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Florida A&M University

Tallahassee, Florida

GENERAL CATALOG

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Florida A&M University and its Board of Trustees (University) encourage the application and enrollment of all qualified students and is committed to the following non-discrimination policy:

“It is the policy of Florida A&M University to assure that each member of the University community be permitted to work or attend classes in an environment free from any form of discrimination including race, religion, color, age, disability, sex, marital status, national origin, veteran status and sexual harassment as prohibited by state and federal statutes. This shall include applicants for admission to the University and employment.”

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While every effort is made to assure accurate and up-to-date information, the University does not assume 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.

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University Calendar (2008-2010)

Office of the University Registrar

FALL SEMESTER, 2008

| | |
|--------------------------------------------------------|-------------------------|
| Web Registration | April 19 - August 29 |
| Last Day to apply for admissions | May 16 |
| Non-Degree Seeking Student Application Due | August 1 |
| In-State Residency Classification Period | July 7 – August 8 |
| Early Registration | April 7-11 |
| Residence Halls Open | August 16 |
| New Student Orientation | August 17- 18 |
| Regular Registration | August 18 -22 |
| Late Registration & Add/Drop Period | August 23 - 29 |
| Graduation Applications Due to Advisors | August 25 |
| 1st Class Meeting | August 25 |
| State Employee/Non-Degree Seeking Student Registration | August 27 |
| Last day to pay 100% of ALL fees | August 29 |
| Holiday (Labor Day) Classes Suspended | September 1 |
| 25% Refund for withdrawal from Univ. | September 19 |
| Graduation applications due from Deans | September 22 |
| Last Day to Withdraw: Course/University | September 26 |
| Last Day for Instructors to submit "I" Change of grade | October 24 |
| Holiday (Veterans Day) Classes Suspended | November 11 |
| Holiday (Thanksgiving) Classes Suspended | November 27 – 28 |
| Last day of classes | December 5 |
| Final Examinations | December 8 – 12 |
| Commencement Leon County Civic Center @ 6 p.m. | December 12 |
| Residence Halls Close (9 a. m.) | December 13 |
| Grades due by noon | December 15 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information.

SPRING SEMESTER, 2009

| | |
|------------------------------------------|-------------------|
| Last Day to apply for admissions | November 14, 2008 |
| Special Student Application Due | December 5, 2008 |
| In-State Residency Classification Period | July 7 – August 8 |

| | |
|--------------------------------------------------------|---------------------|
| Residence Halls Open | January 2 |
| New Student Orientation | January |
| Regular Registration | January 5 |
| Late Registration & Add/Drop Period | January 6 - 9 |
| Graduation Applications Due to Advisors | January 6 |
| 1st Class Meeting | January 6 |
| State Employee/Special Student Registration | January 7 |
| Last day to pay 100% of ALL Fees | January 9 |
| Holiday (Martin Luther King) | January 19 |
| 25% Refund for withdrawal from Univ. | January 30 |
| Graduation applications due from Deans | February 23 |
| Last Day to Withdraw: Course/University | March 27 |
| SPRING BREAK | March 9 - 13 |
| Last Day for Instructors to submit "I" Change of grade | April 17 |
| Legislative Monday | May 1, 2009 |
| Last day of classes | April 24 |
| Final Examinations | April 27 – May 1 |
| Commencement @ 6 p.m. | May 3 |
| Residence Halls Close (9 a. m.) | May 3 |
| Grades due by noon | May 4 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information.

SUMMER TERM, 2009 - Session "A"

| | |
|--------------------------------------------|--------------------|
| In-State Residency Classification Period | Mar. 23 – April 17 |
| Non-Degree Seeking Student Application Due | April 17 |
| Early Web Registration | Mar. 23 - May 8 |
| Residence Halls Open | May 9 |
| New Student Orientation | May 10 |
| Regular Registration | May 7-8 |
| Late Registration | May 9-15 |
| Graduation Applications Due to Advisors | May 11 |
| 1st Class Meeting | May 11 |

