR, Strategic Planning). The course is an overview of the facility management profession. It also introduces students to the diverse roles and responsibilities of facility managers in public and private organizations.
ARC 5XXX Principles of Space Planning (3) The primary foci of this course are the development of two- and three-dimensional graphic skills and the ability to think spatially and to manipulate elements in space. This first studio course is an exploration of basic two- and three- dimensional design principles and strategies used to create a functional built environment with special emphasis on circulation, lighting, finishes, furniture placement and facility system technical services (HVAC, electrical, plumbing). This course also introduces students to a plethora of decision decisions that affect business success.
ARC 5018 Facility Management (3) Role of the facility manger in acquiring new facilities and in managing and maintaining existing building stock is covered. Focus of the course includes (1) architect selection strategies, (2) management of the building delivery process from a client perspective, (3) move-in logistics,

(4) evaluation of space needs and effectiveness, (5) renovation, and (6) facility maintenance planning.

ARC 6278 Construction Management (3) This course is an overview of the various stages of construction management and the roles of key players such as architects, engineers, and contractors. Topics include the role of the project manager and other key personnel; the elements and main objective of construction management; the construction industry, construction practices in sustainability; project cost management; project planning and scheduling; resource management and project financial management.

ARC 6932 Masters Seminar (3) This is the capstone for the Facility Management Program and demonstrates competence in the three major discipline areas of architecture, business and construction. Successful completion of the Capstone requires a demonstration of competency in critical thinking skills, technical expertise, and research in the four major core units of (a) planning and organizing facility function, (b) managing personnel assigned to the facility function, (c) administering the facility function, and (d) managing the delivery of facility services. Comprehensive examination of the art and science of formulating, implementing and evaluating policies and procedures that enable organizations to achieve short- and long-term objectives are also course objectives.

EVR 5062 Principles of Environmental and Occupational Health (3) Discussion of the various ways in which environmental factors influence human health as well as an examination of technology and current research; includes physiological interaction; response to hazards.

FIN 3403 Corporation Finance (3) Course focuses on financial management cases and provides students with an active learning experience. Case work is based on concepts learned in introductory corporate finance. Topics discussed include measuring and interpreting cash flow performance, financial forecasting and turnaround management; capital investment and cost of capital; capital structure, dividend policy and firm valuation.

MAN 5940 MBA Internship (1) Permission of the director of professional programs and certification by the residency/internship office. Full-time affiliation as an intern with a School of Business and Industry approved organization or institution. Residency assignments can either be in accounting, finance, management, or marketing.

QMB 5555 Managerial Research Methods (3) Major topics: probability theory; random variables; hypothesis testing; confidence intervals; small sample methods; correlation; simple linear regression, nonparametric statistics.

School of Business and Industry

Mission Statement

The mission of the School of Business and Industry (SBI) at Florida A&M University is to produce graduates capable of excelling as future leaders in global business, industry, and commerce.This is achieved by:

- Providing innovative academic, professional development, and internship experiences in an enlightened, ethical, and stimulating student-centered learning environment.
- Developing, supporting, and creating opportunities for a diverse qualified faculty and staff committed to "excellence with caring" through high-quality teaching, relevant intellectual contributions, and meaningful service.
- Creating an environment in which shared governance, collegiality, openness, respect for others, and individual and mutual responsibility and accountability flourish.
- Embracing the University's historic mission of educating African Americans while recruiting students of all races and ethnic origins with strong academic backgrounds committed to the pursuit of excellence.
- Developing new, and expanding existing, creative partnerships with alumni, and private and public stakeholders to maintain the relevance and currency of our academic programs.
- Promoting an environment of continuous improvement by acquiring and developing the necessary human, physical, financial, and technological resources to maintain our competitive edge.

Values Statement
We value a work and learning environment that is based on professionalism, responsibility, accountability, respect, trust, pride, ethics, integrity, caring, excellence, knowledge, research, and service.

Vision Statement
The School of Business and Industry aspires to be recognized nationally and internationally as a preeminent center of excellence in business.

General Requirements for Undergraduate Business Majors

The School of Business and Industry's undergraduate learning goals include the following:

- Critical Thinking Skills
- Communication Skills
- Content/Discipline Knowledge Skills
- Ethical Understanding
- Global Perspective
- Teamwork Skills

The School's curriculum management process results in undergraduate degree programs that produce learning experiences in management-specific knowledge and skills areas such as:

- Ethical and legal responsibilities in organizations and society.
- Financial theories, analysis, reporting and markets.
- Creation of value through the integrated production and distribution of goods, services and information.
- Group and individual dynamics in organizations.
- Statistical data analysis and management science as they support decision-making processes throughout an organization.
- Information technologies as they influence the structure and processes of organizations and economics, and as they influence the roles and techniques of management.
- Domestic and global economic environments of organizations.
- Other management-specific knowledge and abilities as identified by the School (see curriculum requirements on the following pages).

Program Objective

The objective of the Bachelor of Science program is to produce graduates capable of excelling as future leaders in global business, industry, and commerce. SBI undergraduates are capable of performing effectively and advancing within a variety of organizations and are prepared to pursue advanced degrees here and elsewhere to realize their academic aspirations and further their career goals.

Administration and Faculty

SBI Administration
Dean School of Business and Industry: Friday-Stroud, Shawnta
Assistant Dean: Davis, Bobby
Department Chair, Accounting and Finance: Bates, Ira
Department Chair, Management and Marketing: Nwakanma, Hudson
Department Chair, Information Systems and Operations Management: Nkansah, Paul
Department Chair, Economics and Professional Leadership Development: Williams, Deedgra
Director, Office of Student Services: Williams, Felicia

SBI Faculty
Ashley, Clyde
Bailey, Kelley
Bates, Ira
Black, Jason
Campbell, Michael

Charles, Atira
Cole, Dwayne
Collins, Jennifer
Daniels, Rudolph
Davis, Bobby
Drumming, Saundra
Green, Kalena
Etienne, Eisenhower
Farmer, Errick
Farmer, Kelvin
Friday-Stroud, Shawnta
Gipson, Cindy
Guirand, Bernadette
Henderson, Harold
Hightower, Roscoe
Hill, Aretha
Holloman, Derek
Holmes Nelson, Yvette
Houston Turner, Rashada
Islam, Mahzar
Jackson, Annette
Johnson, Nathaniel
Karesh, Cynthia
Kinchlow, Gina
March, Samique
McKenzie, Deanna
Murphy, Angela
Nkansah, Paul
Nwakanma, Hudson
Oguledo, Victor
Osagie, Johnston
Pyne, Samuel
Ravenell, William
Reeder, Craig
Ridley, A. Denis
Rosier, Kenyatta
Shabazz, Daaim
Shrestha, Nanda
Smith, Wilbur
Sutterfield, J. Scott
Swirsky, Steven
White, LaTanya
Williams, Deedgra
Wilson, Richard

Undergraduate Programs
Accounting and Business Administration

Bachelor of Science Admission Requirements
Admissions requirements are determined by the School's Recruitment, Admission, Retention, and Progression Committee and approved by the SBI Faculty.

First-Time-In College (FTIC) Students
FTIC students interested in business or accounting are admitted to Pre-Business or Pre-Accounting. Any student interested in the Bachelor of Science in Business Administration with program major Facilities Management, Economics, Economics minor in Business or Bachelor of Arts in Economics programs are admitted directly into the major as indicated on the student's application for admission based on meeting the University's (FAMU) admission criteria.

Transfer Students
Students applying to transfer into SBI on the basis of college coursework completed at another school or college (inside or outside of Florida A&M University) are admitted into Pre-Business or Pre-Accounting if they do not qualify to transfer into one of SBI's degree programs.

III. *Exiting Pre-Business or Pre-Accounting to the Accounting or Business Administration Degree Programs*

To exit Pre-Business or Pre-Accounting and enter one of SBI's degree programs, students must satisfy the following admission requirements:

- Earn at least 52 semester credit hours of college-level coursework.
- Attain good academic standing with the University (not under an academic warning or on academic probation and not under academic suspension).
- Complete the University's Gordon Rule general education requirements and Foreign Language requirement.
- Complete the pre-major common course prerequisites (listed below or their equivalents) with grade of B or better in three (3) of the courses and no less than a grade of C or better in each of the other four (4) courses. The courses are as follows:

ACG 2021 Financial Accounting Principles
ACG 2071 Managerial Accounting Principles
ECO 2013 Principles of Economics I
ECO 2023 Principles of Economics II
MAC 2233 Calculus for Business and Social Science I
QMB 2100 Quantitative Methods for Business Decisions I
MAN 2543 Introduction to Business Systems

- Submit an application to the Office of Student Services for admission to SBI's Professional MBA program or one of the School's Bachelor of Science programs in Accounting or Business Administration.

While in Pre-Business or Pre-Accounting, students have restricted access to upper-division (3000-4000) business courses. Specifically, unless granted a special waiver by the Dean's Office, they are prohibited from taking more than 18 credit hours of accounting and introductory upper-division business courses (excluding credit hours repeated under the University's grade forgiveness policy).

Curriculum Update Policy

The SBI administration and faculty recognize their responsibility to:

A. Upgrade the curriculum to assure that students acquire the most current and relevant training possible. If changes are necessary, every effort will be made to substitute rather than add requirements

to the student's curriculum. The assurance of well-prepared graduates will always be the controlling concern.

B. Produce graduates that are academically, ethically, and professionally prepared to accept the challenges of the current and future business profession. Consequently, the School of Business and Industry reserves the right to withhold the recommendation for graduation of any student who does not conform to these expectations.

Curriculum Requirements

All classes applied toward graduation must be passed with a grade of "C" or better. See your advisor for approved course sequences.

Accounting Program

Freshman Year	**Sem. Hrs.**
ENC 1101/1102 Freshman Communication Skills	6
MAN 2543 Introduction to Business Systems	3
MAC 1105 College Algebra	3
GEB 1091, 1092 Introduction to Professional Leadership Development I & II	2
GEB 1440 Fundamental Concepts	3
MAD 2120 Finite Mathematics	3
AMH 2091 Introduction to Afro-American History	3
WOH 1012 or 1022 World History	3
ACG 2021 Financial Accounting Principles	3
HUM Electives (From Approved Listing)	3
Total	**32**

Sophomore Year	**Sem. Hrs.**
ACG 2071 Managerial Accounting Principles	3
ACG 3101 Intermediate Accounting I	3
ECO 2013/2023 Principles of Economics I, II	6
Natural Science Electives	8
MAC 2233 Calculus for Business	3
MAN 3701 Business Ethics	3
GEB 2081, 2082 Intermediate Professional Leadership Development I & II	2
ACG 4941 Accounting Internship I	1
Total	**29**

Junior Year	**Sem. Hrs.**
QMB 2100, 3602 Quantitative Methods & Business Decisions I & II	6
ACG 3111 Intermediate Accounting, II	3
ACG 3361 Cost Accounting	3
MAN 3025 Principles of Management	3
MAR 3023 Principles of Marketing	3
FIN 3403 Corporation Finance	3
BUL 4130 Legal Environment of Business	3
GEB 3083, 3084 Advanced Professional Leadership Development I & II	2
ACG 4942 Accounting Internship II	1
Total	**27**

Senior Year	**Sem. Hrs.**
ACG 4642 Auditing and Assurance Services	3
ACG 4401 Accounting Information Systems	3
TAX 4001 Individual Tax	3
BUL 4350 Commercial Law	3
MAN 4240 Organizational Behavior	3
MAN 4720 Business Policy	3
MAN 4653 Global Business	3
Finance Elective (Upper Level Course Only)	3
Accounting Electives (Upper Level Courses Only)	6
GEB 4931, 4932 Senior Seminar Leadership	2
Total	**32**
Total Semester Hours	**120**

Science Electives (8 hours): select from approved University course listing
NOTE: Consult general catalog for listing of approved courses.

Humanities Electives (3 hours): select from approved University course listing:
NOTE: Consult general catalog for listing of approved courses.

Finance Elective (3 hours): select from the following:

FIN 4324--Commercial Bank Administration
FIN 4414--Financial Management
FIN 4504—Investments
FIN 4424 –Problems in Financial Management
FIN 4443—Financial Policy & Strategy
FIN 4514—Security Analysis & Portfolio Management

Accounting Electives (9 hours): select from the following:

ACG 4642--Business Assurance and Attestation
ACG 3861-- Petroleum Accounting
ACG 4201--Advanced Accounting
ACG 4401--Accounting Information Systems
ACG 4501--Governmental/Not-for-Profit Accounting
ACG 4671--Internal Auditing
ACG 4682--Forensic Accounting
ACG 4801-- Contemporary Accounting Theory
ACG 4852 -- CPA Problems
TAX 4001--Individual Tax
TAX 4101--Corporate Tax

Business Administration Program

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Freshman Communication Skills	6
MAN 2543 Introduction to Business Systems	3
MAC 1105 College Algebra	3
GEB 1091, 1092 Introduction to Professional Leadership Development I & II	2
GEB 1440 Fundamental Concepts	3
MAD 2120 Finite Mathematics	3
AMH 2091 Introduction to African- American History	3
WOH 1012 or 1022 World History	3
ACG 2021 or 2022 Financial Accounting Principles	3
HUM Electives (From Approved Listing)	3
Total	**32**

Sophomore Year	**Sem. Hrs.**
ACG 2071 or 3301 Managerial Accounting Principles	3
ECO 2013/2023 Principles of Economics I, II	6
MAC 2233 Calculus for Business	3
MAN 3701 Business Ethics	3
GEB 2081, 2082 Intermediate Professional Leadership Development I & II	2
ACG 3101or 3102 or ACG 3361 Intermediate Accounting I or Cost Accounting	3
Natural Science Electives (Non-business course only)	8
MAN 4941 Management Internship	1
Total	**29**

Junior Year	**Sem. Hrs.**
QMB 2100, 3602 Quantitative Methods for Business Decisions I & II	6
MAN 3025 Principles of Management	3
MAR 3023 Principles of Marketing	3
FIN 3403 Corporation Finance	3
ISM 3201 Data Files & DataBase Management	3
GEB 3083, 3084 Advanced Professional Leadership Development I & II	2
Business Electives (3000 level or above)	6
MAN 4653 Global Business	3
MAN 4942 Management Internship II	1
Total	**30**

Senior Year	**Sem. Hrs.**
MAN 4240 Organizational Behavior	3
BUL 4130 Legal Environment of Business	3
MAN 4504 Production Management	3
MAR 4803 Marketing Management	3
MAN 4544 Systems Theory and Design	3
MAN 4720 Business Policy	3
Only Taken in Graduating Semester	
Accounting Elective	3
Finance Elective (Upper Level Course Only)	3
GEB 4931, 4932 Senior Seminar Leadership	2
Business Electives (3000 level or above)	3
Total	**29**
Total Semester Hours	**120**

Science Electives (8 hours): select from approved University course listing.
NOTE: Consult University catalog for listing of approved courses.

Humanities Elective (3 hours): select from approved University course listing.
NOTE: Consult University catalog for listing of approved courses.

Finance Concentration: select three to four (contingent upon curriculum requirement) from the following in addition to required finance elective:

FIN 4324 - Commercial Bank Administration
FIN 4414 - Financial Management
FIN 4424 - Problems in Financial Management
FIN 4443 - Financial Policy and Strategy
FIN 4504 - Investments
FIN 4514 - Security Analysis and Portfolio Management

Marketing Concentration: select three to four (contingent upon curriculum requirement) from the following:

GEB 4113- - Introduction to Entrepreneurship
MAR 3000- -Introduction to Professional Selling
MAR 3231- -Principles of Retailing
MAR 3403- -Sales Management
MAR 4503- -Consumer Behavior
MAR 4613- -Marketing Research
MAR 4323- -Principles of Advertising
MAR 4711- -Sports Marketing
MAR 4461- -Purchasing and Supply Management
MAR 4841- -Services Marketing
MKA 2021- -Salesmanship

Note: SBI Course Prerequisites Policy
It is the student's responsibility to be aware of the prerequisites for courses within SBI prior to enrollment in that course. A student may contact his or her advisor or the department chair for additional information concerning course prerequisites and this policy. Failure to fulfill course prerequisites may result in the administrative cancellation of enrollment in the course at any time during the semester with no refund of tuition or fees.

Computer Literacy: 0 hours beyond major. MAN 2543 (3), ISM 3201(3).

Minimum Program Requirements Summary
Total Hours Required 120
General Education 36*
Prerequisite Coursework 21*
Major Coursework 63
Foreign Language 0-12 (depending on placement)
Computer Skills 0 beyond major
Electives to bring total hours to 120*

***Note:** Some prerequisite coursework may also be applied to General Education requirements in math and science. The required prerequisite coursework to be accepted into the Business Administration or Accounting program are as follows:

ACG 2021 or ACG 2022 Principles of Financial Accounting	3
ACG 2071 or ACG 3301 Principles of Managerial Accounting	3
MAN 2543 or CGS 2100 Introduction to Business Systems	3
ECO 2013 Principles of Economics I	3
ECO 2023 Principles of Economics II	3
MAC 2233 Business Calculus	3
STA 2023 or QMB 3600/2100 Statistics	3

ALL MAJORS ARE REQUIRED TO HAVE A MINIMUM OVER-ALL GRADE POINT AVERAGE OF 3.00 TO REGISTER FOR AN ACADEMIC OVERLOAD (more than 18 hours). PERMISSION MUST BE OBTAINED FROM CHAIRPERSON and DEAN BEFORE REGISTERING. NON-COMPLIANCE WILL RESULT IN STUDENT BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES)

WITH TUITION AND FEE LIABILITY.

Business Administration with Program Major Facilities Management

Freshman Year

FALL	**Sem. Hrs.**
AMH 2091 African American History 1	3
ARC 1050 Design 1.1	3
ARC 1274 Intro to Facility Management	3
ENC 1101 Freshman Composition I	3
GEB 1091 Intro Prof Leadership & Develop I	1
FAMU Natural Science	3
Total	**16**

SPRING	**Sem. Hrs.**
ACG 2021 Financial Accounting Principles	3
ARC 1160 Computer Applications in Arch.	1
ENC 1102 Freshman Composition II	3
GEB 1092 Intro Prof Leadership & Develop II	1
MAC 1105 College Algebra	3
FAMU Humanities Elective	3
Total	**14**

Sophomore Year

FALL	**Sem. Hrs.**
ACG 2071 Managerial Accounting Principles	3
ARC 2161 Adv. Topics in Digital Arch	1
ARC 2469 Intro to Technology of Arch	3
GEB 2081 Inter Prof Leadership & Develop I	1
MAC 2233 Business Calculus	3
ECO 2013 Principles of Economics I	3
Total	**14**

SPRING	**Sem. Hrs.**
ARC 3361 Cost Accounting	3
ARC 1290 Facility Operations and Maintenance	3
ECO 2023 Principles of Economics II	3
QMB 2100 Quantitative Methods and Bus. Dec. I	3
GEB 2082 Inter Prof Leadership & Develop II	1
FAMU Natural Science	3
Total	**16**

SUMMER

MAN 4941 Management Internship	1

Junior Year

FALL	**Sem. Hrs.**
ARC 2401 Building Tech Facility Managers 1	3
BCN 1221 Building Construction 1	3
FAMU Humanities Elective	3
FIN 3403 Corporation Finance	3
GEB 3083 Advanced Prof Leadership Develop I	1
GEB 3213 Prof Bus Comm & Report Writing	3
Total	**16**

SPRING	**Sem. Hrs.**
REE 3043 Principles of Real Estate	3
GEB 3084 Adv Prof Leadership Develop II	1
MAR 3023 Principles of Marketing	3
MAN 3025 Principles of Management	3
ARC 2693 Building Tech Facility Managers 2	3
Total	**16**

SUMMER

MAN 4942 Management Internship II	1

Senior Year

FALL	**Sem. Hrs.**
BCN 3720 Construction Planning & Scheduling	3
ECP 4211 Occupational Safety and Health	3
Facility Management Elective	3
GEB 4931 Senior Seminar & Leadership I	1
MAR 4841 Services Marketing	3
Free Elective(s)	3
Total	**16**

SPRING	**Sem. Hrs.**
ARC 4010 Facility Management	3
BUL 4130 Legal Environment of Business	3
Facility Management Elective	3
GEB 4932 Senior Seminar & Leadership II	1
MAN 4720 Business Policy (Capstone)	3
Total	**13**
Curriculum Total	**120**

MAJORS ARE REQUIRED TO HAVE A MINIMUM OVERALL GRADE POINT AVERAGE OF 3.00 TO REGISTER FOR AN ACADEMIC OVERLOAD (more than 18 hours). PERMISSION MUST BE OBTAINED FROM CHAIRPERSON and DEAN BEFORE REGISTERING. NON-COMPLIANCE WILL RESULT IN STUDENT'S BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES) WITH TUITION AND FEE LIABILITY.

Economics Program

Degree Programs
Bachelor of Arts in Economics
Bachelor of Science in Economics
Bachelor of Science in Economics: Minor Business
Course Descriptions

The primary objective of the Economics Program is to provide all students and faculty with the opportunity and the supportive environment for excellence in study, learning, teaching, research, and service. Focusing on significant economic issues and problems, students utilize the best available theoretical framework and empirical research in acquiring functional knowledge and understanding of problems of the human condition. Undergraduate degrees which may be earned are the Bachelor of Arts and the Bachelor of Science.

The program in Economics offers curricula leading to the Bachelor of Arts and the Bachelor of Science degrees in economics, as well as a Bachelor of Science degree in Economics with a minor in business. While all of the degree programs provide a broad liberal arts background, the Bachelor of Arts degree and the Bachelor of Science degree emphasize breadth and research skills, while the Bachelor of Science in economics with a minor in business

degree emphasizes business applications. The economics program trains people for a variety of professions, including business management, finance, government, research, and advanced study in economics and business. A minor in economics requires the completion of ECO 2013, ECO 2023, ECO 3101, ECO 3203, and six (6) credit hours of intermediate and advanced courses in Economics (available at Office of Student Services, Sybil Mobley Complex 302E).

Bachelor of Arts in Economics

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 or ENC 1121, 1122 Freshmen Communication Skills I, I or Honors	6
MAC 1105 or 1114 College Algebra, Algebra & Trig. Function	6
MAC 1147 Pre-Calculus	4
BSC 1005 and BSC 1005 Lab Biological Science w/Lab	4
PSC 1121, AST 1002, or PHY 3464,Physical Science,Astronomy, or Natural Science Elective	4
HUM 2211, 2230 Historical Survey I, II (or other approved "Topical Humanities" courses)**	6
SPC 1017 or SPC 2608 Foundations of Speech or Public Speaking	3
Total	**33**

Sophomore Year	**Sem. Hrs.**
ECO 2013, 2023 Principles of Economics I and II* 1	6
STA 2023 Introduction to Probability and Statistics I or QMB 3600	3
AMH 2010 or 2020 American History	3
AMH 2091 Introduction to African American History or AFA 3104 African-American Experience	3 4
MAC 2311 Calculus I	
Foreign Language (in a single language) *2	6
CGS 1061 or CGS 2120 or CGS 2162 Micro-Computer Applications, Micro-Computers w/ Programming, Micro-Computers w/Programming-Honor s (or other approved computer course)	3
GEB 1091/1092 Introduction to Professional Leadership and Development I & II or GEB 3083	1
Total	**30**

Junior Year	**Sem. Hrs.**
ECO 3101, 3203 Microeconomics, Macroeconomics	6
ECO 4223 Money and Banking	3
ACG 2021 Financial Accounting Principles or ACG 2022 Financial Accounting	3
ACG 2071 Managerial Accounting Principles or ACG 3301 Managerial Accounting	3
ECO 4303 History of Economic Thought	3
Foreign Language (in a single language) *2	6
Minor Electives *6	6
Total	**30**

Senior Year	**Sem. Hrs.**
ECO 3421 Econometrics *4	3
ECO 4704 International Trade *3	3
ECP 4403 Economics of Industrial Organization	3
ECS 4013 Economics of Less Dev. Countries	3
Minor Electives *6	12
ECO 4713 International Finance *3	3
ECO 4401 Mathematical Economics *5	3
Total	**30**
TOTAL	**120**

All classes applied toward graduation must be passed with a grade of "C" or better. See your advisor for approved course sequences in: mathematics, social sciences, humanities, statistics, and computers.

PREREQUISITES

*1. ECO 2013 and ECO 2023 must be completed prior to taking any other Economics courses.
*2. At Least Six Hours of Foreign Language.
*3. ECO 3101 and ECO 3203 must be completed prior to taking ECO 4704, ECP 4703 and ECO 4713.
*4. STA 2023 or QMB 2100 must be completed prior to taking ECO 3421.
*5. MAC 2311 and ECO 2023 must be completed before taking ECO 4401
*6. At Least 12 Hours Of Minor Electives Must Be At 3000 Level or Higher.
**Approved list of "Topical Humanities" courses can be obtained from the Office of Student Services, 302 East Sybil Mobley Complex.

MAJORS ARE REQUIRED TO HAVE A MINIMUM OVERALL GRADE POINT AVERAGE OF 3.00 TO REGISTER FOR AN ACADEMIC OVERLOAD (more than 18 hours). PERMISSION MUST BE OBTAINED FROM CHAIRPERSON and DEAN BEFORE REGISTERING. NON-COMPLIANCE WILL RESULT IN STUDENT BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES) WITH TUITION AND FEE LIABILITY.

Bachelor of Science in Economics

Freshman Year	**Sem. Hrs.**
ENC 1101 1102 Freshman Communicative Skills I, II	6
MAC 1105 1114 College Algebra, Algebra & Trig. Function	6
MAC 1147 Pre-Calculus	4
PSC 1121, AST 1002 or PHY 3464 Physical Science, Astronomy, or Natural Science Elective	4
HUM 2211, 2230 Historical Survey I, II (or other approved "Topical Humanities" courses)**	6
SPC 1017 or SPC 2608 Foundation of Speech or Public Speaking	3
Total	**29**

Sophomore Year	**Sem. Hrs.**
ECO 2013, 2023 Principles of Economics I and II *	6
STA 2023 or QMB 3600 Introduction to Probability and Statistics I or Quantitative Methods for Business Decisions I	3
AMH 2010 or 2020 American History	3
AMH 2091 Introduction to African American History or AFA 3104 African-American Experience	3
MAC 2311 Calculus I	4
SYG 2000 or SYG 3010 Introduction to Sociology or Social Problems (or one non-history course from approved Social Science list)	3
CGS 2060C Computer Literacy	3

(or other approved computer courses)	
GEB 1091/.1092 or GEB 3083	2
Total	**27**

Junior Year	**Sem. Hrs.**
ECO 3101 and 3203 Microeconomics Theory, Macroeconomics Theory	6
ECO 4223 Money and Banking	3
ECO 4303 History of Economic Thought	3
ACG 2021 Financial Accounting Principles	3
ACG 2071 Managerial Accounting Principles	3
ECO 3421 Econometrics *2	3
Minor Electives *5	6
ECO 4504 Public Finance	3
ENC 3320 Advanced Composition	3
Total	**33**

Senior Year	**Sem. Hrs.**
ECO 4704 International Trade *3	3
ECP 4403 Economics of Industrial Organization	3
MAC 2312 Calculus II	4
Minor Electives *5	12
ECO 4401 Mathematical Economics *4	3
ECS 4013 Economics of Less Developed Countries	3
ECO 4713 International Finance *3	3
Total	**31**
TOTAL	**120**

All classes applied toward graduation must be passed with a grade "C" or better. See your advisor for approved course sequences in: mathematics, social science, humanities, statistics, and computers.

PREREQUISITES

*1. ECO 2013 and ECO 2023 must be completed prior to taking any other Economics courses.
*2. STA 2023 Must Be Completed Prior To Taking ECO 3421.
*3. ECO 3101 and ECO 3203 must be completed prior to taking ECO 4704, ECO 4713 and ECP 4703.
*4. MAC 2311 and ECO 2023 must be completed before taking ECO 4401
*5. At Least 12 Hours Of Minor Electives Must Be At 3000 Level or Higher.

**Approved list of "Topical Humanities" courses can be obtained from the Office of Student Services, 302 East Sybil Mobley Complex.

MAJORS ARE REQUIRED TO HAVE A MINIMUM OVERALL GRADE POINT AVERAGE OF 3.00 TO REGISTER FOR AN ACADEMIC OVER-LOAD (more than 18 hours). PERMISSION MUST BE OBTAINED FROM CHAIRPERSON and DEAN BEFORE REGISTERING. NON-COMPLIANCE WILL RESULT IN BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES) WITH TUITION AND FEE LIABILITY.

Bachelor of Science in Economics: Minor Business

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Freshman Communicative Skills I, II or ENC 1121, 1122 Honors	6
MAC 1105, 1114 or 1147 or MGF 1106 or 1107 Mathematics	6
BSC 1005 Biological Science and BSC 1005 Lab or ISC 1006 or ISC 1007 Wide World Science I or II	4
PSC 1121, AST 1002 or PHY 3464 Physical Science, Astronomy or Physical Basis of Music or Natual Science Elective	4
SPC 1050 or SPC 2600 Foundations of Speech or Public Speaking	3
HUM 2211, 2230 Historical Survey I and II (or other approved "Topical Humanities " courses)**	6
Total	**29**

Sophomore Year	**Sem. Hrs.**
ECO 2013, 2023 Principles of Economics I and II * 1	6
AMH 2010 or 2020 American History	3
AMH 2091 Introduction to African American History or AFA 3104 African-American Experience	3
MAC 2233/MAC 2311 Business Calculus/Calculus I	3/4
STA 2023 Introduction to Probability and Statistics I or QMB 3600 Quantitative Methods for Business Decisions I	3
SYG 2000 or SYG 3010 Introduction to Sociology or Social Problems Social Science Elective *(or one non-history course from approved Social Science course list)*	3
ACG 2021 Financial Accounting Principles	3
ACG 2071 Managerial Accounting Principles	3
GEB 1091/1092 or GEB 3083	2
Total	**29/30**

Junior Year	**Sem. Hrs.**
ECO 3101, 3203 Microeconomics, Macroeconomics	6
ECO 4223 Money and Banking	3
ECO 4303 History of Economic Thought	3
ECO 3932 Economics of Managerial Finance or FIN 3403 Corporate Finance *2	3
CGS 2060C Computer Literacy (or other approved computer course)	3
ECP 3203 Labor Economics	3
ECO 4504 Public Finance	3
ECP 4143 Black Economic Development	3
ECO 4943 Internship Economics	4
Total	**31**

Senior Year	**Sem. Hrs.**
ECO 4704 International Trade *3	3
ECP 4703 Managerial Economics *3	3
MAR 3023 Principles of Marketing	3
BUL 4130 Legal Environment of Business	3
ECO 3421 Econometrics *4	3
ECO 4713 International Finance *3	3
ECO 4401 Mathematical Economics *5	3
ECP 4403 Economics of Industrial Organization	3
ECS 4013 Economics of Less Developed Countries	3
ECO 4253 Monetary and Fiscal Policy *2	3
Total	**30**
TOTAL	**120**

All classes applied toward graduation must be passed with a grade of "C" or better. See your advisor for approved course sequences in: mathematics, social science, humanities, statistics, and computers.

Prerequisites:
*1. ECO 2013 and ECO 2023 must be completed prior to taking any other Economics courses.
*2. ACG 2021, ACG 2071, ECO 2013, and ECO 2023 must be completed prior to taking FIN 3403, ECO 3932 or ECO 4253.
*3. ECO 3101 and ECO 3203 must be completed prior to taking ECO 4704, ECO 4713 and ECP 4703.
*4. STA 2023 must be completed prior to taking ECO 3421.
*5. MAC 2311 and ECO 2023 must be completed prior to taking ECO 4401.

**Approved list of "Topical Humanities" courses can be obtained from the Office of Student Services, 302 East Sybil Mobley Complex.

MAJORS ARE REQUIRED TO HAVE A MINIMUM OVERALL GRADE POINT AVERAGE OF 3.00 TO REGISTER FOR AN ACADEMIC OVERLOAD (more than 18 hours). PERMISSION MUST BE OBTAINED FROM CHAIRPERSON AND DEAN BEFORE REGISTERING. NON-COMPLIANCE WILL RESULT IN STUDENT BEING ADMINISTRATIVELY WITHDRAWN FROM CLASSES(ES) WITH TUITION AND FEE LIABILITY.

Course Descriptions

ACG 2021/2202 Financial Accounting Principles (3) Conceptual introduction to financial accounting. Emphasis is placed on the preparation and interpretation of financial statements and processes by which information is generated.
ACG 2021L Financial Accounting Principles Lab To review and complete assignments and receive individual attention on select topics.
ACG 2071/3301 Managerial Accounting Principles (3) Prerequisite: ACG 2021 Conceptual introduction to managerial accounting. Emphasis placed on cost reporting and analytical tools used by management.
ACG 3101/3102 Intermediate Accounting I (3) Prerequisite: ACG 2021. In-depth review of the generally accepted accounting principles used in the preparation of financial statements and the use of financial information for decision-making.
ACG 3101L Intermediate Accounting I Lab To review and complete assignments and receive individual attention on select topics.
ACG 3111/3112 Intermediate Accounting II (3) Prerequisite: ACG 3101 or ACG 3102 (Continuation of ACG 3101). Emphasis is placed on the allocation, valuation, classification, and disclosure issues associated with financial reporting for decision-makers.
ACG 3361 Cost Accounting (3) Prerequisite: ACG 2071. This course gives an in-depth review of the cost procedures, tools, and reports used for decision-making and performance evaluation.
ACG 3361L Cost Accounting Lab To review and complete assignments and receive individual attention on select topics.
ACG 4642 Business Assurance and Attestation (3) Prerequisite: ACG 3101 or ACG 3102 and ACG 3111 or ACG 3112. This course gives an overview of generally accepted auditing standards for financial statement audits and the nature of the value-added assurance services decision-makers demand in the information age.
ACG 3861 Petroleum Accounting (3) Prerequisite: ACG 3101 or ACG 3102. This course focuses on the study of accounting principles and practices of the oil and gas industry.
ACG 4201 Advanced Accounting (3) Prerequisite: ACG 3111 or ACG 3112. This course deals with accounting for business combinations and consolidated entities. Other topics include international accounting, segment reporting, partnership accounting, corporate liquidation and debt restructuring.
ACG 4201L Advanced Accounting Lab To review and complete assignments and receive individual attention on select topics.
ACG 4401 Accounting Information Systems (3) Prerequisites: ACG 3111 or ACG 3112. Study of the controls, techniques and resources used to efficiently and effectively manage information in a computerized environment.
ACG 4501 Governmental/Not-for-Profit Accounting (3) Prerequisite: ACG 3101 or ACG 3102. An in-depth review of the current standards and specialized accounting practices of state and local governments, colleges and universities, health care entities, other not-for-profit organizations, and federal government agencies.
ACG 4671 Internal Auditing (3) Prerequisite: ACG 4642. An in-depth review of the activities that provide independent assurance and collaborative consulting services to an organization and other stakeholders.
ACG 4682 Forensic Accounting (3) Prerequisite: ACG 3101 or 3102. Study of fraud investigation techniques and the accountant's responsibilities.
ACG 4801 Contemporary Accounting Theory (3) Prerequisite: ACG 3111 or ACG 3112. This course focuses on the study of current topics in accounting.
ACG 4901 Directed Individual Study (Varies 1 to 6) Prerequisite: Permission of department chair and supervising professor. Independent study in accounting with appropriate supervision.
ACG 4941 Accounting Internship I Prerequisite: Permission of internship coordinator: To gain work experience with a business entity.
ACG 4942 Accounting Internship II Prerequisite: Permission of internship coordinator: To gain work experience with a business entity.
ACG 4943 Accounting Internship III Prerequisite: Permission of internship coordinator: To gain work experience with a business entity.
ARC 1010 Introduction to Building Environments (3) Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, planning, engineering, architecture, construction management, facility system technical services (HVAC, electrical, plumbing), business support services (financial management, IT, HR, Strategic Planning). The course is an overview of the facility management profession. It also introduces students to the diverse roles and responsibilities of facility managers in public and private organizations.
ARC 1301 Design 1.1 (4) The primary foci of this course are the development of two- and three-dimensional graphic skills and the ability to think spatially and to manipulate elements in space. This first studio course is an exploration of basic two- and three- dimensional design principles and strategies used to create a functional built environment with special emphasis on circulation, lighting, finishes, furniture placement and facility system technical services (HVAC, electrical, plumbing). This course also introduces students to a plethora of decision decisions that affect business success.

ARC 13021 Design 1.2 (4) Prerequisite: ARC 1050. This course continues the emphases and topics studied in Design 1.1, with increased expectation with regard to graphic and spatial manipulation ability. A continuation of two- and three- dimensional design principles and strategies used to create a functional built environment with special emphasis on circulation, lighting, finishes, furniture placement and facility system technical services (HVAC, electrical, plumbing). This course continues to explore design decisions that affect business success.

ARC 2161 Advanced Topics in Digital Architecture (1) Prerequisite: ARC 1301. Continuation of development of digital media to design, explore experiment, and most importantly represent architecture work. The various 2-D and 3-D digital interfaces introduced will be of industry standard, which will allow for a sense for preparation for the current methods and practices for professional growth.

ARC 2461 Materials and Methods I Facility & Organizational Effectiveness (3) Prerequisite: ARC 1010. This course introduces students to the increasingly complex building systems and controls that provide both opportunity and challenge for the facility manager. Major topics of discussion include environmental stewardship, facility operations and maintenance, building codes, regulations and standards; and technologies to assist the facility manager.

ARC 2470 Introduction to the Technology of Architecture Facility Systems & Services (3) The lecture course provides a survey of building systems, Facility System Technical Services (HVAC, electrical, plumbing, sanitation, waste water), transportation, construction practices, and sustainability. This course introduces themes that cut across technology areas such as how buildings respond to the natural and built environment, as well as, how building design affects organization effectiveness (human resources, financial management, information technology, strategic planning).

ARC 4010 Facility Management (3) Prerequisite: BCN 3720 Construction Planning and Scheduling, MAR 4841. Service Marketing. This course provides a comprehensive recap of the different aspects of the Facility Manager's role, from compliance with health and safety law through risk management to getting the most out of buildings and space. The course also provides practical guidance to assist the future Facilities Manager in meeting the increasingly complex demands of their profession. Facility management is a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, planning, engineering, architecture, construction management, facility system technical services (HVAC, electrical, plumbing), business support services (financial management, IT, HR, Strategic Planning). Additional course topics include the role of the facility manger in acquiring new facilities and in managing and maintaining existing building stock. Focus of the course includes (1) architect selection strategies, (2) management of the building delivery process from a client perspective, (3) move-in logistics, (4) evaluation of space needs and effectiveness, (5) renovation, and (6) facility maintenance planning.

ARC 4318 Introduction to Programming Facility Programming & Planning (3) Prerequisite: MAR 3023 Principles of Marketing, ARC 4684 Environmental Technology. The identification and analysis of key recurring issues and difficulties associated with policy, programming, design, and management of various complex facilities and building types in general is covered in this course. Topics such as leadership and management in professional practice, planning and project management, and integration of technologies to assist the facility management professional are also explored. This course increases student's awareness of the complexity, criticality, and collaboration needed of architects, facility managers, engineers, and planners to program, plan, design, and operate certain building types.

ARC 4684 Environmental Technology (3) Prerequisite: ARC 2470. This course considers thermal, electrical, mechanical and conveyance systems and their integration into the facility management process. This course familiarizes students with the integrated building technology systems (thermal, electrical conveyance and mechanical systems) within the building delivery and maintenance process. Students will gain an understanding of these behaviors and systems (sanitary water supply, sewage disposal conveyance heating, ventilating, air conditioning, and passive and active sustainable systems) and practices for creating and controlling interior environments, building envelopes & conditions. This course exposes students to the increasingly complex building systems and controls that provide both opportunity and challenge for the facility manager. Integration of new technologies to conduct short and long term management of facilities is introduced, as well as, instilling a mindset to expand as new technologies emerge. Major topics of discussion include environmental stewardship, operations and maintenance, finance (life cycle cost including operating and political cost), and technology.

BCN 3700 Construction Management I (3) Prerequisite: ARC 2461. Study of the processes, techniques and tools associated with construction management. Topics include the roles of the project manager and other key personnel; the elements and main objectives of construction management; the construction industry; construction practices; project cost management; project planning and scheduling; resource management; and project financial management. Primavera and Prolog Manager Software Programs are introduced in this course.

BCN 3720 Construction Planning and Scheduling (2) Prerequisite: ARC 2461. Various network methods of project scheduling such as Activity on-Arrow (AOA) and Activity-on-Node (AON), Pert, bar-charting, line of balance, and other techniques are featured. Microcomputers are used for scheduling, resource allocation, and time/cost analysis.

BCN 4617 Construction Estimating I (3) Prerequisite: BCN 3720. Quantity surveying and cost estimating for small scale construction projects are major topics. This course includes: 1). a review of basic math; 2). quantity recognition from working drawings; 3). discussions of various units of measure and productivity rates; and 4). current estimating software.

BUL 4130 Legal Environment of Business (3) Prerequisite: ACG 2021 MAR 3023, MAN 3025. This course examines the fundamental principles of the legal system. Emphasis will be placed on how the law plays an important role in business.

BUL 4350 Commercial Law (3) Prerequisite: ACG 3101 or ACG 3102. Introduction to legal concepts in those areas of the law essential to commercial transactions, including creation and performance of contracts for the sale of goods and other property, negotiable instruments, real and personal property and secured transactions. The course will be based upon the Uniform Commercial Code.

BUL 4905 Directed Individual Study Business Law (Varies 1 to 6) Prerequisite(s): Permission of the Director of Academic Programs and the supervising professor. Independent study in busi-

ness law with appropriate supervision.

ECO 2013 Principles of Economics I (3) Prerequisite: must be satisfied prior to taking any other Economics course. Operation of the economy with emphasis on national income analysis, banking system, monetary and fiscal policy.

ECO 2023 Principles of Economics II (3) v: ECO 2013. Operation of the economy with emphasis on price and output determination, market organization, and contemporary economic problems.

ECO 3040 Consumer Economics (3) Analysis of consumer problems designed to help people become more informed, rational and effective in the marketplace.

ECO 3041 Economics of Consumer Credit (3) Teach students efficient management of money and how such management is linked to wealth creation and credit worthiness.

ECO 3101 Microeconomic Theory (3) Prerequisite: ECO 2023. Microeconomic framework of economy, supply, demand, price, output, resource allocation, and policy issue.

ECO 3203 Macroeconomic Theory (3) Prerequisite: ECO 2013. Macroeconomic framework of economy, prices, output, employment and public policy.

ECO 3421 Introduction to Econometrics (3) Prerequisite: ECO 2023, STA 2023 or QMB 3600. Econometric model building for business and economic measurement and forecasting.

ECO 3921 Professional Development (2) Skills developed to demonstrate mastery of leadership and interpersonal skills that will assist in obtaining either permanent employment or graduate education.

ECO 3932 Economics of Managerial Finance (3) Prerequisite: ECO 2023, ACG 2021 and ACG 2071 A study of the economic implications and analysis of investments and financing of corporations.

ECO 4223 Money and Banking (3) Prerequisite: ECO 2023 and ECO 2013. General monetary principles and problems including history of the U.S. system, Federal Reserve system, and monetary theory and policy.

ECO 4253 Monetary and Fiscal Policy (3)Prerequisite: ECO 2023, ECO 2013, ACG 2021 and ACG 2071. Use of federal budget and central bank to influence growth and stabilization of American economy.

ECO 4303 History of Economic Thought (3) Prerequisite: ECO 2013, ECO 2023. A study of the origin and development of economic theories and ideas.

ECO 4401 Mathematical Economics (3) Prerequisite: ECO 2023, MAC 2311. Mathematical foundations of economic theory.

ECO 4504 Public Finance (3) Prereq: ECO 2023. Economic principles of government spending, taxation, borrowing and debt management.

ECO 4703 International Economics (3) Prereq: ECO 2023 and ECO 2013. Economic aspects of international relations, balance of payments, tariffs, exchange rates, and organizations.

ECO 4704 International Trade (3) Prerequisite: ECO 2013, ECO 2023, ECO 3203, ECO 3101. Study of trade theory, commercial policy and international trade institutions.

ECO 4713 International Finance (3) Prerequisite: ECO 2013, ECO 2023, ECO 3101, and ECO 3203. Study of theory and practice of international finance and investment. The economic basis and motivation for international mobility of capital and investment are emphasized.

ECO 4905 Directed Individual Study (1-6) Prerequisite: Permission of instructor and department chairperson. Independent research in economics by senior students with appropriate supervision.

ECO 4910 Senior Thesis (3) Prerequisite: ECO 2023, ECO 3101, ECO 3421, STA 2023. Research oriented course designed to teach elementary research methods in economics. Data presentation and analysis are emphasized.

ECO 4921 Senior Seminar Professional Development I (1)Prerequisite: ECO 3921 Study of advanced presentation skills using computer technology. Includes topics addressing the transition from campus to the workplace.

ECO 4943 Internship Economics (4) Prereq: Permission of internship coordinator and department chairperson. Practical application of course work in a government, business, or financial institution. Normally requires a full-time affiliation with the sponsoring agency for a minimum of 12 weeks.

ECP 3142 Employee and Personnel Law (3) Study of the various employment and policies directed at the hiring and employment of employees in various types of firms.

ECP 3144 Employee and Personnel Law II (4) Application of techniques used by employers in complying with various employment laws.

ECP 3203 Labor Economics (3) Prerequisite: ECO 3101 and ECO 3203. Analysis of labor problems and issues.

ECP 3210 Wage and Salary Administration (3) A study of various wage and salary plans in both unionized and nonunionized organizations.

ECP 3214 Advanced Labor Relations (3) Prerequisite: Completion of at least one labor relations course or permission of instructor. An in-depth study of labor issues in America.

ECP 3930 Seminar in Consumer Affairs (3)Prerequisite: ECO 2013, ECO 2023. Explores how the concepts of customer service and consumer affairs have been operationalized in various industries.

ECP 3932 Economics of Customer Service (3) Prerequisite: ECO 2013 and ECO 2023. Study emphasizes the economics of customer service and explores the nature of quality management in the service industry.

ECP 4143 Black Economic Development (3) Prerequisite: ECO 2013, ECO 2023. Nature and extent of problems faced by blacks.

ECP 4147 Organized Labor and the Black Worker (3) Prereq: ECP 4213 or permission of instructor. The black worker in the United States and his role in organized labor.

ECP 4204 Wage Theory (3) Prerequisite: ECO 3103. Economics analysis of the wage determination process.

ECP 4211 Occupational Safety and Health (3) An analysis of the Occupational Safety Health Act, its applications and implications.

ECP 4212 Workmen's Compensation Law (3) A study of the practices, procedures, and law governing workmen's compensation.

ECP 4213 Labor Relations and Problems (3) Labor relations issues and problems in modern society from both management and employees perspectives.

ECP 4222 Human Resource Management (3) Allocation and development of human resources.

ECP 4230 Labor Law I (3) Prerequisite: ECO 4213 or permission of the instructor. An in-depth study of labor law and legislation and their effect on collective bargaining.

ECP 4231 Labor Law II Prerequisite: ECO 4213 and ECP 4230. (3) A study of labor law and legislation affecting public sector

bargaining.

ECP 4232 Collective Bargaining (4)Prerequisite: ECP 4213 or permission of instructor. An analysis of the theory and practice of collective bargaining in the private and public sectors.

ECP 4233 Seminar in Collective Bargaining (3) An analysis of the theory and practice of collective bargaining in the private and public sectors.

ECP 4234 Public Sector Collective Bargaining (3) Prerequisite: ECP 4213 or permission of the instructor. Study of collective bargaining issues and techniques in the public sector.

ECP 4241 Workshop in Arbitration (3) Practices and procedures of arbitration. Techniques of preparation and presentation of arbitration cases with emphasis on how arbitrators view specific issues.

ECP 4242 Conflict Resolution (3) Prerequisite: ECP 4232 or 4233 or permission of instructor. An exploration of the various dispute resolution methodologies used by individuals and groups.

ECP 4243 Grievance Handling (3) A study of how management and unions resolve the grievances of employees.

ECP 4403 Economics of Industrial Organization (3) Prerequisite: ECO 2023 and ECO 2013. Theory of market organization and efficiency of resource allocation and issues of anti-trust legislation.

ECP 4453 Seminar in Economic Consumer Law and Legal Research (3) Study of the research and applications of the various consumer protection legislation at the federal, state and local level.

ECP 4703 Managerial Economics (3) Prerequisite: ECO 3101 and ECO 3203. Study of decision and policy making under conditions of certainty, risk and uncertainty.

ECP 4931 Seminar in Retail Management (3) Prerequisite ECO 2023. Study exploring the general nature of retailing management and their proceeds to explain retailing methods in specific industries and the accompanying economics of that industry.

ECS 4003 Comparative Economic Systems (3) Prerequisite: ECO 2013 and ECO 2023. Comparative analysis of capitalism, socialism, communism, and fascism.

ECS 4013 Economics of Less Developed Economies (3) Prereq: ECO 2013 and ECO 2023. Economic problems of emerging nations.

FIN 3403 Corporation Finance (3) Prerequisite: ACG 2071. This course deals with the identification, analysis and solution of corporate financial and/or treasury problems in the global financial environment.

FIN 4324 Commercial Bank Administration (3) Prerequisite: FIN 3403 or FIN 4424. The course focuses on the study of the relationship of monetary policy and interest rate dynamics to bank management decision making.

FIN 4414 Financial Management (3) Prerequisite: FIN 3403 or FIN 4424. An examination of the financial policies of corporations with special emphasis on dividend policy, cost of capital, capital structure, capital budgeting, mergers and acquisitions, bankruptcy and reorganization.

FIN 4443 Financial Policy & Strategy (3) Prerequisite: FIN 4414. Cases and readings in corporate finance in the areas of capital budgeting, capital structure, cost of capital, mergers and reorganization.

FIN 4504 Investments (3) Prerequisite: FIN 3403 or FIN 4424 . The study and appraisal of the stock market, investment strategies, and portfolio theories.

FIN 4514 Security Analysis and Portfolio Management (3) Prerequisite: FIN 4504. A comprehensive coverage of investment topics including bond analysis, option valuation, commodities, futures and option contracts, and portfolio analysis, evaluation and management. Use of options as a financial risk management tool is emphasized.

FIN 4905 Directed Individual Study Finance (Varies 1 to 6) Prerequisite: Permission of area coordinator and the supervising professor: Independent study in finance with appropriate supervision.

FIN 4941 Finance Internship I Prerequisite: Permission of internship coordinator: To gain work experience with a business entity.

FIN 4942 Finance Internship II Prerequisite: Permission of Internship Coordinator: To gain work experience with a business entity.

GEB 1091 Introduction to Professional Leadership Development I (1) SBI majors only. (Others by permission of the area coordinator of Professional Development) Structured team activities, laboratories, and workshops designed to develop strong personal qualities and skills.

GEB 1092 Introduction to Professional Leadership Development II (1) Prerequisite GEB 1091. SBI majors only. (Others by permission of the area coordinator of Professional Development) Structured team activities, laboratories, and workshops designed to develop strong personal qualities and skills.

GEB 1440 Fundamental Concepts I (3) SBI majors only. Introduction to relationships essential to economic theory and basic business concepts.

GEB 1441 Fundamental Concepts II (3) Prerequisite GEB 1440. SBI majors only. Introduction to relationships essential to economic theory and basic business concepts.

GEB 2081 Intermediate Professional Leadership Development I (1) Prerequisite GEB 1092. SBI majors only. Structured activities and workshops designed to develop both strong personal qualities and skills.

GEB 2082 Intermediate Professional Leadership Development II (1) Prerequisite GEB 2081 SBI majors only. Structured activities and workshops designed to develop both strong personal qualities and skills.

GEB 3083 Advanced Professional Leadership Development I (1) Prerequisite: GEB 2082 SBI majors only. Structured activities and workshops designed to develop strong personal qualities and skills required to achieve institutional objectives.

GEB 3084 Advanced Professional Leadership Development II (1) Prerequisite: GEB 3083 SBI majors only. Structured activities and workshops designed to develop strong personal qualities and skills required to achieve institutional objectives.

GEB 3911 Specialist Introduction to Professional Development (2) Prerequisite(s): School of Business and Industry Undergraduate Program majors, Junior standing or permission, AA degree. Structured activities and workshops designed to develop strong personal qualities and team skills required to achieve institutional objectives.

GEB 3912 Specialist Intermediate Professional Development (2) Prerequisite(s): GEB 3911, School of Business and Industry Undergraduate Program majors, Junior standing, AA degree. Structured activities and workshops designed to develop strong personal qualities and team skills required to achieve institutional objectives.

GEB 4931 Senior Seminar and Leadership I (1) Prerequisite:

GEB 3084 SBI majors only. Senior level experiential leadership skill development and application in a simulated business environment. Structured team activities, laboratories, and workshops designed to develop personal qualities and skills as well as leadership, supervisory, and management skills. Students are evaluated on the basis of their managerial performance and the positive leadership they exhibit.

GEB 4932 Senior Seminar and Leadership II (1) Prerequisite GEB 3084 SBI majors only. Senior level experiential leadership skill development and application in a simulated business environment. Structured team activities, laboratories, and workshops designed to develop personal qualities and skills as well as leadership, supervisory, and management skills. Students are evaluated on the basis of their managerial performance and the positive leadership they exhibit.

GEB 4113 Strategies for Entrepreneurship Decision Making (3) Prerequisite: Junior level standing.. Strategies to expand existing firms and to develop new ventures in the current and future business environment. An upper level business elective for Accounting and Business Administration majors only.

GEB 4905 Directed Individual Study PLD (3) Prerequisite(s): Permission of the department chair and the supervising professor. Independent study in management with the appropriate supervision available when deemed appropriate by management department.

ISM 3201 Data Files & Database Management (3) Prerequisite(s): MAN 2543 or CGS 2100 or equivalent. Basic instruction in data structures, data modeling and data dictionaries. Main features of linked-list, hierarchical, network and relational database models and extensive business application problem solving are included.

ISM 4400 Decision Support Systems (3) Prerequisite: MAN 2543. The design, development, implementation, management, and use of decision support systems including concepts of data management, modeling decision support systems, and decision-making.

ISM 4420 Managerial Expert Systems (3) Prerequisite(s): ISM 3201. Principles of expert and decision support systems in business, the software application programs that embody some specific area of business expertise.

MAN 2543 Introduction to Business Systems (3) Introduces students to computer and information technology in business organizations. Provides the student with the fundamental knowledge of computer and information systems and how they are used in support of a business operation, management, planning and control.

MAN 3025 Principles of Management (3) Prerequisite: Junior standing. An introductory course in the field of Management that focuses on the five primary conceptual areas of management: Planning, Leading, Organizing, Communicating, and Controlling. Special attention is devoted to structural variables (elements) and their implication for organization, communication, power, and decision-making among other important relations. Five to six analytical models are introduced to explore the student's conceptual understanding and perception of relevant social situations through the use of extensive supplementary readings.

MAN 3532 Management Engineering I (3) Prerequisites: MAN 3531 and MAC 2233. A study of the techniques available for a systematic approach to the analysis of manufacturing systems. Course content includes the application of manual and computer-based techniques to re-engineer manufacturing systems and evaluate system improvements.

MAN 3533 Management Engineering II (3) Prerequisites: MAN 3532. An introduction to the tools and techniques of modern engineering management using the framework of the project life cycle. Course content includes the application of manual and computer-based techniques to reengineer management systems and evaluate system improvements.

MAN 3610 Distribution of World Resource/Business (3) Prerequisites(s): MAN 3025 and Junior standing. In this course, emphasis is placed on understanding the critical role of resources in business and in the global economy, various dimensions of resources and their geographical distribution across the world, and economic development and resource demand, supply and use. Students will conduct a series of country- and continent-level, map-based analyses of various resources and their production and consumption as a fundamental process of active learning.

MAN 3701 Business Ethics (3) An introductory course that examines individual, organizational, and macro level issues in business ethics. This course takes a personal interactive approach in developing and/or enhancing the student's personal code of ethics.

MAN 4240 Organizational Behavior (3) Prerequisite(s): MAN 3025 and Junior standing. This course examines the actions and attitudes that individuals exhibit within an organizational context. It utilizes both theory and practical application to analyze how individuals and groups impact the behavior within an organization. It develops an understanding of organizational phenomena regarding individual differences, interpersonal influence, communication, leadership, power and politics, ethical decision-making, motivation, and organizational culture. The focus is on improving productivity and other areas of performance improvement.

MAN 4301 Personnel Management (3) Prerequisite(s): MAN 3025. To have a workable knowledge of the procedures global and diverse organizations use to implement ethical human resource policies in the areas of recruitment, selection, job analysis, counseling, training & development, promotion, transfer, and compensation.

MAN 4504 Production Management (3) Prerequisite(s): MAN 3025 and QMB 3602. Plant location, design, construction, internal organization and planning for manpower, materials, production, operations, and quality control. This course focuses on the creation of value through the integrated production and distribution of goods, services, and information.

MAN 4532 Engineering & Production Management (3) Prerequisite(s): MAN 3025 and QMB 3602. Plant Location, Design, Construction, Internal Organization And Planning For Manpower, Materials, Production, Operations And Quality Control. This course focuses on the creation of value through the integrated production and distribution of goods, services and information. Additionally, this course content includes the application of manual and computer based techniques to re-engineer manufacturing systems and evaluate systems improvements.

MAN 4544 Systems Theory and Design (3) Prerequisite(s): CGS 1160 or MAN 2543, ISM 3201. The analysis and design of information systems for management decision-making.

MAN 4570 Purchasing and Materials Management (3) Prerequisites QMB 3602. This course will introduce business students to the broad area of Strategic Purchasing and Supply Management (SPSM). The course will introduce the student to the strategic importance of SPSM in a corporation's ability to complete. It will then move to the supply organization. Here the importance of the supply organization will be studied as it functions in the corpora-

tion. Next the course will focus upon the importance of ensuring quality in SPSM, quantity and inventory in SPSM and strategy in SPSM. Next the issue of transportation and delivery will be considered, again with the introduction of computer modeling . Next, will come the issues of pricing and supply selection, research and metrics in relation to the competent suppliers and fair pricing, global supply, make or buy decisions, and insourcing versus outsourcing. Throughout the course the role of analytical models will be emphasized in POM. Since SPSM has a substantial quantitative component, the course will emphasize the use of relevant models and computer solutions.

MAN 4653 Global Business (3) Prerequisite Junior Standing. A study of the international, economic and political environment in which trade, investment, and management decisions take place.

MAN 4720 Business Policy (3) Prerequisite(s): MAN 3025, MAR 3023, QMB 3620, FIN 3403, ACG 3101 or ACG 3361 or ACG 3632, ECO 2023 and have completed at least 105 semester hours. Comprehensive examination of the art and science of formulating, implementing and evaluating policies and procedures that enable organizations to achieve short- and long-term objectives.

MAN 4905 Directed Individual Study Management (3) Prerequisite(s): Permission of the department chair and the supervising professor. Independent study in management with the appropriate supervision available when deemed appropriate by management department.

MAN 4941 Management Internship I (variable) Prerequisite ACG 3102, permission of the director of professional programs and certification by the residency/internship office. Full-time affiliation as an intern with a School of Business and Industry approved organization or institution. Residency assignments can either be in accounting, finance, management, or marketing.

MAN 4942 Management Internship II (variable) Prerequisite Level 1 residency, permission of the director of professional programs and certification by the residency/internship office. Full-time affiliation as an intern with a School of Business and Industry approved organization or institution. Residency assignments can either be in accounting, finance, management, or marketing.

MAR 3000 Introduction to Professional Selling (3) Prerequisite(s): MAR 3023. Develops analytical and knowledge based skills through learning activities relating to the organization, selection, training, motivation, and control of a sales force. An upper level business elective.

MAR 3023 Principles of Marketing (3) Prerequisite(s): ACG 2021 or 2022, ACG 2071or 3301, ECO 2013, ECO 2023. minimum of Junior status. This course centers on marketing theory, marketing management, sales management and market research. In addition, public and customer relations, advertising, and distribution will be explored.

MAR 3231 Principles of Retailing (3) Prerequisite MAR 3023. Analysis of the field of retailing. Includes pertinent management theories and practices in analyzing, organizing, planning and controlling retail operations, both large and small.

MAR 3403 Sales Management (3) Prerequisite(s): MAR 3023 and or MAR 3000 Exposure to the theoretical concepts of sales management, expert information from today's leading sales professionals, discussions and practice of current sales management issues, and a strong foundation in written communication. An upper level business elective.

MAR 4323 Principles of Advertising (3) Prerequisite(s): MAR 3023 Major issues associated with modern advertising and sales promotion in organizations. An upper level business elective.

MAR 4461 Purchasing and Supply Management (3) Prerequisite(s): MAR 3023. This course will examine the role of Purchasing and Supply Management in companies and provide students with an introduction to the analytical tools and techniques used in Purchasing and Supply Management.

MAR 4503 Consumer Behavior (3) Prerequisite(s): MAR 3023. Discussion of the underlying theories of the consumer buying decision process. An upper level business elective.

MAR 4613 Marketing Research (3) Prerequisite(s): MAR 3023. Basic research concepts, techniques and the application of analytical approaches to marketing problems. An upper level business elective.

MAR 4711 Sports, Recreation, and Entertainment Marketing (3) Prerequisite(s): MAR 3023. Introduction to the marketing practices of sports, recreation, and entertainment organizations through a review of terminology, systems, techniques, and processes that are used by these entities. An upper level business elective.

MAR 4803 Marketing Management (3) Prerequisite(s): MAR 3023. Identification of market opportunities, formation of marketing programs and the implementation of competitive strategies.

MAR 4841 Services Marketing (3) Prerequisite(s): MAR 3023. Introduction to the highly abstract services marketing arena through a review of terminology, systems, techniques, and processes that differentiate the marketing of physical goods from the marketing of services and spaces, inclusive of a capstone facilities management project.

MAR 4905 Directed Individual Study (3) Prerequisite(s): Permission of the department chair and the supervising professor. Independent study in marketing with the appropriate supervision when deemed appropriate by marketing department.

MAR 4941 Marketing Internship I Prerequisite(s): Permission of internship coordinator: To gain work experience with a business entity.

MAR 4942 Marketing Internship II Prerequisite(s): Permission of internship coordinator: To gain work experience with a business entity.

MKA 2021 Salesmanship (3) Prerequisite(s): MAR 3023. Develops analytical and knowledge based skills through learning activities relating to the organization, selection, training, motivation, and control of a sales force. An upper level business elective.

MKA 3702 Market Application of Economic Theories (3) Prerequisite QMB 2100. Provides a basic understanding of processes that define and affect different markets in a global economy with emphasis on the essential relationships of economics.

QMB 2100 Quantitative Methods for Business Decisions I (3) Prerequisite MAC 1105. Principles and methods of collecting, presenting, and analyzing business data, using descriptive statistics, probability theory, statistical inference, approximation techniques and regression analysis. Extensive computer application use.

QMB 3602 Quantitative Methods for Business Decisions II (3) Prerequisite QMB 2100 or 3600. Applications of statistical decision theory, linear programming and other mathematical models used in business decision-making. Interdisciplinary problem solving, strategy exercises, decision games, and other applied models.

Q**MB 4701 Operations Analysis** (3) Prerequisite: QMB 3602 1. Linear and Programming, 2. Input-Output Analysis, 3. Game Theory and 4. Applications to Business.

QMB 4820 Linear Programming (3) Prerequisite: QMB 3602. Formulation of problems from the private and public sectors us-

ing the mathematical model of linear programming. Students have opportunities to formulate and solve models developed from more complex case studies and to use various computer programs.

QMB 4905 Directed Individual Study (3) Prerequisite(s): Permission of the department chair and the supervising professor. Independent study in quantitative analysis with the appropriate supervision available when deemed appropriate by management department.

TAX 4001 Individual Taxation (3) Prerequisite: ACG 3101 or ACG 3102. This course focuses on the study of the Internal Revenue Code and its applications in planning and preparing tax returns for individuals.

T**AX 4001L Individual Taxation Lab.** Reviewing and completing assignments and receiving individual attention on select topics.

TAX 4101 Corporate Taxation (3) Prerequisite: TAX 4001. The course focuses on the study of the Internal Revenue Code and its applications in planning and preparing tax returns for corporations.

TAX 4101L Corporate Taxation Lab. Reviewing and completing assignments and receiving individual attention on select topics.

TRA 4722 Introduction to Supply Chain Management (3) Prerequisites: QMB 3602,MAN 4504

School of Business and Industry Graduate Programs

Mission Statement

- The mission of the School of Business and Industry (SBI) at Florida A & M University is to produce graduates capable of excelling as future leaders in global business, industry, and commerce. This is achieved by:

Providing innovative academics, professional development, and internship experiences in an enlightened, ethical, and stimulating student-centered learning environment.

- Developing, supporting, and creating opportunities for a diverse qualified faculty and staff committed to "Excellence With Caring" through high-quality teaching, relevant intellectual contributions and meaningful service.

- Creating an environment in which shared governance, collegiality, openness, respect for others, and individual and mutual responsibility and accountability flourish.

- Embracing the University's historic mission of educating African Americans while recruiting students of all races and ethnic origins with strong academic backgrounds committed to the pursuit of excellence.

- Developing new and expanding existing, creative partnerships with alumni and private and public stakeholders to maintain the relevance and currency of our academic programs.

- Promoting an environment of continuous improvement by acquiring and developing the necessary human, physical, financial, and technological resources to maintain our competitive edge.

Values Statement

We value a work and learning environment that is based on professionalism, responsibility, accountability, respect, trust, pride, ethics, integrity, caring, excellence, knowledge, research, and service.

Vision Statement

The School of Business and Industry aspires to be recognized nationally and internationally as a preeminent center of excellence in business.

Learning Goals of Master's of Business Administration Programs

The School of Business and Industry's graduate learning goals include the following:

- Critical Thinking/Analytical Reasoning Skills
- Communication Skill
- Content/Discipline Knowledge and Skills
- Ethical Understanding and Reasoning Skills
- Global Perspective and Diversity Understanding
- Leadership Skills

The Professional MBA Program

Program Objectives

The objective of the Professional MBA program is to transform students who are admitted as undergraduate freshmen into consummate professionals, capable of assuming leadership roles in global business, industry, and commerce. These professionals are highly versed in both academic and professional competencies, have extensive corporate internship experiences, and are ready to meet the demands of leadership in the dynamic global economy.

The Professional MBA Program is a "Total Development System" designed to assure well-rounded graduates capable of a high level of performance in the complex, dynamic world of business. The various programs of the school seek to accomplish these objectives through the development of both technical and non-technical competencies.

The competencies are achieved through an academic program characterized by an interdisciplinary approach that provides students with (1) liberal education which includes courses in the areas of communications, mathematics, natural sciences, humanities, and fine arts; (2) a broad business background; (3) business sophistication and personal and interpersonal skills; (4) carefully structured varied work experience to assure business sophistication and internalization of professional skills, including leadership and strong success qualities.

Policies

1. Responsible, professional conduct is required of all SBI students.

2. Students must earn a minimum grade of B in all required graduate courses.
3. SBI strictly enforces the University's attendance policy.

Faculty

SBI Administration
Dean School of Business and Industry: Friday-Stroud, Shawnta
Assistant Dean: Davis, Bobby
Department Chair, Accounting and Finance: Bates, Ira
Department Chair, Management and Marketing: Nwakanma, Hudson
Department Chair, Information Systems and Operations Management: Nkansah, Paul
Department Chair, Economics and Professional Leadership Development: Wilson, Richard

Director, Office of Student Services: Williams, Felicia

Graduate Academic and Professional Faculty

Ashley, Clyde
Bailey, Kelley
Bates, Ira
Black, Jason
Campbell, Michael
Charles, Atira
Cole, Dwayne
Collins, Jennifer
Daniels, Rudolph
Davis, Bobby
Drumming, Saundra
Etienne, Eisenhower
Farmer, Errick
Friday-Stroud, Shawnta
Hightower, Roscoe
Hill, Aretha
Holloman, Derek
Islam, Mahzar
Jackson, Annette
Johnson, Nathaniel
Murphy, Angela
Nkansah, Paul
Nwakanma, Hudson
Oguledo, Victor
Okoye, Ifeakandu
Osagie, Johnston
Ravenell, William
Ridley, A. Denis
Shabazz, Daaim
Shrestha, Nanda
Smith, Wilbur
Sutterfield, J. Scott
Swirsky, Steven
Williams, Deedgra
Wilson, Richard

Admissions Requirements

Professional MBA Program (PMBA)

Although the Professional MBA is a broad, general degree, concentration may be acquired by taking electives in an area of specialty consistent with a student's professional interests, such as accounting, finance, marketing, and supply chain management. For example, students desiring a concentration in accounting leading to eligibility to take the uniform CPA examination can do so by selecting accounting courses for their graduate business electives.

Residencies/Internships
Students are required to complete three residencies/internships. They will be provided with the sequence of their residencies during the freshman year to allow students to plan ahead for course availability and ensure that professional development courses are taken in the correct sequence. Students must complete two residencies/internships prior to being admitted into the Professional MBA program and enrolling in "5000 level" course work.

Curriculum Update Policy
The SBI administration and faculty recognize their responsibility to:

A. Upgrade the curriculum to assure that students acquire the most current and relevant education possible. The curriculum is reviewed periodically, and any changes will be communicated to the students through their academic advisors. The assurance of well-prepared graduates will always be the controlling concern.

B. Produce graduates that are academically, ethically, and professionally prepared to accept the challenges of the current and future business profession. Consequently, the School of Business and Industry reserves the right to withhold the recommendation for graduation of any student who does not conform to these expectations.

Curriculum Requirements
Freshman Year

Fall Semester	**Sem. Hrs.**
ENC 1101 Freshman Communication Skills	3
MAC 1105 College Algebra	3
MAN 2543 Introduction to Business Systems	3
GEB 1440 Fundamental Concepts	3
AMH 2091 Introduction to African-American History	3
GEB 1091 Introductory Professional Development I	1
Total	**16**

Freshman Year

Spring Semester	
ENC 1102 Freshman Communication Skills II	3
ACG 2021or 2022 Financial Accounting Principles	3
WOH 1012 or 1022 World History	3
MAD 2120 Finite Mathematics	3
Humanities Elective	3
GEB 1092 Introduction to Professional Leadership Development II	1
Total	**16**

Sophomore Year
Fall Semester

ACG 2071or 3301 Managerial Accounting Principles	3
ECO 2013 Principles of Economics I	3
Natural Science Elective	4
MAC 2233 Calculus for Business	3
GEB 2081 Intermediate Professional Leadership Development I	1
Total	**14**

Sophomore Year
Spring Semester

ECO 2023 Principles of Economics II	3
Natural Science Elective	4
MAN 3701 Business Ethics	3
ACG 3101 or 3102/ACG 3361 Intermediate	
GEB 2082 Intermediate Professional Leadership Development II	1
Accounting I (or Cost Accounting)	3
Total	**14**

Sophomore Year
Summer Semester

MAN 4941 Management Internship I	1

Junior Year
Fall Semester

QMB 2100 Quantitative Methods & Business Decisions I	3
FIN 3403 Corporation Finance	3
MAN 3025 Principles of Management	3
MAR 3023 Principles of Marketing	3
GEB 3213 Professional Business Communication & Report Writing	3
Total	**15**

Junior Year
Spring Semester

QMB 3602 Quantitative Methods & Business Decisions II	3
MAN 4653 Global Business	3
Undergraduate Business Elective	3
ISM 3201 Data File & Database Management	3
GEB 3083 Advanced Professional Leadership Development II	1
Total	**13**

Junior Year
Summer Semester

MAN 4942 Management Internship II	1

Senior Year
Fall Semester

BUL 4130 Legal Environment of Business	3
FIN 4414 Financial Management	3
MAN 4532 Engineering and Production Management	3
ACG 5377 or 5175 Accounting for Business and Competitive Analysis	3
GEB 4931 Senior Seminar Leadership	1
Total	**13**

Senior Year
Spring Semester

Graduate Business Electives	6
TRA 5722 Supply Chain Management I	3
QMB 5555 Managerial Research Methods	3
MAN 5204 Organizational Theory & Analysis	3
GEB 5931 Graduate Seminar in Leadership	1
Total	**16**

Senior Year
Summer

MAN 5940 MBA Internship	1

Graduate Year
Fall Semester

Graduate Business Electives	6
FIN 5246 Financial Institutions & Markets	3
	Sem. Hrs.
MAN 5606 or MAN 5615 World Cultures for Business or World Resources	3
MAR 5818 Advanced Marketing Management	3
GEB 5932 Graduate Seminar in Leadership	1
Total	**16**

Graduate Year
Spring Semester

MAN 5548 Systems Theory & Design	3
Graduate Business Electives	6
MAN 5721 Business Policy & Strategic Management	3
GEB 5933 Graduate Seminar in Leadership	2
Total	**14**
Total Credits	**150**

All undergraduate classes (1000-4000 level) applied toward graduation must be passed with a grade of "C" or better. All graduate classes (5000 level) applied toward graduation must be passed with a grade of "B" or better with the exception of one graduate level business elective. See your advisor for approved course sequences and grading requirements.

One Year Master of Business (MBA) Program

The School of Business and Industry (SBI) offers a One-Year (three-semester) Master of Business Administration (MBA) degree. The MBA program provides graduate education for individuals who want to pursue management careers in business and industry. The concentration allows students enrolled in this program to customize their education to fit their career goals. The One-Year MBA program accepts students who hold an undergraduate degree in business or non-business disciplines and equips them with managerial and behavioral skills for leadership positions in global business, industry and commerce. The program is broad in approach; it integrates the functional areas of business with carefully tailored behavioral skills enhancement programs to develop holistically competent managers. Through the use of elective courses, students can develop depth in one or more areas, e.g., accounting, finance, marketing, supply chain management or information systems.

The School of Business and Industry admits students into the One-Year MBA program under the following criteria:

School of Business and Industry (SBI) preferred criteria:

- Baccalaureate degree from an accredited college or university
- 1100 point requirement: last 60 hours of B.S. degree GPA x 200 + GMAT score
- Minimum upper division GPA of 3.00
- Evidence of maturity and leadership

or

School of Graduate Studies and Research (SGSR) criteria:

- Baccalaureate degree from an accredited college or university
- Demonstrated potential for successful graduate study
- Earned GPA of 3.0 or higher for the last 60 semester hours (or equivalent) of undergraduate work attempted and acceptable score on the GMAT, or
- A score of 600 on the Graduate Management Admission Test (GMAT)
- International applicants whose first language is not English may be required to present a passing score on the TOEFL (500 paper-based, 213 computer-based, and 80 internet-based).

To apply for the One-Year MBA Program, a prospective student should take the following steps:

- Apply to take the GMAT and request the results be sent to the School of Business and Industry at Florida A&M University as well as three letters of recommendation
- Submit completed application with fee to: The School of Graduate Studies and Research, Florida A&M University, Tallahassee, FL 32307-5200

Prerequisites: Non-Business Undergraduate Majors

A prospective MBA student whose Baccalaureate degree is not in business must complete the following foundation courses prior to enrolling in graduate course:

Core Business Pre-Requisites for the One-Year (Three Semesters) MBA Program
ACG 2021 Financial Accounting Principles
ACG 2071 Managerial Accounting Principles
MAR 3023 Principles of Marketing
MAN 3025 Principles of Management
MAN 3600/4653 International (Global) Business
FIN 3403 Corporation Finance
ECO 2013 Principles of Economics I
ECO 2023 Principles of Economics II
MAN 2543 Management Information Systems
STA 2023 Introduction to Probability and Statistics or QMB 2100 Quantitative Methods I
QMB 3602 Introduction to Quantitative Methods
MAN 4503 Production Management (waived for students with a bachelor degree in Engineering)

Or

A prospective MBA student whose Baccalaureate degree is not in business may choose to complete the prerequisites via Peregrine Academic Testing Services. Please contact the Coordinator of Admissions in SBI for complete details on this option.

Requirements: One-Year (Three Semesters) MBA Program
Forty-four graduate credits are required for completion of the One-Year (Three Semesters) MBA program. In addition, business core prerequisites are required for candidates with non-business undergraduate degrees. All prerequisites must be satisfied prior to enrolling in graduate coursework. Students will meet with their assigned advisors to select the appropriate coursework consistent with their professional interests. Presented below is a partial list of graduate courses frequently selected in fulfilling the One-Year (Three Semesters) MBA program. Additional graduate courses are presented in the SBI course descriptions section of the catalog.

Curriculum Requirements
One-Year (Three Semesters) MBA Program

Semester 1	**Sem. Hrs.**
GEB 5933 Graduate Seminar Leadership I	2
MAN 5204 Organization Theory & Behavior	3
MAN 5548 Systems Theory & Design	3
MAR 5805 Marketing Management Strategy	3
ACG 5175 Financial Statement Analysis	3
Total	**14**
Semester II	
FIN 5515 Investment Analysis & Portfolio Management	3
BUL 5323 Legal Issues and Environment	3
TRA 5722 Supply Chain Management I	3
QMB 5555 Managerial Research Methods	3
Graduate Elective	3
Total	**15**
Semester III	
Graduate Elective	3
Graduate Elective	3
Graduate Elective	3
Graduate Elective	3
MAN 5721 Business Policy & Strategic Management	3
Total	**15**
Total Hours	**44**

1. Each course will have relevant international and ethics components as they relate to the discipline.

2. The Business Policy - Strategic Management course will be taken the semester the student is graduating.

3. Students are encouraged to take advantage of SBI's internship opportunities.

Online MBA Requirements

The curriculum for the Online Track of the One-Year MBA is the same as the traditional One-Year MBA with one exception. The coursework is cohort-based and taken over five (5) semesters. The FAMU Online MBA program gives online students access to a broad array of innovative opportunities with special emphasis on team collaboration, including work abroad and graduate case competitions. Our extensive network of corporate employers also helps to further our students' exposure to areas ranging from accounting to supply chain management.

Candidates are encouraged to apply a semester in advance of starting the program. Interested candidates should meet the following requirements:

- hold a Bachelor's degree earned from an accredited college or university. '
- completed a minimum of five years of post-baccalaureate work experience with at least two years at the managerial level preferred.
- demonstrate academic potential: (a) cumulative GPA of 3.0 or higher in upper-division coursework completed for the baccalaureate degree (and submit a GRE or GMAT score) or (b) a score of at least 300 on the GRE or (c) a score of at least 600 on the GMAT.

Beyond satisfying these requirements, international applicants whose first language is not English may be required to present a passing score on the TOEFL (500 paper-based, 213 computer-based, and 80 internet-based).

Prior to starting coursework, students will be required to achieve passing scores on SBI's adaptive assessments in spreadsheets, accounting, finance, and statistics. SBI's adaptive assessments (with embedded tutorials) ensure that students have the prerequisite skills needed to succeed in the MBA curriculum.

Professional MBA and One-Year MBA Program Courses

ACG 5175 Financial Statement Analysis (3) Prerequisite(s): ACG 3101 or ACG 3102 and Graduate Standing. Designed to develop a student's ability to read, interpret, and evaluate external financial accounting reports of business entities.
ACG 5255 Global Accounting (3) Prerequisite(s): ACG 3111 or ACG 3112 and graduate standing. This course focuses on the study of international accounting principles and practices.
ACG 5308 Accounting Planning and Control (3) Prerequisite(s): ACG 2071 or ACG 3301 and graduate standing. Study of advanced concepts and methods of cost management that firms use to measure and control operating costs and improve competitive positions.
ACG 5377 Accounting for Business and Competitive Analysis (3) Prerequisite(s): ACG 2021 or 2022, ACG 2071 or 3301. This course consists of two modules. The first module introduces students to the concepts and techniques for using financial statement information to perform business analysis and evaluation and techniques for using financial statement information to perform business analysis and evaluation and to perform strategic competitive analysis. The second module introduces students to the concepts and methods of cost management used by firms to measure and control product and process costs, to evaluate business models, to attain high performance, and to improve competitive positions.
ACG 5405 Accounting Information Systems (3) Prerequisite: 4401 and graduate standing. This course focuses on the study of current advanced topics in information systems.
ACG 5655 Seminar in Advanced Auditing (3) Prerequisite(s) ACG 4642 and graduate standing. This course focuses on the study of current advanced topics in auditing.
ACG 5875 Development of Accounting Thought (3) Prerequisite(s): ACG 3111 or ACG 3112 and graduate standing. This course focuses on the study of conceptual accounting topics and current topics.
ACG 5935 Special Topics in Accounting (3) Prerequisite(s): Permission of area coordinator, supervising professor and Graduate standing. Study in accounting with appropriate supervision.
BUL 5323 Legal Issues & Environments (3) Prerequisite(s): Graduate Standing. Fundamental concepts of business law as they apply to varied and changing global business environments.
BUL 5905 Graduate Directed Independent Study in Legal (Varies 1 to 6) Prerequisite(s): Permission of area coordinator, supervising professor and graduate standing. Independent study in business law with appropriate supervision.
FIN 5246 Financial Institutions and Markets (3) Prerequisite(s): FIN 4414 Graduate Standing. This course examines various types of financial institutions. Topics include structure, performance, asset/liability management, regulation and current issues that impact operational structures of financial institutions.
FIN 5326 Commercial Banking Administration (3) Prerequisite(s): FIN 3403 or FIN 4424 Graduate Standing. Examines the management of commercial banks and similar institutions. Topics include funds and capital management, liquidity and credit standards, and lending and trust operations.
FIN 5405 Corporation Finance (3) Prerequisite(s): FIN 4414 FIN 3403 or FIN 4424 Graduate Standing. Introductory study of corporate financial management, in particular how the financial manager's choices add value to shareholder wealth through investment financing and operating decisions.
FIN 5406 Theory in Finance (3) Prerequisite(s): FIN 3403 FIN 3403 or FIN 4424 Graduate Standing. This course addresses both the theoretical and applied aspects of a firm's financing decisions. Topics include capital structure and cost of capital theories, mergers, acquisitions and leveraged buyouts; options, warrants, and convertibles; venture capital and initial public offerings and pensions.
FIN 5425 Cases in Corporate Finance (3) Prerequisite(s): FIN 3403 FIN 3403 or FIN 4424 Graduate Standing. Course focuses on financial management cases and provides students with an active learning experience. Case work is based on concepts learned in introductory corporate finance. Topics discussed include measuring and interpreting cash flow performance, financial forecasting and turnaround management; capital investment and cost of capital;

capital structure, dividend policy and firm valuation.

FIN 5515 Investment Analysis and Portfolio Management (3) Prerequisite(s): FIN 3403 FIN 3403 or FIN 4424 Graduate Standing. Current theories of portfolio management are covered in considerable detail to provide a conceptual framework for the evaluation of investment strategies. Applications and implementations are covered in depth, including performance evaluation and international diversification.

FIN 5537 Global Asset Valuation (3) Prerequisite(s): FIN 3403 FIN 3403 or FIN 4424 Graduate Standing. This course analyzes the financial problems corporations face in valuing assets as a result of operating in an international environment.

FIN 5605 Global Financial Management (3) (Multinational Financial Management)Prerequisite(s): FIN 3403 Graduate Standing. This course examines the international monetary environment and its impact on financial planning for the firm. Topics include exchange rates, currency restrictions, tax regulations, direct investment theory, capital budgeting, financing, risk management, and working management.

FIN 5905 Graduate Directed Individual Study (Varies)Prerequisite(s): Permission of the director of academic programs and the supervising professor. Independent study in finance with appropriate supervision.

FIN 5936 Special Topics in Finance (3)Prerequisite(s): Permission of area coordinator, supervising professor and graduate standing. Study in finance with appropriate supervision.

GEB 5931, 5932 Graduate Seminar in Leadership (1,1) Prerequisite: GEB 3084 Graduate Standing, SBI majors only. Continued leadership skills development and applications in simulated business environments

GEB 5933, 5934 Graduate Seminar Leadership (2, 2) Prerequisite(s). GEB 3084 Graduate Standing, SBI major only. Senior level experiential leadership skill development and application in a simulated business environment. Structured leadership roles, team activities, laboratories, and workshops designed to develop personal qualities and skills as well as supervisory and management skills. These activities and workshops also develop leadership qualities and skills. Students are evaluated on the basis of their managerial performance and the positive leadership they exhibit.

ISM 5304 Information Systems in Management (3) This course examines a range of topics that present managerial challenges unique to technology-oriented environments. Topics include new technology convergence, the management of technology that disrupts existing industries, measuring new technology impacts, and business continuity planning, among others.

ISM 5405 Decision Support Systems (3) Prerequisite(s): MAN 2543. Overview of knowledge management concepts and use of technology to provide business intelligence necessary for organizations to function effectively in dynamic business environments.

ISM 5506 Electronic Commerce in a Global Environment (3) This course examines e-business models. Topics include the application of business strategy, consumer behavior, and customer relationship theories in e-business environments. Business-to-business and business-to-consumer arrangements are considered. Supply chain and other e-business infrastructure issues are covered.

ISM 5515 Database Management Systems in a Global Environment (3) Designing and developing databases. Understanding the role of databases in meeting business information needs in the global economy.

MAN 5000 World Cultures for Business (3) Prerequisite(s): MAN 4653. Cross-cultural understanding is critical for international business success. Emphasis is on cross-cultural understanding of different geographical regions and countries from an international business perspective, including cultural differences and similarities, cultural perception, communication and relationships in the context of global business. Also covered are cultural values and norms; cultural diffusion, change and continuity; cultural patterns, processes and perspectives; and cultural convergence and conflicts in the global economy.

MAN 5126 Business Behaviors and Relationships (3) Prerequisite(s): Graduate Status and MAN 5204. Selected topics pertaining to leadership, organizational change, and individual processes are surveyed through selected readings, cases, class discussions, and a guided research project. Students' ability to conceptualize, integrate, and apply diverse approaches to leadership and change in organizations is emphasized. Students will develop and improve skills important for effective personal leadership, organizational leadership and strategic career management.

MAN 5156 Human Resources Management Research (3): Graduate Status, BUL 5321 or BUL 4130. This course uses an experiential approach to learning the major concepts and theories of human resource management (HRM) that organizations use to implement human resource policies and procedures in the areas of recruitment, selection, job analysis, training, career development, employee relations, compensation and benefits, and global HRM.

MAN 5204 Organizational Theory and Analysis (3) Prerequisite(s): Graduate Status and MAN 3025. To understand why people behave as they do in organizations (OB). To have workable knowledge of theories, concepts, and practices used to analyze and design the structure and process of today's global and complex organizations (OT). This knowledge and understanding will help explain the effects of diversity, globalization, ethical decision-making, environment, management, employees, and other issues on organizations.

MAN 5406 Successful Business Negotiations (3) Prerequisite(s): Graduate Status and MAN 5204. This encompasses goal setting and strategy in distributive and integrative bargaining situations. The course includes experimental exercises, readings and discussions to demonstrate various strategies for a broad range of negotiating scenarios, e.g., buyer vs. seller, management and labor conflict resolution, single and multi-strategy agency, and game theory.

MAN 5511 Production and Operations Management (3) Prerequisite(s): QMB 3602; MAN 3533. Examination and application of analytical models in the design and analysis of production and operations systems.

MAN 5525 Total Quality Management (3) Prerequisite(s): QMB 3602; MAN 4504 or MAN 4532. Introduction of the tools and techniques used in designing, analyzing and implementing quality management systems in a modern enterprise to create competitive advantage and execute strategy.

MAN 5615 World Resources (3) Prerequisite(s) MAN 4653. Resources are central to all aspects of business. The focus of this course is on the geography of resources from a multidisciplinary perspective and in the context of global business. Some of the issues to be explored in the class include: types of resources; resource dynamics; geographical distribution, production and consumption of resources (demand-supply disparity) in the global economy; global transportation of resources; geopolitics behind

resource access and control; resources, technology, and global industrial relocation (including global outsourcing); resource life cycle and interlinkages among natural resources, social responsibility, environmental sustainability, and business.

MAN 5715 Business Environment & Public Policy (3) Prerequisite(s): Graduate Status and MAN 5204. This course enables students to understand and assess the intersection between businesses, their external environment, and public policy and how it impacts individuals' ethical decision-making. In additional to including ethics, this course also includes topics such as corporate social responsibility, stakeholder analysis, and the following ten external factors: cultural, social, demographic, economic, governmental, political, legal, competitive, environmental, and technological.

MAN 5721 Business Policy and Strategic Management (3) Prerequisite(s) MAN 5204, BUL 5321, ACG 3112, FIN 5406, and a Graduate Level Marketing course. This capstone requires students to apply knowledge acquired from the different functional areas to make managerial decisions and actions that synthesize strategic formulation, implementation, and evaluation processes that can lead to effective long run performance within organizations.

MAN 5785 E-Business For Global Markets (3) Prerequisite(s) Graduate Status. This course enables students to examine the origins of network technology and typology, Internet protocols, and Internet law and understand how such technologies impact the exchange of goods and services in a global marketplace.

MAN 5838 Systems Theory and Design (3) Prerequisite(s): MAN 2543. In- depth study of the processes associated with the systems development cycle, including engineering tools methodologies. Application of business skills through project engineering. MAN 5896

Advanced Topics in Business Information Systems (3) Prerequisite(s): MAN 2543

MAN 5905 Directed Independent Study (variable) Prerequisite(s): Permission of the department chair and the supervising professor. Graduate independent study in management with the appropriate supervision available when deemed appropriate by management department.

MAN 5910 Graduate Research (variable) Prerequisite(s): Permission of the department chair and the supervising professor. Graduate independent research project on management-related topic with the appropriate supervision available when deemed appropriate by management department.

MAN 5940 MBA Residency (variable) Prerequisite(s): Level 3 residency and permission of the director of professional programs and certification by the residency/internship office. Full-time affiliation as an intern with a School of Business and Industry approved organization or institution. Residency assignments can either be in accounting, finance, management, or marketing.

MAR 5151 Global Economic Marketing Applications (3)

MAR 5158 International Marketing Management (3) Prerequisite(s): Graduate standing. This course examines the strategic role of marketing in the context of international environment in which firms operate. Recent developments in international marketing activities and a framework for better understanding of the basic forces driving international marketing operations will be discussed. Development of market entry strategies and global marketing mix policies, as well as export operations. Organizational issues related to the globalization of the firm.

MAR 5336 Promotional Strategy (3) Prerequisite(s): Graduate standing and MAR 4803. This course examines the field of marketing communications. It covers a number of topics and areas essential for understanding how to design and evaluate communication strategies necessary for the successful marketing of products and services. An integrated marketing communications (IMC) perspective is utilized in covering material that focuses on various elements of an IMC strategy, including advertising, promotions, sales promotions, point-of-purchase communications, direct marketing techniques, and other topics.

MAR 5465 Strategic Purchasing and Supply Management (3) Prerequisite: TRA 5722. This course will examine the strategic role of Purchasing and Supply Management. It will identify the key drivers of an effective Purchasing and Supply Management system and provide students with a solid understanding of the analytical tools and techniques used in Purchasing and Supply Management.

MAR 5616 Marketing Research Methods (3) Prerequisite(s): Graduate standing and 6 hours in marketing. This course prepares students to apply analytical market research techniques and report the results to management to meet the informational needs of organizations in a rapidly changing environment.

MAR 5805 Marketing Management Strategy (3) Prerequisite: Graduate standing and 6 hours in marketing. An analysis of the competitive environment and the sources of differential advantage with an emphasis on marketing mix decisions, the implementation of marketing strategy, and the organization and control of marketing activities.

MAR 5838 Strategic Brand Management (3) Prerequisite: Graduate standing and 6 hours in marketing.. This course will introduce students to the concepts, skills and some of the tools used in effective strategic brand management. Students will be expected to apply brand theory to real-world situations.

MAR 5905 Graduate Directed Independent Study in Marketing (variable) Prerequisite(s) Permission of the department chair and the supervising professor. Graduate independent study in marketing with the appropriate supervision available when deemed appropriate by marketing department.

QMB 5555 Managerial Research Methods (3)Prerequisite(s): QMB 3602. Collection of primary data; analysis of data using such statistical tools as ANOVA, MANOVA, Regression and Conjoint analysis; fundamentals of data mining; presentation and writing of research reports.

QMB 5755 Operations Research (3) Prerequisites: QMB 4701, QMB 4820

QMB 5905 Directed Individual Study (3) Prerequisite(s): Permission of the department chair and the supervising professor. Independent study in quantitative analysis with the appropriate supervision available when deemed appropriate by management department.

TAX 5105 Corporate Tax Seminar (3) Prerequisite(s): TAX 4101 and graduate standing. Study of corporate tax issues via research case analysis.

TAX 5405 Estate and Gift Tax (3) Prerequisite(s): TAX 4101 and graduate standing. The study of estate and gift tax issues via research case analysis.

TAX 5505 International Tax (3) Prerequisite(s): TAX 4101 and graduate standing. Study of international tax issues via research case analysis.

TRA 5722 Supply Chain I (3) Prerequisite(s): MAN 4533, QMB 3602, FIN 3403, and ACG 2071 or 3301. This course introduces

the tools and techniques of modern business logistics management focusing on their integration to enhance international competitiveness. The framework of the product delivery system will be used to explore the relationship of product and process design, operations, and distribution to the logistics system.

TRA 5723 Supply Chain Logistics II (3) Prerequisite(s): TRA 5722. Examination and application of advanced tools and techniques of modern business logistics management in enhancing international competitiveness. The framework of the product-delivery system will be used to explore the relationship of supplier relations, E-Commerce, operations, and distribution to the logistics system.

School of the Environment

Background & Organization
The School of the Environment, developed from the Environmental Sciences Institute, was founded on July 1, 2011. The Environmental Sciences Institute (ESI) was established in 1995, and was given degree granting status by the Florida Board of Regents in February of 1996. The Institute's alignment within the Division of Academic Affairs as an autonomous unit allowed the Institute to facilitate environmental science related instruction and collaborative research with faculty from the University's other schools, colleges, and institutes. This organizational structure also enabled the Institute to be the focal point for external organizations seeking assistance and advice on environmental science issues as well as those with intentions to support environmental science related teaching and research. The objectives of the School of the Environment are to provide instruction, conduct research, perform public service, and initiate technology transfer which will result in the development of remedies for existing environmental problems; enlighten communities on environmental science issues; and the production of students who are uniquely prepared to address present and future environmental science concerns.

The School of the Environment is an instructional and research unit within the Division of Academic Affairs. The School of the Environment functions under a dean who coordinates and manages the activities of faculty and staff who are engaged in instruction, research, outreach, and environmental technology transfer. The School of the Environment houses the Florida A&M University Center for Technology Transfer, the National Oceanic and Atmospheric Administration's Environmental Cooperative Science Center and the Florida A&M University Center for Environmental Equity and Justice.

In 1998, the Legislature provided funding for the establishment of the Center for Environmental Equity and Justice (CEEJ) within the Environmental Sciences Institute. The purpose of the Center is to conduct and facilitate research, develop policies, engage in education, training, and community outreach activities with respect to environmental equity and justice issues.

The Florida A&M University Environmental Cooperative Science Center (ECSC) was established in 2001 by the National Oceanic and Atmospheric Administration's Educational Partnership Program (EPP). ECSC is led by FAMU and is a collaboration between Creighton University, Delaware State University, Jackson State University, Texas A&M University Corpus Christi, and the University of Texas-Brownsville. ECSC research seeks to enhance the scientific understanding of human interactions with the coastal environment through integrated assessment in support of environmental decision making; integrated social sciences; ecological processes and ecosystem health; and geospatial analysis.

Opportunities

External grants and contractual activities enable the School of the Environment to offer competitive scholarships and fellowships that recognize and reward academic achievement, and meritorious performance. Students of the School of the Environment are exposed to an array of research, internships and other professional development experiences.

Programs and Degrees
Environmental Science: The School of the Environment offers programs in environmental science at the bachelor's, the master's and the doctoral degree levels. The B.S. degree program is a 120 credit hour program, the Master's program is a 36 credit-hour program including 6 thesis hours; and the Ph.D. degree program is an 80 credit-hour program including 24 dissertation hours.

Environmental Studies: The School of the Environment also offers the BS/BA Degree in Environmental Studies. The BS/BA degree program is a 120 credit hour program. Environmental Studies is interdisciplinary and is aimed at students with Environmental interests who wish to pursue careers in a variety of disciplines for which the environment is a critical component. The BA in Environmental Studies Degree Program is intended for those students who plan to graduate in the area of environmental policy or in a non-scientific field or wish to pursue careers in other professional studies such as Environmental Law and Environmental Journalism.

Minors. The 20 credit hour minor in environmental science or the 19 credit hour minor in environmental studies prepares students from diverse study areas to complement their disciplinary strength with the knowledge and skills necessary to meet present and future environmental science, policy, educational and management needs.

Facilities
The School of the Environment occupies approximately 7,000 sq ft. of space in the Frederick S. Humphries Science and Research Center. Located in the laboratory wing is a core lab that is created to enhance collaborative research and increased access to major instrumentation to students and faculty. Instruments available to both faculty and students in this facility include GC/MS, HPLC, AA, a graphite furnace emission spectrometer, UV-Visible Spectrophotometer, Advanced Imaging System, a Solar Simulator, Capillary Electrophoresis, Total Organic Carbon Analyzer, Flow Cytometer, a Beckman 6500 Scintillation counter, a High-resolution Gamma-ray Spectrometer, MicSequencer, and an Inductively Coupled Plasma The School of the Environment also owns a four-wheel drive vehicle and a boat to aid in field studies. In addition, the School of the Environment houses a Student Resource Room, which includes computers with internet access. Access to the internet from individual offices and laboratories is also possible through high-speed fiber optic connections.

Foreign Language Requirements: Student who have not completed two years of the same foreign language or American Sign Language in high school must complete eight semester hours in the same foreign language prior to graduation.

CLAST Requirement: Effective July 1, 2011, students do not need CLAST scores or CLAST alternatives to graduate.

Faculty
Professors: Abazinge, Michael; Ibeanusi, Victor; Robinson, Larry; Williams, Henry N.
Associate Professors: Chauhan, Ashvini; Cherrier, Jennifer; Essien, Frederic; Gragg, III, Richard D.; Johnson, Elijah; Owens, Marcia
Distinguished Scientist: Jagoe, Charles
Adjunct Professors: Thomas, Michael

Bachelor of Science in Environmental Science

The Bachelor of Science degree program in Environmental Science emphasizes rigorous academic course work, student involvement in faculty research and collaborative efforts with other universities, community/junior colleges, national laboratories, regulatory agencies, corporate environmental contractors, utilities, and municipalities. This program offers students the opportunity for a general degree in environmental science with options for specialized concentration accomplished through electives in environmental restoration and waste management, environmental monitoring and instrumentation, environmental toxicology/risk assessment, and environmental policy. Other undergraduate students with strong mathematics, chemistry, biology, physics and computer science backgrounds may obtain a minor by taking selected environmental sciences core courses with the consent of their advisor.

Minor Core Course Requirements	**Sem. Hrs.**
*EVR 2920 Environmental Science Forum & Colloquium#	2
EVR 3033 Environmental Regulations	2
EVR 3867 Environmental Risk Analysis I	3
EVR 4032 Environmental Ethics	3
EVR 4140 Environmental Chemistry w/Lab	4
EVR 4643 Environmental Policy & Risk Management	3
Total	**20**

*This is a state common prerequisite. Substitutes identified in the state Common Prerequisites Manual at www.facts. org will be accepted.

#One hour course offered in the fall and spring.

Undergraduate Curriculum

FRESHMAN YEAR

Fall Semester	**Sem. Hrs.**
AMH 2091Introduction to African American History	3
*BSC 1010 General Biology I w/Lab	4
ENC 1101 Communication Skills	1
or	
ENC 1121, Honors English I	3
*EVR 2920 Environmental Science Forum & Colloquium	1
*MAC 2311 Calculus I##	4
Total	**15**

Spring Semester	**Sem. Hrs.**
*BSC 1011C General Biology II w/Lab	4
ENC 1102 Communicative Skills II or	3
ENC 1122 Honors English II	3
*EVR 2920 Environmental Sciences Forum & Colloquium	1
*MAC 2312 Calculus II	4
HUMANITIES ELECTIVE###	3
Total	**15**

##Some students may need to take College Algebra (MAC 1105) and Algebraic and Trigonometric Functions (MAC 1114) as prerequisites to Calculus I and II.
###The Humanities and Social Science electives should be taken from the General Education approved course list.

SOPHOMORE YEAR

Fall Semester	**Sem. Hrs.**
*CHM 1045 General Chemistry I w/Lab	4
*EVS 4007 Introduction to Environmental Sciences	3
*PHY 2048 General Physics 1 w/Lab	5
*PHY 2048A General Physics I Recitation	(0)
SOCIAL SCIENCES ELECTIVE#### (Non-History)	3
Total	**15**

Spring Semester	**Sem. Hrs.**
*CHM 1046 General Chemistry II w/Lab	4
ENC 3243 Technical Report Writing	3
*PHY 2049 General Physics II w/Lab	5
*PHY 2049A General Physics II Recitation	(0)
HUMANITIES ELECTIVE####	3
Total	**15**

Summer Semester	**Sem. Hrs.**
EVR 3940 Internship	1-3

JUNIOR YEAR

Fall Semester	**Sem. Hrs.**
CHM 2210 Organic Chemistry I W/Lab	4
EVR 3023 Introduction to Marine Environment	3
EVR 3033 Environmental Regulations	2
EVR 3867 Environmental Risk Analysis I	3
MCB 3010C Microbiology	4
Total	**16**

Spring Semester	**Sem. Hrs.**
CHM 2211 Organic Chemistry II W/Lab	4
EVR 3028 Environmental Modeling Principles	3
EVR 3327 Environmental Resources Economics	3
STA 2023 Introduction to Probability & Statistics I	3
Total	**13**

SENIOR YEAR

Fall Semester	**Sem. Hrs.**
EVR 3235 Atmospheric Processes	3
EVR 4804 Environmental Toxicology & Human Health	3
EVS 3395 Contaminant Hydrogeology	3
PCB 3033 Introduction to Ecology	3
CONCENTRATION AREA ELECTIVE	3
Total	**15**

Spring Semester	**Sem. Hrs.**
EVR 4032 Environmental Ethics	3
EVR 4140 Environmental Chemistry W/Lab	4
EVR 4643 Environmental Policy & Risk Mgmt	3
EVR 4910 Senior Thesis###	3
CONCENTRATION AREA ELECTIVE	3
Total	**16**

###Students will begin thesis in the fall semester of senior year, but registration will not be required until spring semester.

Concentration Electives

Must Take a Minimum of two (2) courses (6 credit hours) from your area of concentration:

Bachelor of Science in Environmental Sciences with a Concentration in Toxicology/Risk Assessment

EVR 4143 Environmental Radiochemistry	3
EVS 4810 Environmental Toxicology & Human Health II	3
EVR 4869 Environmental Risk Analysis II	3
EVS 3662 Principles of Contaminant Assessment	3
EVS 4636 Risk Communication	3

Bachelor of Science in Environmental Sciences with a Concentration in Environmental Monitoring and Instrumentation

EVR 4024C Marine Microbial Ecology W/Lab	4
EVR 4027C Wetlands Preservation & Restoration W/Lab	4
EVR 4193C Environmental Monitoring W/Lab	4

EVR 4215 Marine Pollution	3
EVS 3024C Environmental Instrumentation & Analytical Techniques	4
EVS 4025C Applied Microbial Processes W/Lab	4

Bachelor of Science in Environmental Sciences with a Concentration in Environmental Restoration/Waste Management

EVR 3823 Environmental Impacts	3
EVR 4024C Marine Microbial Ecology W/Lab	4
EVR 4027C Wetlands Preservation & Restoration w/Lab	4
EVR 4143 Environmental Radiochemistry	3
EVR 4215 Marine Pollution	3
EVS 3024C Environmental Instrumentation & Analytical Techniques	4
EVS 3654 Hazardous Waste Management	3
EVS 3662 Principles of Contaminant Assessment	3
EVS 3672 Fundamentals of Bioremediation	3
EVS 4025C Applied Microbial Processes W/Lab	4

Bachelor of Science in Environmental Sciences with a Concentration in Environmental Policy

EVR 4036 Environmental Equity & Justice	3
EVS 4636 Risk Communication	3
POS 4697 Environmental Law	3

Major in Environmental Studies

Bachelor of Science in Environmental Studies

The Bachelor's degree program in Environmental Studies is interdisciplinary and is aimed at students with Environmental interests who wish to pursue careers in a variety of disciplines for which the environment is a critical component. Human dimensions of the environment include majors in social science, journalism, business and the humanities. Environmental Studies addresses environmental problems mainly from the perspective of their social causes, effects, and solutions in the realms of government, law, economics, business, education, design, environmental organizations, media, ethics, religion, literature and the arts, and individual citizens.

Minor/Core Course Requirement	**Sem. Hrs.**
EVR 2920 Environmental Forum & Colloquium**	2
EVR 3033 Environmental Regulations	2
EVR 4036 Environmental Equity & Justice	3
EVR 4032 Environmental Ethics	3
EVR 4643 Environmental Policy & Risk Mgmt.	3
EVS 4007 Introduction to Environmental Science*	3
EVS 4636 Risk Communication	3
Total	**19**

Freshman Year
Fall Semester

AMH 2091 Introduction to African American History	3
BSC 1005C/BSC1005L Biological Science w/Lab	4
ENC 1101 Communication Skills I	3
EVR 2920 Environmental Forum & Colloquium	1
MAC 1105 College Algebra	3
Total	**14**

Spring Semester

EVR 2920 Environmental Forum & Colloquium*	1
ENC 1102 Communication Skills II	3
STA 2023 Introduction to Probability and Statistics	3
Environmental Science Elective (Department Advisement)	3
General Education Elective (Humanities List)	3
General Elective (Department Advisement)	3
Total	**16**

* This is a state common prerequisite. Substitutes identified in the state Common Prerequisites Manual at www.facts.org will be accepted.
**One hour course offered in the fall and spring

Sophomore Year
Fall Semester

CHM 1030/1030L Intro. Chem. for Non-Science Major w/Lab	4
EVS 4007 Introduction to Environmental Science **	3
Minor Elective	3
Science Elective (Department Advisement)	3
General Education Elective (Social Science List)	3
Total	**16**

Spring Semester

Environmental Science Elective (Department Advisement)	3
General Elective (Department Advisement)	3
General Education Elective (Humanities List)	3
Minor Elective	3
Minor Elective	3
Total	**15**

Junior Year
Fall Semester

EVR 302 Introduction to Marine Environment	3
EVR 3033 Environmental Regulations	2
EVR 4036 Environmental Equity & Justice	3
Environmental Science Elective (Department Advisement)	3
Minor Elective	3
Total	**14**

Spring Semester

EVR 4643 Environ. Policy & Risk Management	3
Environmental Science Elective (Department Advisement)	3
Minor Elective	3
Minor Elective	3
General Elective (Department Advisement)	3
Total	**15**

Senior Year
Fall Semester

EVS 4636 Risk Communication	3
EVR 4804 Enviro. Tox. & Human Hlth.	3
Environmental Science Elective (Department Advisement)	3
Environmental Science Elective (Department Advisement)	3
General Elective (Department Advisement)	3
Total	**15**

Spring Semester

EVR 4032 Environmental Ethics	3
Environmental Science Elective (Department Advisement)	3
Environmental Science Elective (Department Advisement)	3
General Elective (Department Advisement)	3
General Elective (Department Advisement)	3
Total	**15**

Bachelor of Arts Degree in Environmental Studies

The BA in Environmental Studies Degree Program is intended for those students who plan to graduate in the area of environmental policy or in a non-scientific field or wish to pursue careers in other professional studies such as Environmental Law and Environmen-

tal Journalism.

Minor Core Course Requirements	Sem. Hrs.
EVR 2920 Environmental Forum & Colloquium**	2
EVR 3033 Environmental Regulations	2
EVR 4036 Environmental Equity & Justice	3
EVR 4032 Environmental Ethics	3
EVR 4643 Environmental Policy & Risk Mgmt.	3
EVS 4007 Introduction to Environmental Science*	3
EVS 4636 Risk Communication	3
Total	**19**

* This is a state common prerequisite. Substitutes identified in the state Common Prerequisites
Manual at www.facts.org will be accepted.
**One hour course offered in the fall and spring

Freshman Year
Fall Semester

AMH 2091 Introduction to African American History	3
BSC 1005C Biological Science	4
ENC 1101 Communication Skills I	3
EVR 2920 Environmental Forum & Colloquium **	1
MAC 1105 College Algebra	3
Total	**14**

Spring Semester

CHM 1030/CHM 1030L Intro. Chemistry for Non-Science Majors and Laboratory	4
ENC 1102 Communication Skills ll	3
EVR 2920 Environmental Forum & Colloquium **	1
General Education Elective (Humanities List)	3
Mathematics Elective (Department Advisement)	3
Total	**14**

Sophomore Year
Fall Semester

EVS 4007 Introduction to Environmental Science	3
Foreign Language Elective	3
Minor Elective	3
Science Elective (Department Advisement)	3
General Education Elective (Social Science List)	3
Total	**15**

Spring Semester

Foreign Language Elective	3
General Elective (Department Advisement)	3
General Education Elective (Humanities List)	3
Minor Elective	3
Minor Elective	3
Total	**15**

Junior Year
Fall Semester

EVR 3023 Introduction to Marine Environment	3
EVR 3033 Environmental Regulations	2
EVR 4036 Environmental Equity & Justice	3
Environmental Science Elective (Department Advisement)	3
Minor Elective	3
Foreign Language Elective	3
Total	**17**

Spring Semester

EVR 4643 Environmental Policy & Risk Mgmt.	3
Environmental Science Elective (Department Advisement)	3
Foreign Language Elective	3
Minor Elective	3
Minor Elective	3
Total	**15**

Senior Year
Fall Semester

EVS 4636 Risk Communication	3
EVR 4804 Enviro. Tox. & Human Hlth.	3
Environmental Science Elective (Department Advisement)	3
Environmental Science Elective (Department Advisement)	3
General Elective (Department Advisement)	3
Total	**15**

Spring Semester

EVR 4032 Environmental Ethics	3
Environmental Science Elective (Department Advisement)	3
General Elective (Department Advisement)	3
General Elective (Department Advisement)	3
General Elective (Department Advisement)	3
Total	**15**

Minor Concentration Electives

A requirement for a Bachelor of Arts Degree or a Bachelor of Science Degree in Environmental Studies is the fulfillment of requirements for a Concentration of Courses that are associated with a degree offered at Florida A&M University. The degree that is chosen for this Concentration of Courses must not be a degree offered in the School of the Environment.

A student can fulfill the Concentration of Courses requirements for a degree in Environmental Studies in two ways. The first way is to take a minimum of 18 credit hours of courses such that 1) These 18 credit hours of courses are not required courses for the degree being sought in the School of the Environment and 2) These 18 credit hours are required by a degree curriculum at Florida A&M University.

The second way is to fulfill requirements for a Minor Course of Study that is associated with a degree offered at Florida A&M University such that this Minor Course of Study is not a Minor that is associated with a degree in the School of the Environment. Examples of such minors are those in History, Journalism, Philosophy and Religion, and Political Science.

Environmental Studies majors may also choose other concentration area electives. Students desiring other minor concentration electives should refer to the course requirements as listed in the respective college/schools via this Catalog. The selection of other minor concentration electives is based on the individual student's long-term goals.

Course Descriptions

EVR 1001 Fundamentals of Environmental Science (3) Conditions that are healthy for living things on earth are the main topics covered in the course. To identify these conditions relevant concepts from biology, chemistry and physics are presented. Threats to healthy conditions, actions that are likely to maintain healthy conditions and laws that promote health conditions are then discussed. One objective of the course is to present information that

will serve as part of the basis for decisions about lifestyle choices and economic actions to support.

EVR 2920 Environmental Science Forum & Colloquium (1) An introductory seminar on current environmental science research. It also provides a forum to discuss current environmental issues and problems.

EVR 3023 Introduction to the Marine Environment (3) This course introduces students to the various components (i.e. physical chemical, biological and geological) of the marine environment as well as incorporates discussions on the inter-relatedness of these components.

EVR 3028 Environmental Modeling Principles (3) An introduction to mathematical modeling of environmental systems and processes.

EVR 3033 Environmental Regulations (2) Discussion on current issues and the role of regulatory agencies in environmental protection.

EVR 3235 Atmospheric Processes (3) An introductory course covering the structure, characteristics, behavior and environmental functions of the atmosphere, including the physical and chemical processes of the atmospheric energy budget, atmospheric circulation, and the retention, transformation, deposition and re-suspension of atmospheric contaminants. It also covers global and local atmospheric phenomena.

EVR 3327 Environmental Resource Economics (3) Provides discussion of environmental and resources policy issues and cost-benefit analysis.

E**VR 3867 Environmental Risk Analysis I** (3) This course introduces the student to ecological and human health risks and issues related to quantitative risk assessment.

EVR 3940 Internship (1-3) Requires the consent of a faculty member. It includes supervised field work, on-site training and skill development in an area of Environmental Science under the supervision of an agency ad monitored by Environmental Sciences Institute faculty.

EVR 4024 Marine Microbial Ecology w/Lab (4) This course will provide an introduction to microbial processes in the marine environment and will address how these processes relate to biogeochemical cycling on a global scale. The laboratory component of this course will include both field and laboratory studies of topics introduced during the course of the lecture.

EVR 4027 Wetlands Preservation and Restoration w/Lab (4) This course will provide students with a basic understanding of wetland systems and the environmental and economic issues related to their preservation and/or restoration. The laboratory component of this course will include both field and laboratory studies of topics introduced during the course of the lecture.

EVR 4032 Environmental Ethics (3) This course includes discussion of various local, state and federal laws on the environment and ethical dilemmas and moral issues.

EVR 4036 Environment Equity & Justice (3) This course includes discussion and case studies of environmental problems that impact low income and minority communities.

EVR 4140 Environmental Chemistry w/Lab (4) This is an introductory course on the characteristics and environmental effects of chemical processes in air, water and soil.

EVR 4143 Environmental Radiochemistry (3) This course concerns theory of radioactive transformations and radio nuclide migration in the environment. This course sequences the chemical study of radioactive elements, both natural and artificial, and their use in the study of biological, physical and chemical process.

EVR 4193C Environmental Monitoring w/Lab (4) Introduces students to the use and application of biochemical analytical tools used for monitoring and methodology, and principles of sampling, analyzing and interpreting results related to the atmosphere.

EVR 4215 Marine Pollution (3) This course will give an over view of all types of marine pollution (i.e. physical, chemical biological) and will also provide students with a greater understanding of how these pollutants impact the marine environment.

EVS 4636 Risk Communication (3) Includes lecture and practical aspects of communicating risk information to policy makers and the public.

EVR 4643 Environmental Policy and Risk Management (3) Focuses on policy institutions and policies related to environmental and health risks.

EVR 4804 Environmental Toxicology & Human Health (3) Is an introduction to environmental
toxicants in air, water, soil and consumer products and the effects on human health.

EVR 4869 Environmental Risk Analysis II (3) This course is a continuation of Environmental Risk Analysis I which expands on ecological and human health risks and issues related to quantitative risk assessment.

EVR 4910 Senior Thesis (3) Provides research experience for students with a GPA of 3.0 or better who wish to pursue post graduate education.

EVS 3024C Environmental Instrumentation & Analytical Techniques (4) Introduces students to the use and applications of instruments for solving environmental problems.

EVS 3195 Soil and Groundwater Monitoring (3) Includes lecture and practical aspects of soil and water analysis.

EVS 3395 Contaminant Hydrogeology (3) Provides discussions on principles and methods of subsurface contamination assessment with emphases on the influence of subsurface geologic and hydrologic properties on contaminant distribution and behavior.

EVS 3654 Hazardous Waste Management (3) Includes discussion and study of methods of hazardous waste recovery and/or disposal.

EVS 3662 Principles of Contamination Assessment w/Lab (3) Provides lecture and laboratory on the process of measuring or estimating the intensity, frequency, and duration of human or other population exposures to risk agents.

EVS 3672 Fundamentals of Bioremediation (3) Consists of discussion and study of processes and applications of remediation technologies.

EVR 3823 Environmental Impacts (3) Consists of evaluation and prediction of the physical, ecological and socioeconomic consequences of industrial and land development activity, including the effects of development projects on human health and safety and formulation of environmental impact statements.

EVS 4007 Introduction to Environmental Sciences (3) Topics will focus on the scientific, social, political, and economic aspects of environmental sciences. Specific topics will include ecological principles, energy, human effects on ecosystems, pollution problems/solutions, waste management and case studies.

EVS 4025C Applied Microbial Processes w/Lab (4) Is a survey of microbial ecology and the relationship of these processes to the environment.

EVS 4605 Introduction to Environmental Toxicology (3) Prereq: Instructor's permission. The study of the various characteristics and effects of environmental toxicants in air, water, soil and consumer products. It includes exposure sources and types; distribution and fate; alterations of biological and biochemical processes; control and monitoring processes pertaining to environmental contaminants.

EVS 4810 Environmental Toxicology and Human Health II (3) Focuses on the assessment of the nature and probability of environmental exposure to toxicants in air, water, soil and consumer products and the effects on human health.

EVS 4905 Directed Individual Study (1-3) Requires the consent of the instructor. It provides detailed examination of a topic in environmental sciences. It is conducted on a personal basis with the instructor This course may be repeated with different topics but cannot exceed three (3) credit hours.

Graduate Programs School of the Environment
Program of Study
Master of Science Degree in Environmental Science
Environmental Biotechnology
Environmental Restoration and Waste Management
Marine and Estuarine Environments
Environmental Policy and Management
Radiation Protection
Doctor of Philosophy Degree in Environmental Science
Environmental Chemistry
Environmental Policy and Risk Management
Aquatic and Terrestrial Ecology
Biomolecular Sciences
Graduate Course Descriptions

Master of Science Degree in Environmental Science
Degree Requirements

The M.S. degree program offers students the opportunity to specialize in Environmental Restoration and Waste Management, Radiation Protection, Environmental Biotechnology, Marine and Estuarine Environments, and Environmental Policy and Management. Graduates of FAMU and other SUS undergraduate programs in natural sciences, pharmacy, economics, mathematics, engineering, engineering technology, or computer science are seen to be the principal clientele for the program. Students enrolled in the School of the Environment M.S. Degree program are required to complete a thesis.

Admission into the M.S. degree program requires that students hold a 3.0 GPA (on a 4.0 scale) in the last 60 semester hours or the last 90 quarter hours of undergraduate education or have a combined score of 300 on the Graduate Record Examination or an advanced degree in a related area of study, a prospective research advisor and financial support. Admission to the School of the Environment M.S. degree program may be subject to space and fiscal limitations. Selection criteria include such factors as grades, test scores, educational objectives, area of study, work experience, recommendations, and personal records. All admissions shall be approved by the School of the Environment Graduate Committee, the School of the Environment dean, and the dean/director of Graduate Studies.

This program requires a minimum of 36 credit hours which combine three basic components: (A) core courses (19 hrs.) that provide a fundamental understanding of environmental science, issues and policies; (B) concentration courses (minimum 12hrs.), which enable students to establish a solid foundation in their area of interest and (C) thesis (6 hrs.).

Program of Study
A. Core Courses (*)
First Year
Fall Semester

EVR 6064 Principles of Ecology*	3
EVS 5905 Environmental Colloquium/Seminar*	1
EVS 6885 Environmental Research Design & Analysis*	4
Elective	3
Total	**11**

Spring Semester

CHS 5610 Environmental Chemistry w/Lab*	4
EVR 5260 Sources and Contl of Enviro Pollution*	3
EVR 5864 Environmental Policy & Risk Management*	3
EVS 5905 Environmental Science Colloquium/Seminar*	1
Total	**11**

Summer Semester

EVS 5911 Supervised Research	1-3
EVS 5912 Dir. Individual Study and/or	1-3
EVS 5941 Internship	Var
Total	**1-6**

Master of Science in Environmental Sciences with a Concentration in Environmental Biotechnology

Second Year
Fall Semester

EVS 5028 Molecular Biology Techniques	3
EVS 5896 Environmental Biotechnologies	3
EVS 5905 Environmental Colloquium/Seminar	1
EVS 5970 Master's Degree Thesis	3
Total	**10**

Spring Semester

EVS 5605 Environmental Toxicology	3
EVS 5905 Environmental Colloquium/Seminar	1
EVS 5970 Master's Degree Thesis	3
Elective	3
Total	**10**

Master of Science in Environmental Sciences with a Concentration in Environmental Restoration and Waste Management

Second Year
Fall Semester

EVS 5604 Hazardous Material Management	3
EVS 5970 Master's Degree Thesis	3
GLY 5828 Subsurface Fate & Transport	3
Total	**9**

Spring Semester

EVS 5655Waste Treatment & Disposal	3
EVS 5970 Master's Degree Thesis	3
EVS 5673 Bioremediation Application & Techniques	3
Total	**9**

Master of Science in Environmental Sciences with a Concentration in Marine and Estuarine Environments

Second Year
Fall Semester

EVR 5213 Marine Pollution	3
EVS 5970 Master's Degree Thesis	3
PCB 5315 Marine/Estuarine Ecosystems	3
Total	**9**

Spring Semester

EVR 5068C Marine Microbial Ecology w/Lab	4
EVS 5608 Aquatic Toxicology	3
EVS 5970 Master's Degree Thesis	3
Total	**10**

Master of Science of Environmental Sciences with a Concentration in Environmental Policy and Management

Second Year
Fall Semester

EVR 5863 Environmental Resource Economics & Policy	3
EVR 5865 Environmental Risk Analysis	3
EVS 5862 Environmental Regulations and Regulatory Agencies	2

EVS 5970 Master's Degree Thesis	3
Total	**11**

Spring Semester

EVR 5866 Principles of Environmental Law Practice	3
EVS 5970 Master's Degree Thesis	3
EVS 6883 Environmental Decision Making	3
Total	**9**

Master of Science in Environmental Sciences with a Concentration in Radiation Protection

Second Year
Fall Semester

CHS 5105 Environmental Radiochemistry	3
EVS 5970 Master's Degree Thesis	3
RHT 5415 Radiation and Health Physics	3
Total	**9**

Spring Semester

EVS 5616 Civilian Radioactive Waste Management	3
EVS 5693 Radiation Instruments and Measurements	3
EVS 5970 Master's Degree Thesis	3
Total	**9**

Electives

BCH 5340 Protein Chemistry	3
CHS 5105 Radiochemistry I	4
CHS 5106 Radiochemistry II	4
CHS 5610 Environmental Chemistry	3
CWR 6125 Groundwater Hydrology	3
EVR 5063 Elements of Environmental Biology	3
EVS 5027 Environmental Microbiology	3
EVS 5603 Site Characterization and Soil Survey	3
EVS 5604 Environmental Microbiology	3
EVS 5606 Environmental Physiology and Nutrition	3
EVS 5607 Environmental Radioactivity	3
EVS 5693 Radiation Instruments and Measurement	3
EVS 5865 Environmental Risk Assessment	3
EVS 5910 Environmental Science Research	3
EVS 5911 Supervised Research	Var
EVS 5912 Directed Individual Study	3
EVS 5930 Special Topics Environmental Sciences	3
EVS 5941 Environmental Science Internships	Var
RHT 5124 Radiation Biology	3
RHT 5130 Sources/Control Radiation Waste	3
RHT 5210 Principles of Radiological Health	3
RHT 5326 Internal Radiation Dosimetry	3
RHT 5948 Special Topics in Radiation Protection	3

Doctor of Philosophy Degree in Environmental Sciences

Degree Requirements

The Doctor of Philosophy (Ph.D.) degree program in the School of the Environment prepares scientists to confront environmental issues which can be resolved only through innovative basic and applied research. The degree requirements are intended to ensure that all Ph.D. candidates develop independent and originality of thought and that they have in-depth knowledge in a specialized area of study and a broad knowledge base in environmental science in general. The Ph.D. program is an extension of the Master's degree program. The program emphasizes environmental

chemistry, environmental policy and risk management, aquatic and terrestrial ecology, and biomolecular sciences.

Completion of the requirements for the doctoral degree includes the following:

- A 3.0 cumulative grade point average must be maintained in all coursework.
- Nineteen (19) hours of core requirements
- Thirty seven (37) hours of area (12 hrs. minimum) and supporting courses
- Twenty four (24) hours of Dissertation Research
- Participation in the instructional component of select graduate and undergraduate lectures and/or laboratories as assigned for a minimum of two semesters
- Successful completion of an oral and written comprehensive examination.
- Submission and oral presentation of research proposal
- At least one presentation at a scientific meeting
- Submission of at least one manuscript for publication in a refereed scientific journal and
- Submission and defense of an acceptable dissertation based on original research.

Applicants for admission should have a Bachelor of Science (B.S.) or a graduate degree in the natural sciences, engineering, mathematics or a closely related area. The Graduate Record Examination combined score of at least 300 in the verbal and quantitative components of the general test and a "B" average in upper level (last 60 hours) B.S. degree course work are required of all applicants. Students must also submit three letters of recommendation from graduate or undergraduate professors or other persons who can attest to their potential to succeed in the program. Applicants must also meet the general admission requirements of the School of Graduate Studies and Research. Foreign applicants are required to meet the above requirements in addition to obtaining a score of at least 550 on the Test of English as a Foreign Language (TOEFL). Admission to the School of the Environment Ph.D. degree program may be subject to space and fiscal limitations.

A. Core Courses

CHS 5610 Environmental Chemistry w/L	4
EVR 5260 Sources & Control of Environmental Pollution	3
EVS 5905 Environmental Colloquium/Seminar*	2
EVR 6064 Principles of Ecology	3
EVR5862 Environmental Policy and Risk Management	3
EVS 6885 Environmental Research Design & Analysis w/Lab	4
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*One hour course offered in the fall and spring semesters. All doctoral students, including those who have satisfied the minimum seminar requirements, are expected to participate in the Research Seminar every semester except the semester in which they defend their dissertation.

B. General Courses

EVS 6932 Special Topics	Var
EVS 6906 Directed Independent Study	Var
EVS 6913 Supervised Research	Var
EVS 6980 Dissertation	Var

Ph.D. in Environmental Sciences with a Concentration in Environmental Chemistry

CHS 5610C Environmental Chemistry	3
CHS 5105 Radiochemistry I	3
CHS 5106 Radiochemistry II	3
EVR 5260 Sources & Control of Environmental Pollution	3
EVS 5027 Environmental Microbiology	3
EVS 5603 Site Characterization & Soil Survey	3
EVS 5655 Waste Treatment and Disposal	3

EVS 5607 Environmental Radioactivity	3
EVS 5673 Bioremediation Application & Tech	3
EVS 5693 Radiation Instruments & Measurement	3
EVS 6029 Computational Methods in Env. Science	3
EVS 6705 Atmospheric Contaminant Transport	3
EVS 6706 Fate & Transport of Environmental Cont.	3
EVS 6815C Chemical Separation Techniques w/Lab	4
GLY 5828 Subsurface Fate and Transport	3
RHT 5130 Sources & Control of Radioactive Waste	3
RHT 5210 Principles of Radiological Health	3
RHT 5326 Internal Radiation Dosimetry	3
RHT 5415 Radiological and Health Physics	3
RHT 5948 Special Topics in Radiation Protect	2

Ph.D. in Environmental Sciences with a Concentration in Environmental Policy and Risk Management

EVR 5863 Environmental Resource, Economics & Policy	3
EVR 5864 Environmental Policy & Risk Management	3
EVR 5865 Environmental Risk Analysis	3
EVR 5866 Principle Environmental Law Practice	3
EVR 6265 Remote Sensing of Environments	3
EVS 5862 Environmental Regulations & Regulatory	2
EVS 6818 Ecological Risk Assessment	3
EVS 6887 Molecular Epidemiology	3
EVS 6883 Environmental Decision Making	3

Aquatic and Terrestrial Ecology

EVR 6064 Principles of Ecology	3
EVS 6818 Ecological Risk Assessment	3
EVS 6933 Advanced Topics in Aquatic & Terrestrial Ecolology	3

Biomolecular Sciences

EVS 5028 Molecular Biology Techniques	3
EVS 5027 Environmental Microbiology	3
EVS 5673 Bioremediation Application & Tech.	3
EVS 5896 Environmental Biotechnologies	3
EVS 6798 Environmental Biosensors	3
EVS 6887 Molecular Epidemiology	3

Graduate Course Descriptions

CHS 5105 Radiochemistry I (4) Prereq:CHM 1045, PHY 3048. This course sequences the chemical study of radioactive elements, both natural and artificial, and their use in the study of biological, physical and chemical process.

CHS 5106 Radiochemistry II (4) Prereq: CHS 5105. Focuses on the advanced examination of radioactive elements.

CHS 5610 Environmental Chemistry (3); Prereq: CHM 1045, MAC 3311. Focuses on the natural and anthropogenic chemical processes in air, water and earth; their characteristics and effects on the environment, and the Chemistry of environmental systems and of environmentally significant processes in industry, agriculture, waste management and energy production.

EVR 5029 – Wetland Preservation W/Lab (4) - This course will provide students with an understanding of wetland systems and the environmental and economic issues related to their preservation and/or restoration. The laboratory component of this course will include both field and laboratory studies of topics introduced during the course of the lecture.

EVR 5060 Introduction to Environmental Science (3) Introduces the fundamentals of the interactions of man and the environment related to air resources, land resources with emphasis on the principles of biology, ecology, and environmental health.

EVR 5062 Principles of Environmental and Occupational Health (3) Prereq: HSC 1100; CHM 1045. Discusses the various ways in which environmental factors influence human health as well as an examination of technology and current research; includes physiological interaction; response to hazards.

EVR 5063 Elements of Environmental Biology (3) Prereq: BSC 1011. Focuses on the aspects of environmental biology at the biochemical and cellular level, and selected topics in cell structure and function, biochemistry kinetics, genetics at the molecular chromosomal levels, embryology, blood and its function as well as coverage of green plant biology. Finally, aspects of integration between plants, animals and the environmental will be presented.

EVR5068C Marine Microbial Ecology w/Lab (4) This course will provide an introduction to microbial processes in the marine environment and will address how these processes relate to biogeochemical cycling on a global scale. The laboratory component of this course will include both field and laboratory studies of topics introduced during the course of the lecture.

EVR 5213 Marine Pollution (3) Prereq: CHM 3210. Discusses the impact of urbanization, industrialization, waste disposal and other human activity on the oceanic ecosystem, and analyses of major pollutants and polluting practices, including sewage, marine debris, toxic chemicals, heavy metals, oil and radioactive materials. Survey of management techniques.

EVR 5260 Source/Control of Environmental Pollution (3); Prereq: CHM 1045, MAC 3311. Includes the origins of environmental pollutants, their characteristics and their pathways in the earth's atmosphere, waters and soils; mechanisms of pollution; and chemical, physical and biological effects of environmental pollution. Methods of pollution monitoring, prevention, abatement and remediation.

EVR5863 Environmental Resources, Economics, and Policy (3) Topics covered will include environmental and resources policy issues, benefits-cost analysis, property rights, ethics, role of economics in policy analysis, global perspectives, and cases studies.

EVR 5864 Environmental Policy and Risk Management (3) This three-hour credit course is a series of lectures and case study presentations which illustrates the principles involved in environmental health policy, risk management, and risk decision-making.

EVR 5865 Environmental Risk Analysis (3) Topics discussed will include risk-based management, environmental problems, ecological health risks, human health risks, and problems/issues related to quantitative risk assessment. Specific focus will be on risk evaluation, public perception of risk, risk communication, economics, and case studies.

EVR 5866 Principles of Environmental Law Practices (3) Topics covered will include environmental law practices, legal principles, problems/solutions, and the judicial system. Emphasis will be on case studies.

EVR 6064 Principles of Ecology (3) Presentation of current topics in the various fields of ecology, including community, populations, and ecosystem ecology. Particular emphasis will be placed on those areas related to environmental management.

EVR 6069 Terrestrial and Wetland Ecology: Study of terrestrial and wetland environments and ecological processes. The characterization, description, and mapping of habitats, use of topographic maps, aerial photographs, national inventory maps and remote sensing data.

EVR 6115 Climate Changes and Environmental Impacts: Properties and dynamics of climatic fluctuations. Causes and effects of climatic change and global warming. Environmental impact of climate change.

EVR 6265 Remote Sensing of Environments: The theory and applications of non-intrusive environmental monitoring technologies, including ground-based, aircraft-based and satellite-based sensing instrumentation, and the analysis and interpretation of their data. Sensing and imaging by acoustic, spectrometric, interferometric and radiometric methods; Lidar, radar and polarimetry

applications to contaminated site characterization and estimates of atmospheric surface properties.

EVS 5004 Principles of Environmental Sciences (3) Topics covered with focus on the scientific, social, political, and economic aspects of environmental sciences. Specific topics will include ecological principles, energy, human effects on ecosystems, pollution problems/solutions, waste management, and case studies.

EVS 5022 Environmental Research Methodology (3) – Principles and methods of planning and conducting research projects in environmental sciences and analyzing research data and reporting the results. It includes considerations of topic selection and hypothesis development, experiment design data collection statistical analysis of environmental data, including stochastic analysis and computer applications, and an introduction to environmental systems modeling.

EVS 5023 Marine and Estuarine Survey Methods (3) Prereq: MAC This course consists of systematic observations, evaluation and prediction of the biological consequences of anthropogenic pollution and other adverse impacts to marine and estuarine systems.

EVS 5027 – Environmental Microbiology (3) This course is designed to examine the relationship of microbes and the environment and the use of microbes in environmental cleanup.

EVS 5028 Molecular Biology Techniques (3) This course focuses on the application of different sets of DNA or RNA based molecular biology techniques to characterize environmental microbiota, and will address the strengths and limitations of these approaches.

EVS 5603 Site Characterization & Soil Survey (3) Prereq: College level chemistry or environmental chemistry; introduction to soil. Site characterization is the process of defining and delimiting the ecologic, hydrologic and engineering properties of a site. It is the technical basis for project analyses and evaluation. Soil survey methods and maps developed by the Soil Conservation Service (SCS) provide an understanding of site soils, allows estimation of many physical, hydrological, and chemical properties of soil relevant to modeling contaminant fate and transport.

EVS 5604 Hazardous Materials Management (3) The course reviews specific treatment processes and presents pertinent basic concepts in quantitative approach to source control and "waste utilization."

EVS 5605 Introduction to Environmental Toxicology (3) Prereq: Instructor's permission. Study of the various characteristics and effect of environmental toxicants in air, water, soil and consumer products. Exposure sources and types; distribution and fate; alterations of biological and biochemical processes; control and monitoring processes pertaining to environmental contaminants.

EVS 5606 Environmental Physiology and Nutrition (3) Prereq: BSC 1011. Study of physiological responses of animals to environmental changes/stresses such as water, heat, cold, physical work, and nutritional changes and chemicals in feeds.

EVS 5607 Environmental Radioactivity (3) Prereq: CHM 1045, MAC 3311. Origins, characteristics and environmental interactions of radioactive emissions and radio nuclides. Terrestrial, cosmogonic and anthropogenic sources of radioactivity. Theory of radioactive transformations and of radio nuclide migration in air, water, and biotic systems. Radiation metrology, instrumentation and monitoring.

EVS 5608 Aquatic Toxicology (3) A study of the adverse effects of toxic chemicals and other anthropogenic materials or xenobiotics on aquatic organisms including lethal and sublethal effects.

EVS 5616 Civilian Radioactive Waste Management (3) Collection, handling, processing, transportation and safe disposal of radioactive wastes from sectors of the nuclear fuel cycle stages and from biomedical, industrial, and research applications of radioactive materials. Isolation and conditioning of radioactive materials. Treatment and controlled dispersion of low-level nuclear wastes. Siting, licensing and operation of temporary and permanent repositories.

EVS 5617 Radiological Risk Analysis (3) Quantitative and descriptive representation of probability of occurrence and relative severity of adverse effects from exposure to radioactivity. Evaluation of potential sources of radioactivity and prediction of radio nuclide release characteristics, exposure conditions, effective doses and resultant health and environmental effects. Applications of epidemiological and monitoring data.

EVS 5655 Waste Treatment and Disposal (3) Prereq: CHM1045. Principles and methods of waste management for environmental safety and health; with concentration on wastewater and solid wastes from industrial and municipal sources, and the handling, processing, disposal and monitoring of hazardous wastes; including radioactive and mixed wastes.

EVS 5673 Bioremediation Applications & Techniques (3) Introduces student to the latest information regarding the processes, application, and limitations of using remediation technologies to restore contaminated soil and groundwater. New and field-tested technologies are covered, and site characterization requirements for each remediation technology are presented.

EVS 5693 Radiation Instruments and Measurements (3) Lecture and laboratory course on the techniques and equipment for detection and measure of ionizing radiation; for collecting, analyzing and interpreting radiations; and for collecting, analyzing and interpreting radiation data. Detector types; counting systems; methods and instrumentation for photon, charged article and neutron spectrometry. Design, installation and operation of systems for environmental radiation monitoring.

EVS 5862 Environmental Regulations and Regulatory Agencies (2) Discussions on current issues/regulations in environmental protection as well as the roles of regulatory and non-regulatory agencies.

EVS 5896 Environmental Biotechnologies (3) Principles and practice of the various biotechnologies and their applications in environmental analysis, monitoring and measurement. This course reviews the development and application of biotechnologies for solutions to environmental challenges as well as associated regulatory, ethical, and legal issues. Topics include instrumentation, applications, techniques and research.

EVS 5905 Environmental Colloquium/Seminar (1) Discussions will focus on student presentations, seminars, and guest speakers.

EVS 5910 Environmental Science Research (2) Prereq: Instructor's permission. Research experiences in an environmental science discipline.

EVS 5911 – Supervised Research (1-3) - Prerequisite: Consent of the instructor. Performance of research project under the supervision of the student's faculty advisor and/or thesis advisor. May be repeated for up to a maximum of 6 hours to be applied towards the Master's Degree.

EVS 5912 – Directed Individual Study (1-3) – Student must obtain the consent of the instructor. Detailed examination of a topic in environmental sciences. Conducted on a personal basis with the instructor. This course may be repeated with different topics but cannot exceed three credit hours for each topic.

EVS 5930 Special Topics in Environmental Science (3) Prereq: Instructor's permission. This course is designed for individual student investigations on special topics, projects and readings on current environmental issues requiring literature search, field exercises and written reports, as well as discussions from invited speakers.

EVS 5941 Environmental Science Internship (3-12) Prereq: Faculty permission. Supervised field work, on-site training and skill development in an area of Environmental Science under the supervision of an agency and monitored by Environmental Sciences Institute faculty.

EVS 5970 – Master's Thesis (1-6) – Students will undertake re-

search projects in the area of their specific interest under the supervision of a graduate faculty member. Upon completion of the research project, each student will submit a thesis to his/her graduate committee and successfully defend it in an oral presentation.

EVS 6029 Computational Methods in Environmental Science The main objective of this course is to familiarize students with the computational techniques that are used in the field of environmental sciences. These techniques include semi-empirical methods of computational chemistry, ground and atmospheric material transport methods, and radiation dose calculations.

EVS 6705 Atmospheric Contaminant Transport (3) Characterization of the dynamical and chemical behavior of atmospheric contaminants, including their emission from natural and anthropogenic sources, interaction with other atmospheric chemical species, space-time distribution, and deposition. Advection and diffusion under turbulent conditions, and the influence of atmospheric radiations.

EVS 6706 Fate and Transport of Environmental Contaminants (3) This course has the same goal as the course EVS 6705, except that the focus is not exclusively on atmospheric transport.

EVS 6798 Environmental Biosensors: Development and application of biosensors for detecting and monitoring the presence of contaminants in the environment. Emphasis will be placed on aquatic and atmospheric biosensors.

EVS 6815C Chemical Separation Techniques (4) Procedures and methods for isolating components of complex mixtures of chemical compounds. This course will focus on distillation processes, solvent extraction, ion exchange, centrifugation, and chromatographic separation concepts: gas chromatography, liquid chromatography, supercritical fluid chromatography, electrophoresis, field-flow fractionation.

EVS 6818 Ecological Risk Assessment (3) Framework, methodology and applications of ecological risk assessments and ecosystem management. Focus is on regional scale environmental issues, such as the Everglades restoration.

EVS 6883 Environmental Decision Making (3) Identification and presentation of tools that aid the environmental decision-making process. Some of the tools covered in this course include software, policy approaches, risk assessment, environmental databases, and focus groups among others. Particular emphasis will be placed on subnational environmental decision-making.

EVS 6885 Environmental Research Design & Analysis (4) Prereq: Principles and methods of planning and conducting research projects in environmental sciences and of analyzing research data and reporting the results. It includes considerations of: topic selection and hypothesis development; experiment design and data collection; statistical analysis of environmental data, including stochastic analysis and computer applications; and an introduction to environmental systems modeling. (Includes 1 hour lab).

EVS 6906 – Directed Independent Study (1-4) - Student must obtain the consent of the instructor. Detailed examination of a topic in environmental sciences. Conducted on a personal basis with the instructor. This course may be repeated with different topics but cannot exceed four credit hours for each topic.

EVS 6913 – Supervised Research (1-9) – Prerequisite: Consent of the instructor. Performance of research project under the supervision of the student's faculty advisor and/or thesis advisor. May be repeated for up to a maximum of 6 hours to be applied towards the Doctorate Degree.

EVS 6932 – Special Topics (1-4) Prerequisite: Consent of instructor. Special topics in environmental science with emphasis on recent developments and case studies.

EVS 6933 Advanced Topics in Environmental Ecology: A topic in environmental ecology not covered in another course. Topic varies to keep pace with current issues.

EVS 6980 Dissertation: (1-12 hours) Prerequisite(s) Admission to doctoral candidacy. A formal presentation of an independent and scholarly research project for a candidate for the Doctor of Philosophy Degree (Ph.D.).

GLY 5828 Environmental Fate and Transport of Contaminants (3) Prereq: CHM 1045, MAC 3311. Migration of contaminants by diffusion, advection and dispersion within individual environmental compartments (air, water, soil and groundwater) and across their boundaries, including the physical, chemical and biological processes which influence contaminant propagation, behavior and ultimate location and fate. Principles and applications of contaminant fate and transport modeling.

PCB 5315 – Marine/Estuarine Ecosystems – (3) – Quantitative and qualitative evaluation of interacting physicochemical and biological activities of communities in marine and estuarine environments.

RHT 5124 Radiation Biology (3) Prereq: BSC I011. Presents current knowledge about radiation effect on mammals, its application in quantitative evaluation of relations between characteristics of various radiation exposures and of somatic and genetic effects in man and animals.

RHT 5130 Sources and Control of Radioactive Waste (3) Prereq: CHM 1046. The evaluation of the significance of uses in nuclear energy in relation to environmental processes and possible methods for control of radioactive wastes. Consideration of biological accumulation and movement of radioisotopes in the environment.

RHT 5210 Principles of Radiological Health (3) This course discusses the principles and methods of protection against radiation hazards with emphasis on occupational and other environment aspects. Nature and reaction of radiation with matter; radiation measurements; biological effects; types of exposure; methods of exposure; control and disposal of waste. Primarily for students not pursuing the radiation protection sequence.

RHT 5326 Internal Radiation Dosimetry (3) Prereq: CHM 1045; MAC 3312; BSC 3090. Historical basis of continuing evolution of internal radiation dosimetry practices. The development and application of primary and secondary radiation protection standards concerning internal exposure are addressed.

RHT 5415 Radiological and Health Physics (3) Prereq: PHY 3048. Methodology of radiation detection and measurement, fundamental concepts of dosimetry, radiation units, the measurement and calculation of dosimetric quantities, statistics for health physics, a review of biological data, ICRP and NCRP radiation-protection limits, and procedures for protection from external and internal radiation sources.

RHT 5948 Special Topics in Radiation Protection (2) Prereq: Instructor's permission. This course is designed to provide off-campus credit for students participating in internships at the Oak Ridge National Laboratory. Students will be involved in activities to include radiation interaction, detection and dosimetry; radiation protection standards and regulations; biological effects, risk assessment and ALARA (as low as reasonably achievable radiation exposure) concepts; facility design and nuclear safety; radiological emergency management; environmental monitoring and assessment and nuclear waste management.

School of Graduate Studies and Research

Dr. Verian Thomas, Interim Dean

The School of Graduate Studies and Research (SGSR) has the principal responsibility of working in collaboration with the various schools and colleges to maintain, develop, coordinate, and monitor the policies and procedures that govern all graduate programs.

Graduate study is available in 12 schools and colleges
Collectively, these entities offer 12 Doctoral degrees and 48 Master's Degree programs.

Graduate Student Admissions

The Graduate Student Admissions Office is located in the School of Graduate Studies and Research. The admissions process is a coordinated effort between the School of Graduate Studies and the academic colleges and schools. The office provides an environment that is conducive to the students' admission, enrollment, and transition to graduate school.

Fellowships, Assistantships and Tuition Waivers

The School of Graduate Studies manages allocations for several sources of funding. Financial assistance available to support graduate students through the School of Graduate Studies includes the University assistantships, fellowships and scholarships, and tuition waivers. The Delores Auzenne Fellowship Program and the SUS Summer Orientation Program, which are funded by the State of Florida, are awarded through the SGSR.

Graduate Feeder Scholars Program

The School of Graduate Studies manages the Graduate Feeder Scholars Program (GFSP). The GFSP is an official partnership agreement arranged by FAMU with several participating universities located throughout the United States.

Through the Graduate Feeder Program, FAMU students are afforded the opportunity to receive advanced study in graduate programs. The feeder arrangement was conceptualized and created in response to the national need to increase the number of minorities participating in advanced graduate education. FAMU is the lead university in this consortium and acts as the hub with a committed role of providing a pool of qualified African American and other underrepresented minority students, who are motivated to pursue the master's or Ph.D. degrees, especially in areas not offered at FAMU. Students, who are interested in the GFSP, are required to have a minimum GPA of 3.0, and at least 30 semester hours of coursework. In addition to the basic requirements, all GFSP applicants must also attend a series developmental and academic enrichment seminars and workshops, offered by SGSR, before they could become a Graduate Feeder Scholar.

In 2004, the School of Graduate Studies and Research led the effort for FAMU to become a member of the National Name Exchange. The Exchange is a consortium of prestigious universities and colleges that collaborate to identify and recruit qualified minority candidates for graduate study, improve student access to information on graduate education, and increase the number of minority students accepted into graduate school. Member institutions include Harvard, Duke, Rutgers, University of Washington, University of California at San Diego and Berkeley, Ohio State, Princeton and Cornell.

Graduate Degree Programs

Details of all graduate programs are listed in this Catalog under each program's school or college.

COLLEGE OF AGRICULTURE AND FOOD SCIENCES
Master of Science in Agricultural Sciences (M.S.)
Concentrations
- Agricultural Sciences
- Agricultural Sciences (non-thesis option)
- Agribusiness
- Entomology
- Plant Science
- Soil and Water Sciences

Doctor of Philosophy in Entomology (cooperative-degree awarded by UF) (Ph.D.)

COLLEGE OF EDUCATION
Master of Science/Master of Education in Educational Leadership (M.Ed./MS)
Master of Education and Master of Science in Elementary Education (M.Ed./MS)
Master of Education/Master of Science in Counselor Education (MS/M.Ed.)
Master of Education in Curriculum and Instruction (M.Ed.)
Master of Science in Sport Medicine (M.S.)

Doctor of Philosophy in Educational Leadership (Ph.D.)

FAMU-FSU COLLEGE OF ENGINEERING
Master of Science in Biomedical Engineering (M.S.)
Master of Science in Chemical Engineering (M.S.)
Master of Science/Master of Engineering in Civil Engineering (M.S./MEng,)
Master of Science in Electrical Engineering (M.S.)
Master of Science in Industrial Engineering (M.S.)
Master of Science in Mechanical Engineering (M.S.)

Doctor of Philosophy in Biomedical Engineering (Ph.D.)
Doctor of Philosophy in Chemical Engineering (Ph.D.)

Doctor of Philosophy in Civil Engineering (Ph.D.)
Doctor of Philosophy in Electrical Engineering (Ph.D.)
Doctor of Philosophy in Industrial Engineering (Ph.D.)
Doctor of Philosophy in Mechanical Engineering (Ph.D.)

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES
Master of Science in Pharmaceutical Sciences (M.S.)
Concentrations:
- Health Outcomes Research
- Pharmacoeconomics

Doctor of Philosophy in Pharmaceutical Sciences (Ph.D.)

Institute of Public Health
Master of Public Health (MPH), On-line
Master of Public Health (MPH)
Doctor of Public Health (DrPH)

COLLEGE OF SCIENCE AND TECHNOLOGY
Master of Science in Biology (M.S.) Concentrations:
- Ecology
- Molecular Cellular Biology
- Physiology

Master of Science in Biology (Non-thesis Option) (M.S.)
- Biological Sciences

Master of Science in Chemistry (M.S.)

Master of Science in Computer Information Sciences (M.S.)
Concentrations
- Computer Information Science
- Software Engineering Science

Master of Science in Physics (M.S.)

Doctor of Philosophy in Physics (Ph.D.)

COLLEGE OF SOCIAL SCIENCES, ARTS AND HUMANITIES
Master of Applied Social Science (MASS) Concentrations
- Criminal Justice
- Global Security and International Affairs
- History
- Political Science
- Psychology
- Public Administration
- Sociology

Master of Science in Community Psychology (M.S.)
Master of Social Work (MSW)

SCHOOL OF ALLIED HEALTH SCIENCES
Master of Science in Health Care Administration (MS)
Master of Science in Occupational Therapy (MS)

Doctor of Physical Therapy (DPT)

SCHOOL OF ARCHITECTURE AND ENGINEERING TECHNOLOGY
Master in Architecture (M.Arch.)
Master of Architecture with a major in Facilities Management (M.Arch.)
Master of Science in Architecture (M.S.)

SCHOOL OF BUSINESS AND INDUSTRY
Master of Business Administration (MBA), On-line
Master of Business Administration (MBA/MS)

SCHOOL OF THE ENVIRONMENT
Master of Science in Environmental Sciences (M.S.)
Concentrations
- Environmental Policy & Management
- Environmental Restoration and Waste/Management
- Environmental Biotechnology
- Marine & Estuarine Environments
- Radiation Protection

Doctor of Philosophy in Environmental Sciences (Ph.D.)
Concentrations
- Environmental Chemistry
- Bio-molecular Science
- Environmental Policy and Management
- Aquatic and Terrestrial Ecology

SCHOOL OF NURSING
Master of Science (M.S.N.); (On-line)
Master of Science in Nursing (M.S.N.)

Admissions Eligibility Requirements
Admission to graduate study is granted to qualified applicants, who are seeking degrees and to qualified post-baccalaureate students who may wish to upgrade specialty certifications or enhance their knowledge.

Minimum University Admission Requirements
1. A Graduate Application (electronically signed and submitted by the applicant);
2. A Residency Classification form (submit with online application);
3. A $30.00 non-refundable application fee is required of all applicants for each application submitted;
4. Hold a baccalaureate degree from an accredited institution of higher education and have earned a Grade Point Average of 3.0 or better in the last 60 credit hours of undergraduate work taken while enrolled as an upper-division undergraduate student working towards a bachelor's degree; OR
5. Hold a graduate degree in a related field from an accredited institution of higher learning with a cumulative GPA of 3.0 or better;
6. One official transcript (in a sealed envelope) from each college or university attended. For FAMU students applying to FAMU graduate programs need not submit transcripts for your FAMU course work. These transcripts will be requested inter nally.
7. Submit Graduate Record Examination (GRE) scores or General Management Admission Test (GMAT) scores. These scores must be sent mailed directly to the FAMU Graduate Admissions Office by the appropriate testing agency. Note: All students must present GRE scores prior to being admitted.

8. Test of English as a Foreign Language (TOEFL= 550/paper-based; 80 internet-based) or International English Language Testing System (IELTS) scores (6.5) sent directly to FAMU from the Testing Service, if an applicant is from a country where English is not the 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 from a university where English is the only official language of instruction.
9. Three letters of Recommendation; Complete this section of the online application.
10. Résumé, essay, portfolio or other materials, if required by the program; (These must be submitted as part of the online application.)
11. *Immunization form that is on FAMU's website.

*To expedite the processing of materials, download and print the Immunization Form and mail 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 FAMU without submitting the Immunization Form, which is available in the immunizations section of the Student Health Services section of the University website.

All official application materials, with the exception of test scores and transcripts, should be submitted online. All supporting documents (such as transcripts, test scores) should be mailed to:

The Graduate Admissions Office
515 Orr Drive
Suite 469 Tucker Hall
Florida A&M University
Tallahassee, FL 32307.

These documents must be received by the stated application deadline.

Applicants, who are interested in being considered for university fellowships or assistantships should apply by the p**riority deadline**, and make sure that their applications are complete, including all transcripts and other program application requirements.

No more than 10 percent of the graduate students admitted for an academic year may be admitted as exceptions to the criteria above. Timely application submission is important. Students are urged to apply in the fall of their senior year, since this allows for the evaluation and award processes to begin by January of each academic year. Late application submission diminishes the applicant's opportunities for admission and financial awards.
For more details on graduate admission, go to the School of Graduate Studies and Research's website.

Funding Opportunities

Specifics about funding opportunities for graduate students are listed on the School of Graduate Studies and Research's website and in this Catalog under the individual schools and colleges.

Satisfactory Academic Progress

Students who receive federal student aid must maintain Satisfactory Academic Progress (SAP) standards. For more information on the SAP policy, contact the Financial Aid Department.

Graduate Student Grievance Procedure

It is the goal of Graduate Studies and Research to provide students with an expeditious, fair, equitable, and consistent procedure for resolving their grievances. These grievance procedures are meant to guide the student through the process. Students should make every effort to resolve the issues informally before filing a complaint or seeking redress beyond the Academic Unit in which the alleged offense has occurred.

- The student shall submit his or her grievance package, in writing, within 30 days or 10 days into the next semester. The grievance packet should be stamped by the graduate coordinator or academic dean of the college to indicate the date and time the grievance was initiated.

- The grievance process can start or stop at any level. However, the graduate coordinator should act as the facilitator.

- If the professor and graduate coordinator cannot find a satisfactory solution, then the matter will be forwarded to the graduate committee or graduate faculty within the college.

- The graduate committee, consisting of graduate faculty, will forward a report indicating its decision to the dean of the college.

- If the dean is not able to resolve the matter, the issue is forwarded to the graduate council committee in an effort to resolve the issue.

- The graduate council sub-committee should submit a report to the Graduate Studies and Research dean.

- The Graduate Studies and Research dean will review all of the documents provided on the issue and make a decision.

- If the student is not satisfied with the decision of the Graduate Studies and Research dean, then the student may refer the matter to the provost for a decision.

- The provost shall review the student's grievance and make the final decision.

- A written recommendation is required at each step.

- The student, professor, the graduate coordinator, the dean of the college and the Graduate Studies and Research dean should be provided with copies of the written recommendation at each step.

School of Journalism and Graphic Communication

Dean: Ann Kimbrough, DBA

The journalism program seeks to attract self-motivated students with above-average capabilities and to provide these men and women with high-quality training for careers in the mass media. Accordingly, the Division of Journalism has established high standards for admission to, and retention in, the program. It offers the Bachelor of Science degree in journalism, and the Bachelor of Science degree in public relations.

Faculty

Knight Foundation Chair (Student Success): Huff, Francine
Garth Reeves Eminent Scholar Chair: Ziegler, Dhyana
Professors: Abrams, Michael E.; Bertolaet, Todd; Kimbrough, Ann; Odine, Maurice; Wilder, Kay
Associate Professors: Grable, Bettye; Jones, Kenneth; White, Valerie
Assistant Professors:
Instructor: Jiles, William
Associate University Librarian: Karen Southwell
Office of Retention: White, Ruthie
Director, WANM-FM: Miles, Keith A.
Director, FAMU TV-20: Jones, Ernest

Admission Qualifications

A high school graduate interested in journalism, graphic design, or public relations at FAMU should apply for admission and indicate interest through the office of the director of admissions for the university. That office will determine admission eligibility as follows:

High School GPA: 2.5
English Composition Course GPA: "B" average or better
SAT/ACT Score: 1010/21

A student who does not initially meet these criteria may enter the College of Social Sciences, Arts and Humanities and major in Interdisciplinary Studies. After completing 30 semester hours with at least a 2.5 overall GPA and "B" average in FAMU freshman composition courses, the student may seek the Dean's permission to change majors.

A student will be considered a major upon completing at least 30 hours of freshman course work (or equivalent) with a GPA of 2.5. This includes a 2.5 average or better in freshman English composition courses or acceptable alternatives approved by the Dean.

All undergraduate transfer students who enter FAMU with junior class standing must have satisfactorily completed the College Level Academic Skills Test (CLAST). Florida community college transfers with AA degrees are also expected to have a minimum 2.5 GPA and a "B" average in English composition. International transfer applicants, whose native language is not English, must present a minimum score of 500 on the Test of English as a Foreign Language (TOEFL) or a certificate from an English language institute.

A student entering FAMU for the first time and intending to major in journalism must be able to keyboard at least 40 words a minute with 85 percent accuracy. Some may also be required to take additional reading, speech, or composition courses.

Retention

All students admitted as journalism majors, having fulfilled the All majors must maintain a 2.5 GPA in journalism, graphic design, and public relations courses. A full-time student must complete a minimum of 12 credit hours of academic work per semester.

A student will be placed on academic probation when his/her GPA falls below 2.4 cumulative GPA, and/or 2.5 GPA in journalism, graphic design, and public relations courses for more than two consecutive semesters. A student placed on probation must meet with the retention committee, which will recommend conditional reinstatement, full reinstatement, or removal from the journalism program.

Graduation

Students must earn 125 semester hours of credit, have at least a 2.4 cumulative GPA, and have a 2.5 GPA in related courses to graduate with a Bachelor of Science in Journalism or Public Relations. Students who wish to graduate with a Bachelor of Science in Graphic Design must earn 120 semester hours and maintain 2.0 cumulative GPA.

General Education Requirements (35 semester hours)

Course	Sem. Hrs.
Communicative Skills	6
Mathematics	6
Natural Sciences	6
Humanities	8
Social Sciences *	6
Speech	3
First Year Experience	2
Total	**35**

Liberal Arts Requirements (30 semester hours)

Recognizing the need for its students to receive a broad, well-rounded education, the School of Journalism & Graphic Communication has developed a list of liberal arts courses required of all majors. These include principles of economics; logic; sociology; psychology; art appreciation; and national, state, and local government. The school also requires majors to take courses to improve oral and written communication. These courses are essential for students preparing for careers in mass media.

Minor (12 semester hours)

Journalism majors must select 12 hours of course work outside the major, such as: literature, political science, criminal justice, history, math, psychology, sociology, economics, Spanish or French. Courses taken in this area cannot be used to complete the liberal arts requirements mentioned above. Other areas may be selected with the approval of the Dean.

Concentration/Free Electives (9 semester hours)

The journalism faculty realizes that some students need to acquire a background in a sub-specialty area. Hence, students

may select 9 semester hours in such areas as: military science, business, computer science, agriculture, photography or graphic design. Students who do not wish to develop a concentration may select 9 semester hours among any courses they choose. Decisions must be made with faculty/academic advisors.

Minor in Journalism, Public Relations, or Graphic Design (18 Hours)

FAMU students may minor in journalism, graphic design, or public relations by successfully completing 18 hours. Each student must complete 11 of the 18 required hours in the following courses: MMC 2000, JOU 3110, MMC 2100, and JOU 3101. Other hours toward the journalism minor will be planned by the student with the consent of the faculty/academic advisor. Some prerequisites may be waived at the discretion of the Dean. Students must discuss their minor programs with an advisor before embarking on programs. Students electing a minor must type at least 40 words per minute (85 percent accuracy) and be proficient in grammar and spelling.

Major in Journalism, Public Relations, or Graphic Design

The journalism major requires a student to complete at least 80 hours outside of the major. This includes a minimum of 65 hours in liberal arts and sciences. At least 39 semester hours are required for the degree.

Students are required to prepare quality, updated resumés from their first day as majors and to put together samples of their work for portfolios. In addition, students are expected to access various forms of print and electronic media, as well as media content on the Internet and pervasive social media.

Capstone Projects

The semester before graduation, students are required to present a Capstone Project to a panel of professors and media professionals. The project includes a portfolio of the students' work accumulated during their years in the School of Journalism & Graphic Communication. Majors must pass the capstone project requirements to graduate. Students must register in Colloquium during their final semester to get credit for the Capstone Project. Summer graduates must register for these courses in the spring because they are not offered during the summer sessions.

Transfer Credit

The School of Journalism & Graphic Communication may accept a maximum of six hours of journalism credit from non-accredited journalism/mass communication programs, and up to 12 hours from accredited programs. The Dean makes the decision regarding the actual number of transfer hours.

Scholarships

The School of Journalism & Graphic Communication awards scholarships to outstanding high school graduates, and currently enrolled students. Furthermore, merit scholarsh**ips are awarded t**hrough the University Scholarship Program Office. The office supports outstanding students as a means to enhance their academic, professional, and personal development.

Black Television News Channel

The School of Journalism & Graphic Communication is home to the Black Television News Channel (BTNC), a new enterprise poised to offer 24-hour multi-platform news content to a global audience. The network represents a unique opportunity to expose journalism, public relations and graphic communication students to multimedia practitioners and the inner workings of a full-scale network news organization.

Bachelor of Science in Journalism

Freshman Year			**Sem. Hrs.**
ENC	1101	Freshman Communication Skills I	3
ENC	1102	Freshman Communication Skills I*	3
MGF	1106	Liberal Arts Math I	3
MGF	1107	Liberal Arts Math II	3
BSC	1005	Biological Sciences	3
EVR	1001	Fundamentals of Environmental Sciences	3
HUM	2211	Historical Survey I**	3
POS	2041	American National Government	3
SPC	2600	Public Speaking***	3
AMH	2091	Introduction to African American History****	3
SLS	1101	First-Year Experience	3
Total			**32**

***S**tudent must earn at least a B and a C in ENC 1101 and ENC 1102. Student who fails to meet this requirement must earn a B or better in ENC 2300 Improving Writing.

** Alternate – HUM 2230 Historical Survey II.

***Alternates – SPC 1608/2608 Public Speaking or SPC 1050 Foundation of Speech or SPC 3051 Speech and Language Control.

****Alternate – AFA 3104 African-American Experience.

Sophomore Year

MMC	2920	Journalism Colloquium	1
JOU	1005	Language Skills for Media Professionals	3
GRA	1111	Principles of Graphic Design	3
GRA	1433	Basic Design and Web Applications	3
POS	2112	State and Local Government	3
JOU	2100	Reporting and Writing I	3
MMC	2000	Introduction to Mass Media	3
LIT	2110	Introduction to Literature*	3
PSY	2012	Introduction Psychology	3
SYG	2000	Introduction to Sociology	3
ARH	2000	Art Appreciation**	3
Total			**31**

*Alternate – LIT 2120 Introduction to Literature II.

** Alternates – MUH 3116 Jazz History or MUL 2111/2112 History of Music or CRW 3410 Creative Nonfiction or ENC 3320 Advanced Composition.

Broadcast Journalism Sequence

The broadcast journalism program is designed to prepare students for entry-level positions in broadcast journalism. Students who complete this sequence will be prepared to assume positions as television news reporter, associate producer, producer, and videographer.

Junior Year

JOU	3101	Reporting and Writing II	3
PGY	2101	Photo Foundations	3
RTV	3320	TV News I	3
MMC	4945	Internship	1
RTV	3234	Broadcast Announcing	3
MMC	4200	Communication Law	3
GEO	3421	Cultural Geography	3
AMH	2010	U.S. History*	3
ECO	2013	Principles of Economics I	3
Foreign Language and Lab			4
Foreign Language and Lab			4
Total			**33**

**Alternative – AMH 2020 U.S. History or AMH 4420 History of Florida.*

Senior Year

RTV	3322 **or**	TV News II or	3
JOU	4181	Public Affairs Reporting	
JOU	4341	Reporting and Writing III	3
MMC	4250	Leadership/Media Management	3
MMC	4922	Senior Capstone Colloquium	1
JOU	4945	Student Media Practicum	1
RTV	4331 **or**	Specialized Reporting or	3
JOU	3308	Magazine Article Writing	
MMC	4203	Media Ethics	3
PHI	2101	Introduction to Logic*	3
		Elective	3
		Elective	
Total			**29**

**Alternate – Introduction to Philosophy*

Public Relations Sequence

Students completing the requirements for the public relations program will be able to demonstrate the competencies needed in the increasingly complex profession of public relations. Students will gain mastery of the public relations process and its applications for non-profit, government, industry, agency or corporate public relations.

Freshman Year

ENC	1101	Freshman Communication Skills I	3
ENC	1102	Freshman Communication Skills I*	3
MGF	1106	Liberal Arts Math I	3
MGF	1107	Liberal Arts Math II	3
BSC	1005	Biological Sciences	3
EVR	1001	Fundamentals of Environmental Sciences	3
HUM	2211	Historical Survey I**	3
POS	2041	American National Government	3
SPC	2600	Public Speaking***	3
AMH	2091	Introduction to African American History****	3
CGS	2060	Introduction to Microcomputer	3
AML	2010	American Literature I or	3
AML	4610	Afro-American Novel	
SLS	1101	First-Year Experience	2
Total			**38**

*Student must earn at least a B and a C in ENC 1101 and ENC 1102. Student who fails to meet this requirement must earn a B or better in ENC 2300 Improving Writing.
** Alternate – HUM 2230 Historical Survey II.
***Alternates – SPC 1608/2608 Public Speaking or SPC 1050 Foundation of Speech or SPC 3051 Speech and Language Control.
****Alternate – AFA 3104 African-American Experience.

Sophomore Year

MMC	2920	Journalism Colloquium	1
JOU	1005	Language Skills for Media Professionals	3
GRA	1111	Principles of Graphic Design	3
GRA	1433	Basic Design and Web Applications	3
POS	2112	State and Local Government	3
JOU	2100	Reporting and Writing I	3
MMC	2000	Introduction to Mass Media	3
PUR	3000	Introduction to Public Relations	3
LIT	2110	Introduction to Literature*	3
PSY	2012	Introduction Psychology	3
SYG	2000	Introduction to Sociology	3
Total			**31**

*Alternate – LIT 2120 Introduction to Literature II.

Junior Year

JOU	3101	Reporting and Writing II	3
PGY	2101	Photo Foundations	3
PUR	3401	Critical Issues in Public Relations	3
MMC	4945	Internship	1
GEO	3421	Cultural Geography	3
AMH	2101	U.S. History*	3
ARH	2000	Art Appreciation**	3
		Foreign Language and Lab	4
		Foreign Language and Lab	4
Total			27

*Alternative – AMH 2020 U.S. History or AMH 4420 History of Florida.
** Alternates – MUH 3116 Jazz History or MUL 2111/2112 History of Music or CRW 3410 Creative Nonfiction or ENC 3320 Advanced Composition.

Senior Year

PUR	4500	PR Research & Strategies	3
JOU	4342	Reporting and Writing III	3
MMC	4250	Leadership/Media Management	2
MMC	4922	Senior Capstone Colloquium	1
PUR	4800	PR Campaigns	3
MMC	4203	Media Ethics	2
MAR	3023	Principles of Marketing	3
MAR	4323	Principles of Advertising	3
ECO	2013	Principles of Economics I	3
PHI	2101	Introduction to Logic*	3
		Elective	3
Total			**29**

Public Relations Sequence

Students completing the requirements for the public relations program will be able to demonstrate the competencies needed in the increasingly complex profession of public relations. Students will gain mastery of the public relations process and its applications for non-profit, government, industry, agency or corporate public relations.

Other Requirements

Students must earn at least a "C" grade in all core courses and respective sequence courses. No course can count more than once to satisfy degree requirement

Division of Graphic Communication

The Division of Graphic Communication offers a four-year curriculum leading to a Bachelor of Science in Graphic Design. The curriculum is designed primarily to prepare graduates for successful careers in graphic design, and allied industries. Focus is also given to students interested in teaching graphic design in junior colleges and with certification at vocational/secondary schools. The impact of graphic design on modern business and industry will be important for students studying art, architectural engineering, technology, journalism/communication, and other disciplines.

Retention

All students admitted as graphic design majors, having fulfilled the university admission requirements, must maintain a 2.0 GPA in all graphic design courses and earn a "C" grade in all graphic design electives. A full-time student must complete a minimum of 12 credit hours of academic work per semester.

Once established as a graphic design major, any student who falls below the 2.0 GPA in the major for more than two consecutive semesters will be placed on academic probation. A student placed on probation must meet with the retention committee, which will recommend to the Dean conditional reinstatement, full reinstatement or removal from the graphic design program.

General Education Requirements

Course	**Sem. Hrs.**
Communication Skills	6
Mathematics	6
Natural Sciences	6
Humanities	6
Social Sciences*	6
Speech	3
First Year Experience	2
Total	**35**

Graphic Design Secondary Emphasis (12 semester hours)

Any FAMU student may minor in graphic design by successfully completing a minimum of 18 semester hours in graphic design courses. All minors must receive approval from the Dean.

Capstone Project

Students are required to present a Capstone Project in Practicum I. The project includes a portfolio of the students' work accumulated during their years in in the School of Journalism & Graphic Communication. Majors must pass the capstone project requirements to graduate.

Transfer Credit

The Division of Graphic Communication may accept a maximum of six semester hours of graphic design credit from non-accredited graphics/graphic design programs, and up to 12 hours from accredited programs at the discretion of the Dean.

Graphic Communication

The graphic communication curriculum emphasizes the visual impact of business and industrial communications through a wide variety of reproduction methods for advertising, magazines, manuals, books, annual reports, newspapers, web design, social media plus other materials of considerable significance in today's contemporary society. Courses are designed to assist the student to understand the business and communication sides of graphic design, and to stimulate the student's potential for creativity through the usage of art and the development of design projects.

Bachelor of Science in Graphic Design

Freshman Year	**Sem. Hrs.**
SLS 1101 First year Experience	2
ENC 1101 Freshman Comm. Skills	3
ENC 1102 Freshman Comm. Skills	3
MGF 1106 Liberal Arts Math I	3
MGF 1107 Liberal Arts Math II	3
BSC 1005 Biological Science	3
PSC 1121 Intro to Physical Science	4
HUM 2211 Historical Survey	3
LIT 2110 Introduction to Literature	3
AMH 2091 Introduction to African American History	3
SYG 2000 Introduction to Sociology	3
SPC 2600/1050/3051 Public Speaking	3
Total	36

Sophomore Year	**Sem. Hrs.**
GRA 1433 Basic Computer Operations	3
CGS 2060 Introduction to Microcomputer	3
MMC 2000 Intro to Mass Media	3
JOU 1005 Language Skills for Media Professionals	3
GRA 1111Basic Design Principles	3
ART 1201 Design I Intro to Visual Arts	3
ART 2300 Drawing I	3
PGY 2401 Photo Foundations	3
GRA 1333 Graphic Arts Materials & Process	3
GRA 1206 Typography	3
Total	**30**

Junior Year	**Sem. Hrs.**
GRA 2508 Color & Color Theory	3
PGY 2110 Color Photography	3
GRA 4531 Advanced Typography	3
GRA 3102 Communication & Usability	3
GRA 3595 Brand Identity	3
GRA 3129 Time Based Design	3
GRA 3521 Internet Publishing and Research	3
GRA 4941 Design Practicum I (Advertising Design)	3
Total	**24**

Senior Year	**Sem. Hrs.**
PGY 4801 Electronic Still Photo	3
MAR 3023 Principles of Marketing	3
MAR 4323 Principles of Advertising	3
MMC 4200 Communication Law	3
MMC 4203 Media Ethics	3
GRA 4942 Design Practicum II	3
Secondary Emphasis	12
Total	**30**

Other Requirements

Students must earn at least a "C" grade in all core curriculum courses and respective sequence courses. No course may be counted more than once to satisfy degree requirement.

Course Descriptions

GRA 1111 Basic Design Principles (3) A lecture/lab course that concentrates on the exploration of graphic design elements and principles, in two-dimensional space. Solving practical design problems with library research, thumbnail sketches, rough layouts and comprehensives to industry standards.

GRA 1333 Graphic design Materials and Processes (3) This course provides students with a fundamental understanding of the printing industry as it relates to the field of graphic design. Information covers printing processes, pre-press operations, quality control, bindery operations and effective communication.

GRA 1433 Basic Computer Operations (3) This course introduces students to various software applications and computer hardware associated with the graphic design, web design, and graphic design industries.

GRA 2106 Typography (3) Introduction to the origins of written communication, typography, and the historical development of type fonts. This course further defines terminology and application

of typography as a communication tool. This course also introduces page layout and grids.

GRA 2508 Color and Color Theory (3) Prereq: GRA 1543, This course provides students with an understanding of color terminology, physics, and aesthetics and as a design element.

GRA 3102 Communication & Usability (3) This course, Communication & Usability, approaches visual communication from the user's perspective, which requires students to test their creations in addition to designing and developing them.

GRA 3139 Time Based Design (3) Time-Based Design, is intended to expose students to a more interpretive use of design elements, which can be applied in a variety of applications, e.g., film and television titles, movie previews, commercials, information kiosks, multimedia programs, web-sites, and presentations.

GRA 3512 Brand Identity (3) This course, Brand Identity Systems, is intended to expose students to the processes required to design a complete brand identity system for an existing or new business.

GRA 3521 Internet Publishing and Research (3) This course teaches graphic design skills and applications utilized in the visual **presentation of online communication and mobile apps.**

GRA 3921 Colloquium (1). This course is a professional development seminar deigned to prepare students for their individual career paths.

GRA 3935 Graphic Design Seminar (3) Prereq: Senior standing and consent of instructor. Special assignments are made by the instructor in the area of new equipment (including all generations of publishing systems) and products. Current articles and/or editorials regarding the graphic design industry. Work is submitted and critiqued by the instructor after which the critiques are shared with other members of the class to benefit all.

GRA 4531 Advanced Typography (3) Prereq: GRA 2106. Typography usage in design-composition and logo design; emphasizes matching type and message to achieve sophisticated, professional results. Advanced type handling and display usage.

GRA 4941 Design Practicum I (3) Prereq: GRA 1530, 1543, 3545, 4801 and/or permission of instructor. Designed to broaden skills and understanding in the production and supervision of all forms of artwork. Students work individually on projects tat employ the full range of professional design skills.

GRA 4942 Design Practicum II (3) Prereq: GRA 4941 and permission of instructor. Stresses supervised self-motivation, research ability and entry-level professional design skills. Students work closely with their supervisors in building a strong portfolio.

MMC 4945 Graphic Internship (1-6) Prereq: Permission of advisor and division director. Supervised field experience part/full-time affiliation as interns with state, government or private industry to gain practical and technical experience as it relates to students' major in the graphic design field.

PGY 2110 Color Photography (3) Prereq: PGY 2401. This course introduces students to color photographic theory, color management and visual communication.

PGY 2401 Photo Foundation (3) This course provides students with a fundamental understanding of photographic theory, in terms of camera handling, composition, digital workflow, creative problem-solving, presentation, and oral critiques.

PGY 3201 Photographic Lighting Techniques (3) Prereq: PGY 2401, 2110. Introduction to artificial and natural lighting techniques and theory. Projects are designed to teach students how to light glass, metal, and people.

PGY 3610 Photojournalism (3) Prereq: PGY 2101. This course teaches professional photography approaches to photographing news worthy events, environmental portraiture, sports, features, and photo essays. Emphasis is placed on ethics, accuracy and fair representation.

PGY 4801 Electronic Still Photography (3) Prereq: PGY 2401. Introduction to the uses and applications of digital photography, software and technique.

PGY 4810 Advanced Visual Media Concepts (3) Prereq: PGY 4801. Explores the application of mixing digital photography with various digital media.

JOU 1005 Language Skills for Journalists (2) Prereq: ENC 1101, 1102. Practice in the application of basic grammar principles needed to practice effective journalistic writing.

JOU 2920, 4922 Journalism Colloquium (1) Presentations by guest speakers and faculty on various topics and issues in journalism and mass communication.

JOU 3101 Newswriting and Reporting II (3) Prereq: JOU 1005, JOU 3110, MMC 2100. Reporting theory and practice as applied to newspapers with supervised practice in newswriting and reporting. With lab.

JOU 4181 Public Affairs Reporting (3) Prereq: JOU 3101. Newsgathering and presentation from government units, including public meetings and public records. With lab.

JOU 4944 Publications Practicum (1) Prereq: JOU 3101. Junior standing and permission. Student serves as news staff member on campus newspaper under direct supervision of faculty advisor.

MMC 2000 Introduction to the Mass Media (3) Prereq: Sophomore standing and successful completion of freshman composition courses. Survey of historical development and societal effects of modern mass media.

MMC 4200 Communication Law (3) Prereq: Junior standing. Study of legal parameters within which responsible media practitioners are expected to work.

MMC 4203 Media Ethics (2) Prereq: Junior standing. Study of the ethical parameters within which responsible media practitioners are expected to operate.

MMC 4930 Senior Seminar (2) Prereq: Junior standing and permission of Dean. Students work 20 hours per week as paid staff writers/reporters in a semester-long program at the Tallahassee Democrat under the supervision of an editor who also is an adjunct faculty member.

MMC 4945 Internship (1) Prereq: Permission of Dean. Supervised field experience at a newspaper, magazine, broadcast station, Public Relations agency or related organization. Students complete weekly journals and a report on the experience.

RTV 3234 Broadcast Announcing (3) Prereq: Junior Standing: JOU 3101, RTV 3304. Practical techniques for improving on-camera presentation.

RTV 3320 Television News (3) Prereq: JOU 3101; Coreq: RTV 3304. Writing and production of TV news stories against deadlines using ENG techniques.

Emphasis also given to ethical and legal matters in TV news. With lab.

RTV 3322 Advanced TV News (3) Prereq: RTV 3320. Practice in presenting news stories and mastering field and studio production techniques in TV news. With lab.

PUR 3000 Introduction to Public Relations (3) Prereq: JOU 3101. Fundamental theories and processes of public relations, tracing growth and development of this field to current and emerg-

ing practices. Application of Public Relations to corporations, government agencies, and service organizations.

PUR 3105 Public Relations Communications (3) Prereq: PUR 3000, JOU 3223. Applications of public relations process, including research, action, communication, and evaluation. Practice in producing brochures and pamphlets, newsletters, and annual reports for public. With lab.

PUR 4941 Public Relations Practicum (1) Prereq: PUR 3000, PUR 3105. Student serves 10 hours a week in voluntary public relations role, subject to instructor's approval, to gain experience in public relations activities.

Financial Assistance Program

All students are strongly encouraged to apply for federal and/or state financial aid through the FAMU Office of Student Financial Aid. The School of Journalism & Graphic design also administers a constantly growing scholarship endowment for students in journalism and graphic design. The nearly half million-dollar endowment provides several scholarships annually from interest earnings.

Minimum criteria for scholarships are 1100 SAT or 26 ACT scores and at least a 3.4 grade average. Scholarship criteria are usually adjusted annually. Scholarship applicants must have been admitted to FAMU and must have applied for other financial aid to be considered. Applicants must present portfolios of work and show proof of application for scholarships.

Applications for these scholarships are available through the university's new scholarship portal.

For more information, contact:

Office of the Dean
School of Journalism & Graphic Communication
510 Orr Drive, Suite 4003
Tallahassee, FL 32307-4800
850-599-3379

School of Nursing

The Florida A&M University School of Nursing was founded in 1904 and became the first baccalaureate nursing program in Florida. The undergraduate degree program is approved by the Florida State Board of Nursing. Both the baccalaureate and master's programs are accredited by the Accreditation Commission for Education in Nursing (ACEN).

The ACEN's address and telephone number are 3343 Peachtree Road NE, Suite 850, Atlanta, Georgia 30326, (404) 975-5000.

The mission of the School of Nursing is to:

1. Educate men and women to function as generalists at the undergraduate level and as specialists at the master's level in professional nursing;
2. Provide a supportive environment to foster research by faculty and students;
3. Be responsive to the service needs of the community.

Undergraduate Program

Upon completion of the undergraduate program, the graduate will be able to:

1. Evaluate knowledge and skills derived from the humanities, the natural and behavioral sciences, and nursing as a basis for making sound judgments and decisions.
2. Utilize the nursing process for promoting adaptation of humans along the health continuum and through the life span in a variety of client systems.
3. Function as a provider/coordinator of care, teacher, change agent, and client advocate in the delivery of safe and quality nursing care.
4. Communicate and collaborate effectively with client systems (individuals, families, groups, communities and populations) and the health care team to improve health outcomes.
5. Provide culturally competent and sensitive nursing care.
6. Demonstrate skills in using patient care technologies, information systems and communication devices that support quality and safe nursing practice.
7. Demonstrate scholarship for appraisal and application of evidence-based practice to improve nursing and health care.
8. Demonstrate basic knowledge of health care systems, health policies, finances, and regulatory environments including contemporary healthcare issues and trends.
9. Demonstrate leadership for promotion of safe quality care.
10. Demonstrate professional values and accept responsibility and accountability for safe nursing practice as well as for professional growth.

Faculty

Professors: Earp, Jaibun K; Graham, Mary E.
Associate Professors: Marshall, Janet G.; Norman, Ruena W., Onubogu, Uloma D.
Assistant Professors: Bronson, Sevilla; Daniels, Sheena, Phillips, Carswella
Instructors: Adams, Shawanna: Bryant, Brenda; Butler, Robin; Darity, Donna M.; Guthrie, David; Lawson, Delores B.

Baccalaureate Degree: Generic Program

The School of Nursing offers a professional level major in nursing that leads to a bachelor of science degree. The curriculum plan is designed in two phases: (1) pre-professional and (2) professional. Students may complete pre-professional requirements at a state college, community college, or another university.

Admission Requirements:

I. **Pre-Professional**

A. Admission to the university is within the purview of the office of admissions.
B. The length of time in the pre-professional level will vary with the educational background of the student. The student must complete pre-professional requirements before admission to the professional level.
C. Admission to Florida A&M University does not automatically admit one to the School of Nursing. The school, due to clinical limitations, is a limited access program.
D. See the catalog's Special Admissions' section for additional information.
E. Students seeking admission to the professional level must apply and be accepted to FAMU and satisfy all general education, Gordon Rule and foreign language requirements

II. Professional

All applicants must meet the following requirements stated under the School of Nursing admission criteria:

1. Obtain a minimum cumulative grade point average of 2.7 on a 4.0 scale, for all coursework attempted.
2. Complete all general education and science courses required by the School of Nursing.
3. Earn a grade of "C" or above in all required pre-professional courses.
4. Submit completed School of Nursing application and all other specified information by May 15 if applying for August admission; October 15 for January admission (see the School of Nursing application checklist on the School of Nursing's website for details). Incomplete applications will not be considered.
5. Provide one passport photograph.
6. Submit 3 letters of recommendation; two from instructors from previous college courses and one from an employer or a personal reference.
7. Present appropriate documentation of medical history, physical examination, labs (CBC and urinalysis), and tuberculosis test and/or chest X-ray. A state or military certificate of immunization status documenting immunity for measles-mumps-rubella (MMR), Hepatitis B (HBV), Varicella (Var), and diphtheria and tetanus toxoids and acellular pertussis (DTaP) or tetanus and diphtheria toxoids (Td) is required. If certification of immunization is not available, a titer is required.

A personal interview or pre-entrance screening may be required.

The school, due to clinical limitations, is a limited access program. Admission is determined by the availability of space, not the size of the applicant pool. Therefore, satisfaction of all requirements does not automatically lead to admission to the professional level.

Note: Foreign language requirements: Students who have not completed two years of the same foreign language or American Sign Language in high school must complete eight semester hours in the same foreign language prior to admission to the School of Nursing.

Progression, Retention, and Graduation

I. Academic

A. It is expected that all students are familiar with progression, retention, and graduation requirements.

B. All courses at the professional level must be completed with a grade of "C" or above. In addition, a proficiency examination must be passed with a grade of "C" (70) or above at the end of each theory course.

C. Completion of all courses with a minimum grade of "C" is a prerequisite for progression to the next semester's courses.

D. Two course failures (i.e. D or F grades) will result in dismissal from the School of Nursing. Neither a retroactive university withdrawal nor a university grade forgiveness invalidates a nursing course failure (i.e. D or F).

E. Effective August 2014, NUR 4935 (Nursing seminar) will be graded S-U and must be passed with a grade of "S". In order to receive "S", the NUR 4935 proficiency examination must be passed with an equivalent score at or above the 90th percent probability of passing the NCLEX-RN. In addition, every course requirement must be satisfactorily completed in order to earn the course grade of "S". Two "U" grades in NUR 4935 will result in dismissal from the SON. Neither a retroactive University withdrawal nor a University grade forgiveness invalidates a "U" grade.

F. Effective August 1, 2012, if a student enrolls in NUR 4935 (Nursing Seminar), having already earned a previous grade of "D" or "F" (failure) in NUR 4935, and earns a "U" (failure) in NUR 4935, that student will be permanently dismissed from the nursing program. Neither a retroactive university withdrawal nor a university grade forgiveness will invalidate this policy.

G. GPA must remain at a cumulative 2.00 or above.

H. The student may be requested to withdraw from a course or the program by reason of poor academic performance and /or inappropriate behavior as described in the university student handbook (FANG) and/or the School of Nursing handbook.

I. The School of Nursing adheres to all general requirements and procedures of the university for graduation.

J. A nursing student may order the school's pin during the last semester of the senior year. The pin is awarded after successful completion of the nursing program.

II. Clinical

A. Annual documentation of medical history, physical examination, and tuberculosis test and/or chest X-ray.

B. Changes in health status and relevant medical clearance each semester.

C. Documentation of current health care coverage is recommended.

D. Current BCLS CPR certification.

E. Prior to clinical and upon request, undergo a local and Level II background check and a lab controlled drug screen.

1. Students who receive a flagged positive background check or drug screening report may not be able to participate in required clinical rotations and may be unable to progress in the program.

2. Students with a flagged drug screen will be required to participate in the intervention program for nurses (The student is responsible for all associated costs).

F. Failure to provide all required documentation may prevent students from being cleared for clinical.

Clinical Activities

A variety of health care and educational agencies, located primarily in the Tallahassee-Leon County area, cooperate with the School of Nursing in providing clinical laboratory experiences for students. Included are primary, secondary, and tertiary care settings. Some clinical experiences may occur away from the university site in Tallahassee. Each student is expected to assume responsibility for all costs associated with clinical experiences.

The students wear the approved nursing uniforms during clinical experiences. Approximate cost of the uniform is $500. The uniform is ordered after acceptance to the professional level. Liability insurance is provided by the university upon admission of student to the professional level.

Bachelor of Science in Nursing
Curriculum Guide

Freshman Year	**Sem. Hrs.**
ENC 1101, 1102 Freshman Communicative Skills I & II	6
MAC 1105 College Algebra	3
BSC 1005 Biological Sciences with Lab**	4
HUM 2210 Historical Survey (or other approved humanities course)	3
*DEP 2004 Human Growth and Development or approved substitute course	3

*SYG 2000 Intro. to Sociology or approved substitute course	3
PSY 2012 Introduction to Psychology (satisfies a FAMU social science requirement)	3
*CHEM 1030 Introductory Chemistry for Non-Science Majors or approved substitute course	3
SLS 1101 First Year Experience Course (Student Life Skills) ***	2
Total	**30**

* Common Course Pre-Requisite
** Required of students who will enroll in BSC 2093/L at FAMU
*** Required of students who complete general education sequence at FAMU

Sophomore Year	**Sem. Hrs.**
*BSC 2093/Lab Anatomy and Physiology I with Lab or approved substitute course	4
*BSC 2094/Lab Anatomy and Physiology II with Lab or approved substitute course	4
*HUN 2401 Nutrition or approved substitute course	3
*MCB 3005C/Lab Microbiology or approved substitute course	4
*STA 2023 Intro. to Probability & Statistics or approved substitute course	3
Elective Recommendation: HSC 3531 Medical Terminology	3
Humanities Recommendation: PHI 2101 Introduction to Logic	3
AMH 2091 Introduction to African-American History or AFA 3104 African-American Experience***	3
Elective	2
Total	**29**

* Common Course Pre-Requisite
*** Required of students who complete general education sequence at FAMU

Junior Year	**Sem. Hrs.**
Semester I	
NUR 3125 Pathophysiology	3
NUR 3825 Introduction to Professional Nursing	2
NUR 3065 Health Assessment	2
NUR 3065L Practicum: Health Assessment	1
NUR 3118 Concepts of Health Promotion	3
NUR 3118L Practicum: Concepts of Health Promotion	2
Total	**13**

Semester II	**Sem. Hrs.**
NUR 3145 Pharmacology	3
NUR 3215 Nursing Process I	3
NUR 3215L Practicum: Nursing Process I	3
NUR 3165 Nursing Research	3
Total	**12**

Summer

Semester III	**Sem. Hrs.**
NUR 3837 Health Policy and Nursing	2
NUR 3455 Nursing Process III	3
NUR 3455L Practicum: Nursing Process III	2
NUR 3355 Nursing Process II	3
NUR 3355L Practicum: Nursing Process II	2
Total	**12**

Senior Year

Semester IV	**Sem. Hrs.**
NUR 4216 Nursing Process V	3
NUR 4216L Practicum: Nursing Process V	3
NUR 4535 Nursing Process IV	3
NUR 4535L Practicum: Nursing Process IV	3
Total	**12**

Semester V	**Sem. Hrs.**
NUR 4635 Nursing Process VI	3
NUR 4635L Practicum: Nursing Process VI	3
NUR 4945 Nursing Leadership and Management	2
NUR 4945L Practicum: Nursing Leadership and Management	2
NUR 4935 Nursing Seminar	2
	12
Total	**120**

Course Descriptions

NUR 3825 Introduction to Professional Nursing (2) Prereq: All pre-professional courses. The development of nursing as a profession is introduced and the practice of professional nursing is examined. **NUR 3118 Concepts of Health Promotion** (3) Prereq: All pre-professional courses. Introduction to utilization of the nursing process to facilitate health promotion for individuals of all ages responding to stimuli. **NUR 3118L Practicum: Concepts of Health Promotion** (2) Prereq: All pre-professional courses. Introduces the utilization of the nursing process to facilitate health promotion for individuals of all ages responding to stimuli. Students will have experiences in day care centers, schools, health centers, senior citizen centers and with health fairs. **NUR 3065 Health Assessment** (2) Prereq: All pre-professional courses. Provides a framework for comprehensive health assessment of individuals across the life span. Includes content and techniques related to eliciting and recording a health history and performing a complete physical examination. **NUR 3065L Practicum: Health Assessment** (1) Prereq: All pre-professional courses. Provides a framework for comprehensive health assessment of individuals across the life span. Includes content and techniques related to eliciting and recording a health history and performing a complete physical examination. Initial practice is with peers in a supervised laboratory setting. Further application occurs within the clinical setting in practicum courses. **NUR 3125 Pathophysiology** (3) Prereq: All pre-professional courses. Focuses on the pathogenesis of human disease as a consequence of abnormalities and alterations of normal physiological functions. The course will be based on a molecular and cellular framework aimed at exploring regulatory and compensatory mechanisms used at the cellular level by the body to resort homeostasis in response to changes in the internal and external environment.

NUR 3145 Pharmacology (3) Prereq: All first semester junior year courses. Focuses on the study of the effects of drugs on individuals experiencing adaptive and maladaptive states of health. Nursing implications are incorporated.
NUR 3215 Nursing Process I (3) Prereq: All first semester junior year courses. Focuses on the utilization of the nursing process to facilitate adaptation of adults experiencing commonly occurring and multiple stimuli.
NUR 3215L Practicum: Nursing Process I (3) Prereq: All first semester junior year courses. Emphasizes the utilization of the nursing process to facilitate adaptation of adults experiencing commonly occurring and multiple stimuli. Students will have experiences in primary care, acute care, and extended care facilities.
NUR 3165 Nursing Research (3) Prereq: All first semester junior year courses. Will develop selected competencies necessary to critically read, evaluate and interpret findings of research studies important to the practice of professional nursing. Focus is on understanding the research process and applying research findings to nursing practice.
NUR 3455 Nursing Process III (3) Prereq: All first and second semester junior year courses. Focuses on the utilization of the nursing process to promote adaptation of women and child bearing families. The course emphasizes the nursing care of clients in adaptive as well as maladaptive states of health during the prenatal, labor and delivery, and postpartum period.
NUR 3455L Practicum: Nursing Process III (2) Prereq: All first and second semester junior year courses. Focuses on the utilization of the nursing process to promote adaptation of women and child bearing families. The course emphasizes the nursing care of clients in adaptive as well as maladaptive states of health during the prenatal, labor and delivery, and postpartum period. Students will have experiences in prenatal clinics, labor and delivery, and postpartum units.
NUR 3355 Nursing Process II (3) Prereq: All first and second semester junior year courses. Focuses on the utilization of the nursing process to promote biopsychosocial adaptation of children and families experiencing commonly occurring and multiple stimuli. The course emphasizes the nursing care of clients in adaptive as well as maladaptive states of health during childhood.
NUR 3355L Practicum: Nursing Process II (2) Prereq: All first and second semester junior year courses. Focuses on the utilization of the nursing process to promote biopsychosocial adaptation of children and families experiencing commonly occurring and multiple stimuli. The course emphasizes the nursing care of clients in adaptive as well as maladaptive states of health during childhood. Students will have experiences in primary, secondary and tertiary health care settings.
NUR 3837 Health Policy and Nursing (2) All first and second semester junior year courses. Provide an understanding of the significance of health policy, finances and regulatory environments in nursing. Emphasis will be on acquiring knowledge and skills related health policy-making process, successful implementation and evaluation of the health policy in relation to financing.
NUR 4535 Nursing Process IV (3) Prereq: All junior year courses. Stresses the utilization of the nursing process to facilitate adaptation of individuals, their families, and groups experiencing emotional, psychiatric, and psychophysiological stimuli.
NUR 4535L Practicum: Nursing Process IV (3) Prereq: All junior year courses. Focuses on the utilization of the nursing process to facilitate adaptation of individuals, their families, and groups experiencing emotional, psychiatric, and psychophysiological stimuli. Students will have experiences in acute care, long-term care, and outpatient facilities.
NUR 4216 Nursing Process V (3) Prereq: All junior year courses. Focuses on the utilization of the nursing process to facilitate adaptation of adults and their families experiencing multiple and complex interacting stimuli.
NUR 4216L Practicum: Nursing Process V (3) Prereq: All junior year courses. Focuses on the utilization of the nursing process to facilitate adaptation of adults and their families experiencing multiple and complex interacting stimuli. Students will have experiences in acute care, rehabilitation, and home health care agencies.
NUR 4635 Nursing Process VI (3) Prereq: All junior year courses and all first semester senior year courses. Provides instruction on the utilization of the nursing process to facilitate adaptation of individuals, families, groups, communities and populations. Focuses on levels of prevention, epidemiology, planning and program implementation to meet community health needs. The course is offered in seven and a half weeks period.
NUR 4635L Practicum: Nursing Process VI (3) Prereq: All junior year courses and all first semester senior year courses. Focuses on the utilization of the nursing process to facilitate adaptation of individuals, families, groups, communities and populations. Focuses on levels of prevention, epidemiology, planning and program implementation to meet community health needs. Students will have clinical experiences in primary care clinics, health maintenance organizations, and public health settings. The course is offered in seven and a half weeks period.
NUR 4945 Nursing Leadership and Management (2) Prereq: All junior year courses, first semester senior year courses, NUR 4635 and NUR 4635L. Teaches the theories and principles of leadership and management which provide the foundation for professional nurse's role as a leader and change agent. Emphasis will be placed on knowledge and skills necessary to assume first line leadership/management positions in a variety of settings. Students will examine their own leadership styles and philosophies of nursing management. The course is conducted in a concentrated period, i.e., over one to two weeks.
NUR 4945L Practicum: Nursing Leadership and Management (2) Prereq: All junior year courses, first semester senior year courses and NUR 4945. Focuses on the theories and principles of leadership and management which provide the foundation for professional nurse's role as a leader and change agent. Emphasis on knowledge and skills necessary to assume first line leadership/management positions in a variety of settings. Students will examine their own leadership styles and philosophies of nursing management. Students will have experiences as leaders and managers in a variety of health care settings. The course is offered over a concentrated 80 hour period.
NUR 4935 Nursing Seminar (2) Prereq: All junior year courses and all first semester senior year courses. Provides professional socialization by focusing on behaviors to facilitate transition from nursing student to professional nurse. Extensive, independent review of previous course content is required to demonstrate successful synthesis of essential concepts and principles necessary for the safe and efficient delivery of professional nursing care. A senior proficiency examination evaluates the achievement of synthesis of essential concepts and principles within the professional knowledge base. The senior proficiency examination is administered after the student has suc-

cessfully passed all other second semester senior year courses.

Baccalaureate Degree: RN-BSN Program

Baccalaureate Degree: RN-BSN Program: The RN-BSN program is specifically designed for registered nurses who desire to obtain a bachelor of science degree. It offers flexible options for the educational needs of the registered nurse. The course work is structured to enhance the breadth and depth of previous education for the changing medical/health environment.

Admission Criteria

- Official transcripts showing associate degree in nursing from an ACEN accredited program;
- A copy of current valid, unrestricted, unencumbered registered nurse (RN) license from the state in which the applicant is practicing. License is to be kept current during the program;
- Official transcripts from college(s) previously attended; and
- Completion of required 60 hours of general education and prerequisite course work with grade of "C" or above.

The required state common prerequisite courses(*) are:

Course(s)	Sem. Hrs.
BSC X093/X093L Anatomy and Physiology I with/Lab*	4
BSC X094/X094L Anatomy and Physiology II with/Lab*	4
CHM X000 Chemistry*	3
DEP X004 Human Growth and Development*	3
HUN X201 Nutrition*	3
MCB X010/X010L Microbiology*	4
PSY XXXX Introduction to Psychology **OR**	3
SYG XXXX Introduction to Sociology **OR**	
SOP XXXX Social Psychology*	
STA X014 Introduction to Probability & Statistics*	3

*These are state common prerequisites substitutes identified in the state Common Prerequisite Manual at www.flvc.org. Other identified courses are also accepted.

- Completion of two (2) sequential courses of foreign language in high school or sequential 8-10 semester hours at the post-secondary level, or approved alternate methods for demonstrating competence.
- A minimum cumulative GPA of 2.7 on a 4.0 scale, for all coursework attempted.
- Appropriate documentation of medical history, physical examination, labs (CBC, and urinalysis), and tuberculosis test and/or chest X-ray. A state or military certificate of immunization status documenting immunity for measles-mumps-rubella (MMR), Hepatitis B (HBV), Varicella (Var.), and diphtheria and tetanus toxoids and acellular pertussis (DTaP) or tetanus and diphtheria (Td) is required. If certification of immunization is not available, a titer is required.
- Current American Heart Association BCLS CPR certification.
- Admission to the university.
- Submission of a completed School of Nursing application packet. The packet must include required application, essay of professional goals, official transcripts, a passport photograph, and three (3) letters of recommendation and all required medical documentation (see School of Nursing application checklist on the School of Nursing website for details).

Admission to the program takes place only in the fall semester.

After admission, each student is required to undergo a Level II background check and a lab-controlled drug screen. Local background check may be required by select agencies.

Graduation Requirements

A completion of 30 credit hours is required for the baccalaureate degree from FAMU. Students who already have an RN license must meet this requirement to be eligible for graduation with a BSN. The required courses are:

Course(s)	Sem. Hrs.
NUR 3125 Pathophysiology	3
NUR 3825 Introduction to Professional Nursing	2
NUR 3065 Health Assessment	2
NUR 3065L Practicum: Health Assessment	1
NUR 3165 Nursing Research	3
NUR 4635 Nursing: Process VI	3
NUR 4635L Practicum: Nursing Process VI	3
NUR 3837 Health Policy and Nursing	2
NUR 4945 Nursing Leadership/Management	2
NUR 4945L Practicum: Nursing Leadership/Mngmt	2
NUR 3905 Directed Individual Study	4
Free electives	3

The program may be completed in three (3) semesters.

Note: Sixty (60) hours must be earned at a senior institution. The final 30 hours must be taken at FAMU. A student who transfers with less than 60 credits upon admission must earn nine (9) credit hours prior to graduation by attending one or more summer terms.

Master of Science in Nursing

The FAMU School of Nursing offers the Master of Science degree with emphasis in (1) Adult Gerontology Primary Care Nurse Practitioner (AGPCNP) and (2) Women's Health Nurse Practitioner (WHNP) preparation as both on-site and on-line programs. The master's program prepares nurses with the knowledge base and practice experiences necessary for advanced practice in primary health care with adults across the life span. The program can be completed in five semesters of full time study.
NOTE: The Women's Health Nurse Practitioner Program is temporarily suspended.

Program Learning Outcomes

1. Synthesize knowledge from the sciences, humanities, best evidence and nursing to support advanced practice nursing.
2. Utilize leadership skills to foster collaboration, change, and advocacy to influence advanced practice nursing and improve health care.
3. Use best available evidence to implement initiatives to continuously improve quality and safety in health care.
4. Integrate evidence, clinical guidelines, and clinical

investigative skills to guide advanced practice nursing and improve health outcomes.
5. Utilize appropriate technologies and information literacy skills to optimize health outcomes in advanced practice nursing.
6. Demonstrate an understanding of the development, analysis, and evaluation of health policies and health care affecting advanced practice nursing and health outcomes.
7. Analyze complex health systems to improve the delivery of care and patient outcomes.
8. Apply ethical principles in decision-making to achieve sound solutions to issues related to individuals, populations and systems of care.
9. Demonstrate accountability and responsibility for patient-centered care and professional development.
10. Provide competent evidence-based advance practice nursing care within a primary care setting to diverse individuals, families and groups and manage heath and illness for adults across the life span.

Faculty
Professors: Earp, Jaibun K.; Graham, Mary E.
Associate Professors: Marshall, Janet; Norman, Ruena W.; Onubogu, Uloma
Assistant Professors: Daniels, Sheena; Phillips, Carswella.

Adult Gerontology Primary Care Nurse Practitioner (AGPCNP) Program

The Adult Gerontology Primary Care Nurse Practitioner (AGPCNP) Program prepares nurses for advanced practice with young adults, adults, and older adults in primary care. The focus of the AGPCNP is to provide patient-centered care by employing evidence-based practice designed to improve quality of care and health outcomes. The AGPCNP program builds upon the base of the FAMU School of Nursing's Baccalaureate Program and the following graduate core courses: NGR 6740 Professional Role Development; NGR 5110 Theories in Nursing; NGR 5810 Research Methods and Evidence-Based Practice; NGR 6891 Health Policy and Nursing; NGR 5742 Role of APN in Health Promotion & Disease Prevention; NGR 5209 Clinical Management of Older Adults; NGR 6291 Special Issues Across the Adult Life Span.

The graduates of this program are eligible to sit for either the American Nurses Credentialing Center (ANCC) National Certification Examination or the American Academy of Nurse Practitioner Certification Program's (AANPCP) Certification Examination for AGPCNP and apply for licensure as an Advanced Registered Nurse Practitioner. FAMU School of Nursing Graduate Program AGPCNP competencies are consistent with the NP

Competencies of the National Organization of Nurse Practitioner Faculties (NONPF[2012]) and the AGPCNP Competencies of the American Association of Colleges of Nursing (AACN [2010]), which can be found at the following websites:

http://www.nonpf.com/associations/10789/files/NPCoreCompetenciesFinal2012.pdf

http://www.aacn.nche.edu/geriatric-nursing/adultgeroprimcareNPcomp.pdf

Women's Health Nurse Practitioner (WHNP)

The Women's Health Nurse Practitioner (WHNP) program prepares graduates to provide primary care services to women throughout their lifespan. The program focuses on health care to women across the life cycle with emphasis on conditions unique to women from menarche through the remainder of their life cycle within the context of socio-cultural environments: interpersonal, family and community. In providing care, the WHNP considers the inter-relationship of gender, social class, culture, ethnicity, sexual orientation, economic status and socio-political power differentials.

The WHNP program builds upon the base of the FAMU School of Nursing's Baccalaureate Program and the following graduate core courses: NGR 6740 Professional Role Development; NGR 5110 Theories in Nursing; NGR 5810 Research Methods and Evidence-Based Practice; NGR 6891 Health Policy and Nursing; NGR 5742 Role of APN in Health Promotion & Disease Prevention; NGR 5209 Clinical Management of Older Adults; NGR 6291 Special Issues Across the Adult Life Span.

The graduate of this specialty is eligible to sit for the National Certification Corporation (NCC) certification examination as a Women's Health Nurse Practitioner (WHNP) and can apply for licensure as an Advanced Registered Nurse Practitioner.

Competencies of the graduate of the Women's Health Nurse Practitioner are consistent with the NP Competencies of the National Organization of Nurse Practitioner Faculties (NONPF[2012]) and WHNP Competencies of the American Association of Colleges of Nursing (AACN [2010]), as well as the WHNP Competencies of the National Association of Nurse Practitioners in Women's Health (NPWH). These competencies are found at:

http://www.npwh.org/files/public/WHNP_EducGuide_finalOct.pdf and
http://www.ncccwebsite.org/resources/docs/2014-2hnp-candidate_guide.pdf

Admission Requirements: Master's Program

Graduate School

To be eligible for admission to the School of Nursing, the applicant must first meet the School of Graduate Studies and Research (SGSR) admission requirements that are listed in the graduate

section of this catalog. Admission requirements for the on-line program are identical to the on-ground program.

School of Nursing

To be eligible for admission to the program, applicants must meet the following admission requirements:

1. Baccalaureate degree with a major in nursing from a nationally accredited program (ACEN or CCNE).
2. Current, valid, unrestricted and unencumbered registered nurse (RN) license in the State of Florida or current RN license from the state which the applicant is practicing.
3. Grade point average of 3.0 or above in all work attempted in the last 60 hours of the baccalaureate degree (If a student has a graduate degree, the GPA requirement can apply to the graduate school GPA).
4. Graduate Record Examination (GRE).
5. Minimum score of 300 on the quantitative-verbal sections of the Graduate Record Examination, if the undergraduate GPA is less than 3.0.
6. Undergraduate course credits for statistics and health assessment.
7. Identification of a qualified available clinical preceptor (s), i.e. nationally certified nurse practitioners in adult, gerontology, women's health or a licensed physician (on-line program students only).
8. Three professional references.
9. Documentation of current physical examination with labs (CBC and urinalysis) and tuberculosis test and/or chest x-ray. A state or military certificate of immunization status documenting immunity for measles, mumps-rubella (MMR), hepatitis B (HBV), varicella (Var.) and diphtheria and tetanus toxoids and acellular pertussis (DTaP) or tetanus and diphtheria (Td) is required. If certification of immunization is not available, a titer is required.
10. Proficiency in use of computers.
11. A statement of professional goals (please indicate your specialty track of interest).
12. Foreign applicants (TOEFL>550).

Requirements After Admission:

The following requirements must be kept current annually (mandated by clinical agencies):

1. The state RN License must be kept current during the entire matriculation.
2. Evidence of nurse practitioner student professional liability insurance.
3. CPR certification.
4. Documentation of current medical history, physical examination, and tuberculosis skin test or chest X-ray.
5. Level II background check and a lab-controlled drug screen. (Local background check may be required by an agency)

Curriculum: MSN

The graduate program offers a master of science in nursing (MSN) degree in clinical specialties of Adult Gerontology Primary Care Nurse Practitioners (AGPCNP) and Women's Health Nurse Practitioners (WHNP). The master's program prepares nurses with the knowledge base and practice experiences necessary for advanced practice in primary health care with young adults, adults, and older adults as well as women throughout their life span. The curriculum leading to the master of science in nursing (MSN) degree can be completed through full-time or part-time study. The program can be completed in five semesters of full-time study. Full-time requires a minimum of nine (9) hours during the regular academic semesters and six (6) hours during the summer. Based upon the FAMU graduate school policy, a maximum of five (5) consecutive calendar years, from date of first enrollment, is allowed for completion of all degree requirements. Full time students are admitted only in the fall semester. Upon admission to the program, the student is assigned a faculty advisor who collaboratively develops an individualized degree plan of study, based on full or part-time status. The graduate curriculum is based on a three core structure: graduate core; advanced practice registered nurse (APRN) core; and population foci/role core (See Graduate Curriculum Core Structure).

Graduate Curriculum Core Structure

Graduate Core	**Sem. Hrs.**
NGR 6740 Professional Role Development	1
NGR 5110 Theories in Nursing	2
NGR 5810 Research Methods & Evidence-based Practice	3
NGR 6891 Health Policy and Nursing	2
NGR 5742 Role of APN in Health Promotion & Disease Prevention	3
NGR 5209 Clinical Management of Older Adults	3
NGR 6291 Special Issues Across the Adult Life Span	2
Total	**16**

APRN Core

NGR 5141 Advanced Pathophysiology	3
NGR 5172 Advanced Pharmacology	3
NGR 5003C Advanced Health Assessment Theory	3
NGR 5003L Advanced Health Assessment Practicum	1
Total	**10**

Population Foci/Role Core

NGR 6201 Primary Care for Adults Across the Life Span I	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6202 Primary Care for Adults Across the Life Span II (AGPCNP) **OR** NGR 6347 Advanced Women's Health Theory (WHNP)	3
NGR 6202L Primary Care for Adults Across the Life Span Practicum II (AGPCNP) **OR** NGR 6347L Advanced Women's Health Practicum (WHNP)	4
NGR 6700 APRN Synthesis Seminar	2
Total	**42**

The credit to clock hour ratio is 1:1 for theory courses and 1:6 for clinical. The total number of semester hours is 42. The total number of clinical clock hours is 675 hours excluding the advanced health assessment practicum hours. The graduate core and APRN Core courses must be completed before progression to population foci/role core courses.

Full Time MSN Curriculum Plan For AGPCNP and WHNP

Fall	**Sem. Hrs.**
NGR 6740 Professional Role Development	1
NGR 5110 Theories in Nursing	2
NGR 5141 Advanced Pathophysiology	3
NGR 5172 Advanced Pharmacology	3
Total	**9**

Spring	**Sem. Hrs.**
NGR 5810 Research Methods and Evidence-Based Practice	3
NGR 6891 Health Policy and Nursing	2
NGR 5003C Advanced Health Assessment Theory	3
NGR 5003L Advanced Health Assessment Practicum	1
Total	**6**

Summer	**Sem. Hrs.**
NGR 5742 Role of APN in Health Promotion & Disease Prevention	3
NGR 5209 Clinical Management of Older Adults	3
Total	**6**

Fall	**Sem. Hrs.**
NGR 6201 Primary Care for Adults Across the Life Span I	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6291 Special Issues Across the Adult Life Span	2
Total	**9**

Spring	**Sem. Hrs.**
NGR 6202 Primary Care for Adults Across the Life Span II (AGPCNP Track) **OR**	3
NGR 6347 Advanced Women's Health Theory (WHNP Track)	
NGR 6202L Primary Care for Adults Across the Life Span Practicum II **OR** NGR 6347L Advanced Women's Health Practicum	4 3
NGR 6700 APRN Synthesis Seminar	2
Total	**9**
Total Curriculum	**42**

Part-Time Curriculum Plan for AGPCNP and WHNP

Semester 1 (Fall)	**Credit Hours**
NGR 5110 Theories in Nursing	2
NGR 6740 Professional Role Development	1

Semester 2 (Spring)	
NGR 6891 Health Policy and Nursing	2
NGR 5810 Research Methods and Evidence-based Practice	3

Semester 3 (Fall)	
NGR 5141 Advanced Pathophysiology	3
NGR 5172 Advanced Pharmacology	3

Semester 4 (Spring)	
NGR 5003 Advanced Health Assessment Theory	3
NGR 5003L Advanced Health Assessment Practicum	1

Semester 5 (Summer)	
NGR 5742 Role of APN in Health Promotion & Disease Prevention	3
NGR 5209 Clinical Management of Older Adults	3

Semester 6 (Fall)	
NGR 6201 Primary Care for Adults across the Life Span I	3
NGR 6201L Primary Care for Adults across the Life Span Practicum I	4
NGR 6291 Special Issues Across the Adult Life Span	2

Semester 7 (Spring)	
NGR 6202 Primary Care for Adults across the Life Span II (AGPCNP Track) **OR**	3
NGR 6347 Advanced Women's Health Theory (WHNP Track)	
NGR 6202L Primary Care for Adults across the Life Span Practicum II (AGPCNP Track) **OR**	4
NGR 6347L Advanced Women's Health Practicum (WHNP Track)	
NGR 6700 APRN Synthesis Seminar	2
Total Curriculum	**42**

Post-Master's Certificate (PMC) Program

The Florida A&M University School of Nursing master's program provides post-master's certificate (PMC) program for both non-advanced practice nursing (Non-APN) master's graduates and APN master's graduates who want to become AGPCNP. Non-APN graduates are those who hold master's degree in a non-advance practice nursing role such as nursing education or nursing administration. APN graduate applicants are those who have master's degree in nursing with national certification as a clinical nurse specialist (CNS), certified nurse midwife (CNM), certified registered nurse anesthetist (CRNA) or NP in other specialties such as pediatric nurse practitioner or neonatal nurse practitioner.

A. Non-APN Applicant

A total of five (5) credit hours will be awarded for non-APN master's graduate applicants and they must complete 37 credits at FAMU. PMC admission requirements and curriculum for Non-APN applicant are listed below:

B. APN Applicant

For APN prepared master's graduate applicants, up to 21 credits may be awarded based on grade and recency of the courses taken. The courses credited are those taken within the past five of years of admission and grade of B and above. PMC admission requirements and curriculum for APN applicant are listed below:

Both Non-APN and APN master's graduate applicants must complete all of the fourth and fifth semester Population Foci/ Role Core courses at FAMU with 675 clinical hours.

Admission Requirements: Post-Master's Certificate (PMC) Program

Graduate School

To be eligible for admission to the School of Nursing, the applicant must first meet the School of Graduate Studies and Research (SGSR) admission requirements that are listed in the graduate section of this catalog. Admission requirements for the on-line program are identical to the on-ground program.

Admission Requirements: Post-Master's Certificate (Non-APN Applicant)

1. Master's degree in nursing from a nationally accredited program (ACEN or CCNE)
2. Current valid, unrestricted, unencumbered registered nurse (RN) in the state of Florida or current license from the state in which the applicant is practicing. License is to be kept current during the program.
3. Graduate GPA 3.0 or above in all work attempted in the master's degree program.
4. Identification of qualified available clinical preceptor(s), i.e. nationally certified nurse practitioners in Adult, Gerontology, Women's Health or licensed physician (on-line students only).
5. Three professional references
6. Documentation of current physical examination, labs (CBC and urinalysis), and tuberculosis test and/or chest X-ray. A state or military certificate of immunization status documenting immunity for measles- mumps-rubella (MMR), Hepatitis B (HBV), Varicella (Var.), and diphtheria and tetanus toxoids and acellular pertussis (DTaP) or tetanus and diphtheria toxoids (Td) is required. If certification of immunization is not available, a titer is required.
7. Proficiency in use of computers.
8. Statement of professional goals (Please indicate your specialty track of interest).
9. Foreign applicant (TOEFL>550)

Requirements After Admission

1. The state RN license must be kept current annually (mandated by the clinical agencies).
2. Professional NP liability insurance
3. Current CPR certification
4. Documentation of current medical history, physical examination, and tuberculosis skin test or chest X-ray.
5. Level II background check and a lab-controlled drug screen. (Local background check may be required by an agency).

Curriculum: Post-Master's Certificate (Non-APN Applicant)
Courses waived based on earned master's degree in nursing

Course(s)	Sem. Hrs.
NGR 5110 Theories in Nursing	2
NGR 5810 Research Methods & Evidence-based Practice	3
Total	**5**

Courses that Must Be Taken at FAMU*	Sem. Hrs.
NGR 5141 Advanced Pathophysiology	3
NGR 6891 Health Policy and Nursing	2
NGR 6740 Professional Role Development	1
NGR 5742 Role of APN in Health Promotion & Disease Prevention	3
Total	**9**

APRN Core

NGR 5003C Advanced Health Assessment Theory	3
NGR 5003L Advanced Health Assessment Practicum	1
NGR 5172 Advanced Pharmacology	3
Total	**7**

Population Foci: Adult Gerontology Primary Care Track (AGPCNP)

NGR 5209 Clinical Management of Older Adults	3
NGR 6291 Special Issues Across the Adult Life Span	2
NGR 6201 Primary Care for Adults Across the Life Span	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6202 Primary Care for Adults Across the Life Span II	3
NGR 6202L Primary Care for Adults Across the Life Span Practicum II	4
NGR 6700 APRN Synthesis Seminar	2
Total	**21**
Total Curriculum	**42**

OR

Population Foci: Women's Health (WHNP)

Courses	Sem. Hrs.
NGR 5209 Clinical Management of Older Adults	3
NGR 6291 Special Issues Across the Adult Life Span	2
NGR 6201 Primary Care for Adults Across the Life Span	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6347 Advanced Women's Health Theory	3
NGR 6347L Advanced Women's Health Practicum	4
NGR 6700 APRN Synthesis Seminar	2
Total	**21**
Total Curriculum	**42**

Admission Requirements: Post-Master's Certificate (APN Applicant)

1. Master's degree in nursing from a nationally accredited program (ACEN or CCNE)
2. Current valid, unrestricted, unencumbered registered nurse (RN) in the state of Florida or current license from the state in which the applicant is practicing. License is to be kept current during the program.
3. Evidence of current practice as APN (NP, CRNA, CNM, CNS) or of maintenance of national certification.
4. Graduate GPA 3.0 or above in all work attempted in the master's degree program.
5. Identification of qualified available clinical preceptor(s), i.e. nationally certified nurse practitioners in adult, gerontology,

women's health or a licensed physician (on-line students only).
6. Three professional references
7. Documentation of current physical examination, labs (CBC and urinalysis), and tuberculosis test and/or chest X-ray. A state or military certificate of immunization status documenting immunity for measles-mumps-rubella (MMR), hepatitis b (HBV), Varicella (Var.), and diphtheria and tetanus toxoids and acellular pertussis (DTaP) or tetanus and diphtheria toxoids (Td) is required. If certification of immunization is not available, a titer is required.
8. Proficiency in use of computers.
9. Statement of professional goals (please indicate your specialty track of interest)
10. Foreign applicant (TOEFL>550)

Requirements After Admission

1. The state RN license must be kept current annually (mandated by the clinical agencies).
2. Professional NP liability insurance
3. Current CPR certification
4. Documentation of current medical history, physical examination, and tuberculosis skin test or chest X-ray
5. Level II background check and a lab-controlled drug screen (Local background check may be required by an agency).

CURRICULUM: Post-Master's Certificate (APN Applicant)
Courses Waived based on earned master's degree in nursing

Course(s)	Sem. Hrs.
NGR 5110 Theories in Nursing	2
NGR 5810 Research Methods & Evidence-based Practice	3
Total	**5**

Courses credited from previous master's program based on grade of >B and within five (5) years

NGR 5141 Advanced Pathophysiology	3
NGR 6891 Health Policy and Nursing	2
NGR 6740 Professional Role Development	1
NGR 5742 Role of APN in Health Promotion & Disease Prevention	3
Total	**9**

Advanced Practice Core

NGR 5003C Advanced Health Assessment Theory*	3
NGR 5003L Advanced Health Assessment Practicum*	1
NGR 5172 Advanced Pharmacology*	3
Total	**7**

**Individual assessment of classes and education will determine if courses are needed or waived.*

Courses That Must Be Taken At FAMU*
Population Foci: Adult Gerontology Primary Care Track (AGPCNP)

NGR 5209 Clinical Management of Older Adults	3
NGR 6291 Special Issues Across the Adult Life Span	2
NGR 6201 Primary Care for Adults Across the Life Span	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6202 Primary Care for Adults Across the Life Span II	3
NGR 6202L Primary Care for Adults Across the Life Span Practicum II	4
NGR 6700 APRN Synthesis Seminar	2
Total	**21**
Total Curriculum	**42**

OR

Population Foci: Women's Health (WHNP)

Course(s)	Sem. Hrs.
NGR 5209 Clinical Management of Older Adults	3
NGR 6291 Special Issues Across the Adult Life Span	2
NGR 6201 Primary Care for Adults Across the Life Span	3
NGR 6201L Primary Care for Adults Across the Life Span Practicum I	4
NGR 6347 Advanced Women's Health Theory	3
NGR 6347L Advanced Women's Health Practicum	4
NGR 6700 APRN Synthesis Seminar	2
Total	**21**
Total Curriculum	**42**

Note: Curriculum plan for Non-APN Applicant and APN Applicant in the Post-Master's Certificate program will be individually developed based on accepted credits.

Course Descriptions

NGR 5110 Theories in Nursing (2) This course employs science-based theories and concepts to build the philosophical and theoretical bases for nursing practice. It includes the study and critique of mid-range nursing theories and theories from related disciplines. The interrelationships between nursing theory, research, and practice are emphasized. This course also assists the student with integrating nursing science to explain the nature and significance of health and health care delivery phenomena as well as develop a conceptual framework for future practice and research.

NGR 6740 Professional Role Development (1) In this course, the student will examine organizational and professional challenges experienced by advanced practice nurses as well as the strategies for effective integration and management. Theoretical frameworks including APRN Consensus Model and issues that influence role behaviors in advanced nursing practice will be examined. Roles as researcher, leader, consultant and educator will also be included.

NGR 5141 Advanced Pathophysiology (3) Pre- or co-requisites: NGR 5110, NGR 6740, NGR 5172 or special approval. This course focuses on the relationship between physiology and pathology across the lifespan to explain the scientific basis of advanced practice nursing. Structural and functional changes in cells, tissues and organs that formulate the mechanisms of underlying disease and clinical manifestations are explored as foundations are built for future clinical decision-making in a variety of clinical

settings. The pathogenesis of disease as related to principles of health promotion and disease prevention will contribute to future APRN practice.

NGR 5172 Advanced Pharmacology (3) Pre- or co-requisites: NGR 5110, NGR 6740, NGR 5141 or special approval. This course provides a pharmacological base for advanced practice with primary care clients across the adult lifespan. Evidence-based clinical management of commonly occurring health problems with selected pharmacologic agents is emphasized. Therapeutic agents are compared and contrasted for indications, efficacy, monitoring parameters, dosing principles, adverse effects, and common drug interactions. Other topics include client education needs, special population issues, and legal requirements for prescriptive authority.

NGR 5810 Research Methods & Evidence-based Practice (3) This course focuses on the process of scientific inquiry and incorporating research evidence into a wide variety of practice settings. Students will gain essential knowledge and skills to collaborate in the research process, to critique and utilize research, and to apply evidence-based concepts to optimize patient outcomes. Topics include research process and evidence-based practice.

NGR 6891 Health Policy and Nursing (2) Pre- or co-requisites: NGR 5110, NGR 6740, NGR 5141or special approval. This course analyzes the competencies necessary to influence health policy. By including topics such as economics of health care, health promotion of diverse groups, and cultural sensitivity, students will analyze national and state health policies that affect advanced practice nursing. Students are introduced to health services research and the role of policy makers to help them envision how they can integrate policy into their own career.

NGR 5003C Advanced Health Assessment Theory (3) Pre- or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5172, NGR 5810, NGR 6891, NGR 5003L. This course focuses on the development of advanced health assessment skills to obtain and complete a comprehensive health history and physical. Building on previously learned skills and knowledge, students will develop competence in synthesizing assessment data to identify, describe, and communicate normal and abnormal findings across the life span in a written and oral format. A major focus of this course is on the assessment process, clinical reasoning and decision-making for advanced practice nursing in a variety of primary care settings. This is the first in a sequence of clinical courses, and is pre-requisite to other clinical courses.

NGR 5003L Advanced Health Assessment Practicum (1)
Pre- or co-requisites: NGR 5110, NGR 6891, NGR 6740, NGR 5141, NGR 5172, NGR 5810, NGR 5003C. This practicum focuses on history-taking and assessment skills necessary to develop the initial database for patient management by the advanced practice nurse. Students will practice interpretation of multidimensional assessment and diagnostic information as well as develop competence in identifying normal and abnormal findings. Emphasis is placed on the proper assessment process and oral/written documentation techniques. This course requires 90 laboratory/clinical hours. This practicum course is the first in the sequence of clinical courses, and is pre-requisite to other practicum courses.

NGR 5742 Role of APN in Health Promotion & Disease Prevention (3) Pre- or co-requisites: All first and second semester courses and NGR 5209. This course will focus on health promotion and disease prevention trends across the adult lifespan for all population groups. Theories/models of health promotion, screening examinations, vaccination guidelines, and other evidence-based health promotion strategies are covered along with techniques that promote cultural sensitivity and address health care disparities.

NGR 5209 Clinical Management of Older Adults (3) Pre- or co-requisites: All first and second semester courses and NGR 5742. This course provides students with the knowledge and skills needed for clinical management of older adults. Clinical reasoning skills to differentiate normal aspects of aging from abnormal findings associated with disease processes are emphasized. Clinical settings and geriatric health care settings are explored from the perspective of the advance practice nurse to assist the student with role transition. Minimum of 45 hours of clinical practice.

NGR 6291 Special Issues Across the Adult Life Span (2) Pre- or co-requisites: All three prior semester courses and NGR 6201 and NGR 6201L (AGPCNP) or NGR 6347 and NGR 6347L (WHNP). This course provides acquisition of expanded knowledge and skills to enable the advanced practice nurse to manage common mental health problems and promote mental health among vulnerable adults including adolescents.

NGR 6201 Primary Care for Adults Across the Life Span (3) Pre- or co-requisites: All three prior semester courses; NGR 6291 and NGR 6201L. This first level nurse practitioner course will focus on critical thinking skills to address common and acute health problems across the adult lifespan in primary care. Diagnostic procedures, differential diagnosis, problem-solving skills, and appropriate selection of pharmacological and non-pharmacological therapies are included. It will include application of evidence-based health promotion and disease prevention, evaluation of management plan, and appropriate consultation and referral to other health care providers. Applicable theories, patient education, interpersonal skills, and counseling are integrated to facilitate the student's transitions to the role of the nurse practitioner.

NGR 6201L Primary Care for Adults Across the Life Span Practicum I (4) Pre- or co-requisites: All three prior semester courses and NGR 6291. This course (taken concurrently with NGR 6201) is a clinical course with emphasis on assessment, diagnosis, and management of common acute and chronic health problems of adults across the lifespan. Emphasis is placed on integrating the didactic pharmacotherapeutics, psychopathology, and pathophysiology concepts with evidence based APRN clinical practice in a variety of adult primary care settings. The course stresses the diagnostic and therapeutic role of the nurse practitioner as a member of the interdisciplinary health care team. Minimum of 315 hours of clinical practice.

NGR 6202 Primary Care for Adults Across the Life Span II (3) Pre- or co-requisites: All four prior semester courses and NGR 6202L. This course emphasizes more advanced conceptual approach to diagnosing and managing complex and multiple health problems of adults across the lifespan in a variety of primary care settings. Use of clinical decision-making skills to determine diagnostic and therapeutic interventions that enhance functional activity and reduce unintentional illness/injury of adults are included in the course. Full integration of previously mastered APRN knowledge and skills are the focus as the nurse practitioner student prepares to function within the legal scope of practice.

NGR 6202L Primary Care for Adults Across the Life Span Practicum II (4) Pre-requisites or co-requisites: All four prior

semester courses and NGR 6202. Clinical application of primary care management of young, middle and older age adults. Focus on process of health promotion, risk reduction, restorative intervention protocols in addressing health behaviors of adults and older adults. Minimum of 315 hours of clinical practice.

NGR 6347 Advanced Women's Health Theory (3) Pre- or co-requisites: All four prior semester courses and NGR 6347L. This course includes the theoretical basis for advanced practice nursing in primary care for women during prenatal, postpartum, intrapartum, perimenopausal, menopausal and well-woman life phases. Attention will focus on critical thinking skills to address common and acute gynecological health problems across the female lifespan in primary care settings. Diagnostic procedures, differential diagnosis, problem-solving skills, and appropriate selection of pharmacological and non-pharmacological therapies are included. It will include an emphasis on evidence-based health promotion and disease prevention, evaluation of management plan, and appropriate consultation and referral to other health care providers. Traditional theories of aging, patient education, interpersonal skills, and counseling are stressed to facilitate the student's transitions to the role of the nurse practitioner.

NGR 6347L Advanced Women's Health Practicum (4) Pre- or co-requisites: All four prior semester courses and NGR 6347. This clinical course (taken concurrently with NGR 6347) emphasizes application of theoretical basis for advanced practice nursing in primary care for women during prenatal, postpartum, intrapartum, perimenopausal, menopausal and well-woman life phases. Attention will focus on critical thinking skills to address common and acute gynecological health problems across the female lifespan in primary care settings. Diagnostic procedures, differential diagnosis, problem-solving skills, and appropriate selection of pharmacological and non-pharmacological therapies are included. It will include an emphasis on evidence-based health promotion and disease prevention, evaluation of management plan, and appropriate consultation and referral to other health care providers. Traditional theories of aging, patient education, interpersonal skills, and counseling are stressed to facilitate the student's transitions to the role of the nurse practitioner. Minimum of 315 hours of clinical practice.

NGR 6700 APRN Synthesis Seminar (2) All courses in the curriculum. This course provides content related to the professional experiences and challenges faced by the advanced practice nurse in clinical care, education, management or research. The health care system factors such as policy, financial, technological, and social dynamics that influence both the patient and providers of health care will be examined. The emphasis is placed on the transition to and integration of the APRN role by encouraging the development of cultural sensitivity, addressing health care disparities, and examining issues of social justice.

Doctoral Program

The FAMU School of Nursing has a Cooperative Ph.D. Program with the University of Florida. The program requires 62 credits for students with master's degree. Please see this link for more information: http://admissions.nursing.ufl.edu/degrees/phd/north-florida-phd-consortium/

FAMU Instructional Faculty

School/College	Last Name	First Name
Allied Health Sciences	MOSLEY	BARBARA (Dean)
	THOMAS	TRACY
	SIMMONS	MARY
	BROWN-CROSS	DAWN
	MCNEILL	MARJORIE
	PERRYMAN	MARTHA
	HINDS	MARIA
	TORAN	ERIC
	LEWIS	MARISA
	DALAL	RAJIV
	BECK JONES	JUANDA
	OLIVEIRA	DEBORA
	SMOTHERS	BERNARD
	ALEXANDER	AURELIA
	COOPER	LAN'TEJUANA
	REAVES	PHYLLIS
	REED	KISCHA
	BURKE	LAURALYN
	MBIZA	SARAH
	WOODLEY	PIA
	GENDY	SHERIF
	WOODS	KANDY
Architecture	WELLS-BOWIE	LAVERNE
	WHITE	EDWARD
	BELLARMINE	GNANASIGAMANI
	PABON-CHARNECO	ARLEEN
	OTS	ENN
	KNIGHT	ROY
	HUFFMAN	CRAIG
	LI	CHAO
	GOODWIN	VALERIE
	ANGLADE	YVES
	ALFANO	MICHAEL
	ROBLES	EDUARDO
	LEWIS	ELIZABETH
	SOARES	ANTONIO
	CHAMEL	OLIVIER
	KOBELO	DOREEN
	NICHOLSON	LUKE
	SHADRAVAN	BEHNAM
	PARK	SANG
	MUHAMMAD	RABBANI
	LUMPKIN	RONALD
	AKINSANYA	DAVID
	PROSPER	LEON
	LA GRASSE	DEBORAH
Agriculture & Food Sci.	HSIEH	YUCH
	MILLA	KATHERINE
	LEONG	STEPHEN
	LORENZO	ALFREDO
	ONOKPISE	OGHENEKOME
	CARTER	LAWRENCE
	MAGEE	CHARLES

School/College	Last Name	First Name
	MUCHOVEJ	JAMES
	TSOLOVA	VIOLETA
	THOMAS	MICHAEL
	OLORUNNIPA	ZACCH
	MOBLEY	RAY
	SHEIKH	MEHBOOB
	JAMES	NEIL
	MUSINGO	MITWE
	ANDERSON	LEE
	KANGA	LAMBERTH
	MBUYA	ODEMARI
	PHILLS	BOBBY
	GARDNER	CASSEL
	GITAU	MARGARET
	HAND	SAMUEL
	TAYLOR	JENNIFER
	DUKE	EDWIN
	HIX	RAYMOND
	BAILEY	NATHANIEL
	SOLIS	DANIEL
	SARJEANT	KEAWIN
	ANANGA	ANTHONY
	PAUL	HARRIETT
	WRIGHT	GLEN
	BEAUDOUIN	JEAN
	RICHARDSON	VONDA
	NELSON	TONDALAYA
	PURVIS	ROBERT
Education		
	LUTFI	GHAZWAN
	ELLIS	RUFUS
	DAVENPORT	ELIZABETH
	THOMPSON	BARBARA
	CHANDLER	STEVE
	HOPE	WARREN
	POOLE	GLORIA
	AUMAN	PEGGY
	DOZIER-HENRY	OARE
	OKEKE	MARIA
	HOLLEY DENNIS	DAWN
	THOMAS	PATTY
	HICKEY	BRIAN
	PRICE	SARAH
	STEWART	ENDYA
	KELLEY	BERNADETTE
	GREENE	THYRIA
	NEWELL	MARY
	BAUMAN	GAIL
	FONTAINE	NANCY
	ERVIN	CHARLES
	WALLACE	RENEE
	MOORE	SHEILA
	DAVIS	EDITH

School/ College	Last Name	First Name
	WHITE	DAVID
	BLANKENSHIP	REBECCA
	DAVIS	CHERON
	HENDERSON	LAVETTA
	KAMBUI	HASSIEM
	ROWLEY	ALISHEA
	CLEMONS	KRISTAL
	CHESTER	MELISSA
	THOMAS	NICHOLAS
	TOLLIVER	EDWARD
	YOUMANS	PATRICIA
	WEATHERSPOON	MARK
Engineering	PERRY	REGINALD
	HUANG	WENRUI
	KALU	EGWU
	MOSES	REN
	KALU	PETER
	ARORA	RAJENDRA
	TAWFIQ	KAMAL
	AWONIYI	SAMUEL
	RAMBO-RODDENBERR	MICHELLE
	YU	MING
	RAMAKRISHNAN	SUBRAMANIAN
	CLARK	CLAYTON
	BERNADIN	SHONDA
	JUNG	SUNGMOON
	HRUDA	SIMONE
	MOORE	CARL
	MTENGA	PRIMUS
	HARVEY	BRUCE
	ABDELRAZIG	YASSIR
	MOSS	PEDRO
	GRAYSON	JAMES
	DICKENS	TARIK
	JAGOE	CHARLES
	WILLIAMS	HENRY
Environment	ABAZINGE	MICHAEL
	ROBINSON	LARRY
	CHAUHAN	ASHVINI
	OWENS	MARCIA
	GRAGG	RICHARD
	CHERRIER	JENNIFER
	JOHNSON	ELIJAH
	ESSIEN	FREDERIC
Journalism	HUFF	FRANCINE
	JONES	KENNETH
	HUNTER	LEAH
	ZIEGLER	DHYANA
	ABRAMS	MICHAEL
	BERTOLAET	FREDERICK
	WILDER	KAY
	GRABLE	BETTYE
	WHITE	VALERIE
	DOUGLAS	MICHAEL
	MCLEOD	YANELA
	ROBERTS	RODNEY
	JOHNSON	MAURICE
	JILES	WILLIAM
	RICHARDSON	ROBERT
Law	HARVEY	CORI
	JONES	JOHN-PAUL
	HENSLEE	WILLIAM
	LEVITT	JEREMY
	LANGSTON	LUNDY
	ABRAMS	ROBERT
	REAVES	RHONDA
	COOPER	MARKITA
	ABATE	RANDALL
	DUNCAN	JOHN
	GRIFFIN	RONALD
	BULLOCK	JOAN
	SALEEM	OMAR
	JONES	DARRYLL
	JONES	YOLANDA
	FINEMAN	JONATHAN
	REYES-JANDALI	MARITZA
	GRANT	JOSEPH
	CATO	RHODA
	PERSAUD	SHIV
	CAVAZOS	ANN MARIE
	NEKHEBA	NISE
	TAITE	PHYLLIS
	BROWN	JEFFERY
	SMITH	JENNIFER
	BOOTHE-PERRY	NICOLA
	BROUSSARD	PATRICIA
	ALFORD	DELESO
	RANDALL	TSHAKA
	DINEEN	CAROLEEN
	PERRY	BEVERLY
	RASBERRY	SHENAE
	CAUSSADE	EUNICE
	NAZRY	LORI
	WASHINGTON	KAJUEL
	OLAVARRIA	REBECCA
	WALKER	TONYA
	JACKSON	ALICIA
	MINARCIN	ROBERT
	ALLEN	RENE
	MITCHELL	REGINALD
	D'ANGELO	KRISTY
Nursing	GRAHAM	MARY
	EARP	JAIBUN
	ONUBOGU	ULOMA
	MARSHALL	JANET
	DANIELS	SHEENA
	BRONSON	SEVILLA
	PHILLIPS	CARSWELLA
	LAWSON	DELORES
	BRYANT	BRENDA
	GUTHRIE	DAVID

School/ College	Last Name	First Name
	BUTLER	ROBIN
	DARITY	DONNA
	ADAMS	SHAWANNA
Other	LAROSE	MARGARETH
	ISRAEL	BRIDGETTE
	SMITH	LILLIAN
	MOSLEY II	JUAN
Pharmacy	LEWIS	BRYAN
	XIAO	HONG
	SACHDEVA	MANDIP
	LAMANGO	NAZARIUS
	ORIAKU	EBENEZER
	RAPPA	LEONARD
	GOODMAN	CARL
	KIRKSEY	OTIS
	HONEYWELL	MARLON
	HARRIS	CYNTHIA
	SAMAAN	SABER
	BRANCH	EVANS
	SPENCER	SHAWN
	KIROS	GEBRE-EGZIABHE
	REAMS	R
	FITZGERALD	THOMAS
	HOLDER	MAURICE
	BROWN	CLYDE
	SOLIMAN	KARAM
	ERAIKHUEMEN	NATHANIEL
	BURNEY	DEANNA
	LOPEZ	IVETTE
	SUTHER	SANDRA
	BARBER	JANET
	GHAZVINI	PATTY
	COLQUITT	CHARLIE
	JONES	JOCELYN
	HILLIARD	AARON
	BECKER	ALAN
	JACKSON	SYLVIA
	COOPERWOOD	JOHN
	THORNTON	ANGELA
	EMANUEL	FRANK
	RAHMAN	SALEH
	THOMAS	ROBERT
	CAMPBELL	ELLEN
	NORWOOD	DARYL
	SIMON	WAYNE
	CLOSE	FRAN
	AGYARE	EDWARD
	ROBERTSON	GERVIN
	TAWK	RIMA
	BAKER	CHARLOTTE
	SEAL	DAVID
	DARLING	SELINA
	DIABY	VAKARAMOKO
	PARKE	CRYSTAL
	DUTTON	MATTHEW
	LEE	TORHONDA
	CARRION	ANTONIO
	DARK	TYRA
	ARDLEY	TIFFANY
	MATHIS	ARLESIA
	MILES	JOVAN
	MARR	TAYANNA
	MARTIN	TONYA
	FLORES-ROZAS	HERNAN
	MAHDAVIAN	SOHEYLA
	HALL	CYNTHIA
	PRIER	LEMORRIS
	ASHFORD	ALICESTINE
	SCOTT	MARVIN
	RIDLEY	ALFRED
SBI	NWAKANMA	HUDSON
	ISLAM	MAZHAR
	SUTTERFIELD	J
	DAVIS	BOBBY
	DANIELS	RUDOLPH
	HIGHTOWER	ROSCOE
	SHRESTHA	NANDA
	ETIENNE	EISENHOWER
	SMITH	WILBUR
	OGULEDO	VICTOR
	RAVENELL	WILLIAM
	WILLIAMS	DEEDGRA
	COLLINS	JENNIFER
	CAMPBELL	MICHAEL
	JACKSON	ANNETTE
	DRUMMING	SAUNDRA
	SHABAZZ	DAAIM
	MURPHY	ANGELA
	OSAGIE	JOHNSTON
	SWIRSKY	STEVEN
	BLACK	JASON
	HILL	ARETHA
	ASHLEY	CLYDE
	NKANSAH	PAUL
	BATES	IRA
	WILSON	RICHARD
	OKOYE	IFEAKANDU
	HOLLOMAN	DEREK
	HOLMES	YVETTE
	NELSON	ANDREA
	BAILEY	KELLEY
	MARCH	SAMIQUE
	CHARLES	ATIRA
	COLE	DWAYNE
	FARMER	ERRICK
	JOHNSON	NATHANIEL
	WHITE	LATANYA
	FARMER	KELVIN
	KARESH	CYNTHIA
	KINCHLOW	GINA
	GIPSON	CINDY
	REEDER	CRAIG
	MCKENZIE	DEANNA

School/ College	Last Name	First Name
	GUIRAND	BERNADETTE
	HENDERSON	HAROLD
	HACISALIHOGLU	GOKHAN
Science and Technology		
	WEATHERFORD	CHARLES
	SAHA	BIDHAN
	JONES	EDWARD
	TREADWELL	ELLIOTT
	UGOCHUKWU	NGOZI
	EDWARDS	JESSE
	JONES	ANDREW
	BELAY	KALAYU
	WILLIAMS	RONALD
	ADAMS	JAMES
	KENNEDY	ROBIN
	HARMON	MARION
	MOCHENA	MOGUS
	TURNER	RALPH
	LATINWO	LEKAN
	JOHNSON	LEWIS
	IKEDIOBI	CHRISTOPHER
	NGNEPIEBA	PIERRE
	PRASAD	BHANU
	JACK	MARK
	MUSA	MUSILIYU
	LAURIC	VASILE
	GUNARATNE	AJITH
	MATEEVA-TARKALANOVA	NELLY
	LONG	RICHARD
	SCARLETT	CAROL
	ONYEOZILI	EDITH
	MEZONLIN	EPHREM
	ODEWUMI	CAROLINE
	ALLEN	CLEMENT
	ISSOS	JAMES
	O NEAL	RAY
	BOUYER	JAMES
	BLAYNEH	KBENESH
	WILLIAMS	HENRY
	ENCINOSA	MARIO
	APPARTAIM	RICHARD
	EVANS	DEIDRE
	GUERRIERI	BRUNO
	GRANVILLE	BOBBY
	STAMPE	PATRICIA
	STEPHENS	DESMOND
	RIGGS	KEN
	STEPHENS	SONYA
	WILLIAMS	ROSELYN
	GOTTSCHALK	VIRGINIA
	SENEVIRATHNE	KEERTHISINGHE
	BRODHEAD	KATIE
	RENEAU	PAULETTE
	GIBBON	BRYAN
	THORNTON	MICHEAL
	CHI	HONGMEI
	MOCHONA	BEREKET

School/ College	Last Name	First Name
	SAWICKI	THOMAS
	MCCOLLUM	ADRIAN
	STROHABER	JAMES
	RUSSELL	LARRY
	NAG	ANITA
	HOLLINGSWORTH	JAVORIS
	KHALIL	RAFAAT
	BRUSH	SABITRA
	WILDER	TANGANYIKA
	SCRIVEN	LATRICIA
	PITIGALAARACHCHIGE	SANUJA
	TUCKER	ROY
	OSBORNE	DANIEL
	KATAM	RAMESH
	THOMAS	LEESHAWN
	HUMANN	JESSICA
	MCQUEEN	ARLISHA
	SIMMONS	ELISE
	ANDREWS	RICHARD
	MARTIN	STEPHEN
	BAILEY	ADAM
	JACKSON	CASANOVA
	ELHAG	RASHID
	CHATMON	CHRISTY
Social Sciences	PARKER	KEITH
	SAWH	RUTH
	EIDAHL	KYLE
	BOSTON	GENYNE
	LABOSSIERE	MICHAEL
	BROWN	TITUS
	DAWSON	EMMA
	INAMETE	UFOT
	GRAY-RAY	PHYLLIS
	SARJEANT	LINDSEY
	AMMONS	JAMES
	DECOSMO	JANET
	POWELL	DEIDRE
	BOGAN	YOLANDA
	DAVIS	MARY
	JAMES	SHAYLOR
	WELLS	LUTHER
	YOUNG	SYLVESTER
	SIMMONDS	KEITH
	JACKSON-LOWMAN	HUBERTA
	CAMPBELL	RICHARD
	JACKSON	DAVID
	KEMP	YAKINI
	CLEMONS	KAWACHI
	TAHA	TAHA
	MYERS	LAURA
	ROBINSON	JACKIE
	JAMES-SINGLETON	GWENDOLYN
	OWENS	ALLEZO
	CHIPMAN	SHELBY
	GRIFFIN	ROBERT
	SIMS	BRIAN
	KING-PEDROSO	NATALIE

School/ College	Last Name	First Name Social
Social Sciences		
	WHITE	DENNINE
	FINCH-KAREEM	KIM
	LIU	NAN
	BRETHAUER-GAY	HELEN
	SEAY	GERALDINE
	JARMON	BRENDA
	HOUSTON	JOE
	RAMOS	JOHANNA
	AGUILAR	GLORIA
	STALLWORTH	FRANCES
	COHEN	DESILVER
	ROBERTSON	JERMAINE
	WILLIAMS	DEREK
	PAUL	GARY
	PARSONS	LONGINEU
	THOMAS	LEESTHER
	MOLOYE	OLUGBEMI
	WILTSHER	HARRIS
	DIX-RICHARDSON	FELECIA
	AROYEWUN	OLADIPO
	WRIGHT	LARRY
	HARDING	KIMBERLY
	LANGLEY	MERLIN
	JONES	JENNY
	MCINTOSH	YVONNE
	BELL	YVONNE
	SOBKOWSKA	JOANNA
	YON	VERONICA
	TRUJILLO	EVELYN
	DIALLO	MARY
	HAMILTON	SEWARD
	PERRY	ROBIN
	ZHANG	LI-PING
	BROWN	RAEFORD
	HORN	GEOFFREY
	GASTON	JUANITA
	COHEN	SYLVESTER
	LI	HUIJUN
	SHOWERS	ZACHARY
	HUGHES	BRENDA
	MCCRAY	APRIL
	CARNLEY	EDITH
	KILGORE	ALETHEA
	SISSLE III	NOBLE
	RHODES	MARCUS
	SCRIVEN	DARRYL
	SAGER	REBECCA
	DAVIS	CYNTHIA
	MUWWAKKIL	ZAKIYA
	SHAKIR	AMEENAH
	HALL	BRIAN
	DENSU	KWASI
	WARFORD	JOHN
	ROACHE	AJA
	METZGER	NZINGA
	REINFELD	SCOTT
	BRYANT	KENDRA
	YOUNG	DARIUS

School/ College	Last Name	First Name Social
	VEGA	CARLOS
	SNODGRASS	KRISTINE
	TYLER	EVELYN
	JOHNSON	PHYLLIS
	BUTLER	MARK
	BRADLEY	ALISHA
	BROWN	LILLIE
	HARRIS	GREGORY
	GARNES	LAMAR
	FORD	NA'IMAH
	BENNETT	CARL
	WEBB	JAMES
	HODGES	GLENN
	ARANA DOWNS	RUBEN
	SURRENCY	JENEEN
	ENO	VICTOR
	GUZMAN	WILLIAM
	DANIELS	CHRISTOPHER
	BOWENS-SAFFO	PAMELA
	CLARK	CHANDRA
	ELLIS	REGINALD
	WASHINGTON	KENYA
	DIN	TALIB
	MUNROE	MONEKKA
	DUNCAN	MARCI
	HUDSON	JENISE
	GOLDEN	AMBER
	MCKENDRICK	WACHELL
	LANG	GLADYS
	FAISON	STEPHEN
	RILEY	NANDI
	PROCTOR	WILLIAM
	CHEEKS	MAKISHA
	STENNETT	YVETTE
	WHITE	MELANIE
	DONALDSON	KATISA
	BRYANT	CERON
	JONES	TRACEY
	TURNQUEST	ROSCOE
	BOWEN	KRISTEN
	DOKURUGU	YUSSIF
	HENRY	KAJSA
	MASON	TRACEE
	ICHILE	IYELLI
	KAISER	PAMELA
	LEE	KESHYA
	ABRAMS	MELANIE
	WILLIAMS	ALEXANDER