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| State Employee/Non-Degree Seeking Registration Last day to pay 100% of ALL fees | May 13 May 15 | Commencement @ 6:00 p.m. Residence Halls Close (9 a.m.) | August 7 August 8 |
| Holiday (Memorial Day Observed) Classes Suspended | May 25 | Grades due by noon | August 10 |
| Holiday (Independence Day) Classes Suspended | N/A | | |
| 25% Refund for withdrawal from Univ. | May 29 | NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | |
| Graduation applications due from Deans | June 1 | | |
| Last Day to Withdraw: Course/University | June 5 | SUMMER TERM, 2009- Session "C" | |
| Web Registration Fall '09' (By Appt. ONLY) | April 6 – April 10 | In-State Residency Classification Period | Mar. 24 – April 18 |
| Web Registration Fall '09' (Open Enrollment) | April 13 – Aug 28 | Non-Degree Seeking Student Application Due | April 18 |
| Last Day for Instructors to submit "I" Change of grade | July 24 | Early Web Registration | Mar. 23 - May 8 |
| Last day of classes | June 19 | Residence Halls Open | May 9 |
| Final Examinations | June 22-24 | New Student Orientation | May 10 |
| Commencement Leon County Civic Center @ 6 p.m. | August 7 | Regular Registration | May 7 - 10 |
| Grades due by noon | June 26 | Late Registration | May 11 - 14 |
| NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | | Graduation Applications Due to Advisors | May 11 |
| | | 1st Class Meeting | May 11 |
| | | State Employee/Non-Degree Seeking Registration | May 13 |
| | | Last day to pay 100% of ALL fees | May 15 |
| SUMMER TERM, 2009 - Session "B" | | Holiday (Memorial Day Observed) Classes Suspended | May 25 |
| In-State Residency Classification Period | May 12 – June 6 | Holiday (Independence Day) Classes Suspended | July 3 |
| Non-Degree Seeking Student Application Due | June 19 | 25% Refund for withdrawal from Univ. | May 29 |
| Early Web Registration | March 23 – July 2 | Graduation applications due from Deans | June 1 |
| Residence Halls Open | June 26 | Last Day to Withdraw: Course/University | June 5 |
| New Student Orientation | June 27 - 28 | Web Registration Fall '09' (By Appt. ONLY) | April 6 – April 10 |
| Regular Registration | June 25 - 26 | Web Registration Fall '09' (Open Enrollment) | April 13 – Aug 28 |
| Late Registration | June 27 – July 2 | Last Day for Instructors to submit "I" Change of grade | July 24 |
| Graduation Applications Due to Advisors | June 29 | Last day of classes | August 7 |
| 1st Class Meeting | June 29 | Final Examinations | August 6 - 7 |
| State Employee/Non-Degree Seeking Registration | July 1 | Commencement @ 6 p.m. | August 7 |
| Last day to pay 100% of ALL fees | July 6 | Residence Halls Close (9 a. m.) | August 8 |
| Holiday (Memorial Day Observed) Classes Suspended | May 25 | Grades due by noon | August 10 |
| Holiday (Independence Day) Classes Suspended | July 3 | NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | |
| 25% Refund for withdrawal from University | July 17 | FALL SEMESTER, 2009 | |
| Graduation applications due from Deans | June 1 | Web Registration | April 20 - August 24 |
| Last Day to Withdraw: Course/University | July 24 | Last Day to apply for admissions | May 15 |
| Web Registration Fall '09' (By Appt. ONLY) | April 6– April 10 | Non-Degree Seeking Student Applications Due | July 31 |
| Web Registration Fall '09' (Open Enrollment) | April 13 – Aug 28 | In-State Residency Classification Period | July 6 - August 7 |
| Last Day for Instructors to submit "I" Change of grade | July 24 | | |
| Last day of classes | August 7 | | |
| Final Examinations | August 6 - 7 | | |

| | | | |
|--------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Early Registration | April 6 - 10 | Graduation applications due from Deans | February 22 |
| Residence Halls Open | August 15 | Last Day to Withdraw: Course/University SPRING BREAK | March 26 March 8-12 |
| New Student Orientation | August 16 - 17 | Last Day for Instructors to submit "I" Change of grade | April 16 |
| Regular Registration | August 17 - 21 | Last day of classes | April 30 |
| Late Registration & Add/Drop Period | August 22 - 28 | Final Examinations | May 3-7 |
| Graduation Applications Due to Advisors | August 24 | Commencement | May 7 |
| 1st Class Meeting | August 24 | Residence Halls Close (9 a. m.) | May 8 |
| State Employee/Non-Degree Seeking Student Registration | August 26 | Grades due by noon | May 10 |
| Last day to pay 100% of ALL fees | August 28 | | |
| Holiday (Labor Day) Classes Suspended | September 7 | | |
| 25% Refund for withdrawal from University | September 18 | | |
| Graduation applications due from Deans | September 21 | | |
| Last Day to Withdraw: Course/University | September 25 | SUMMER TERM, 2010 - Session "A" In-State Residency Classification Period | March 22 – April 16 |
| Last Day for Instructors to submit "I" Change of grade | October 23 | Non-Degree Seeking Student Application Due | April 16 |
| Holiday (Veterans Day) Classes Suspended | November 11 | Early Web Registration | March 21 - May 7 |
| Holiday (Thanksgiving) Classes Suspended | November 26 – 27 | Residence Halls Open | May 8 |
| Last day of classes | December 4 | New Student Orientation | May 9 |
| Final Examinations | December 7 – 11 | Regular Registration | May 6 - 7 |
| Commencement @ 6 p.m. | December 11 | Late Registration | May 8 -12 |
| Residence Halls Close (9 a.m.) | December 12 | Graduation Applications Due to Advisors | May 10 |
| Grades due by noon | December 14 | 1st Class Meeting | May 10 |
| | | State Employee/Non-Degree Seeking Registration | May 12 |
| | | Last day to pay 100% of ALL fees | May 14 |
| | | Holiday (Memorial Day Observed) Classes Suspended | May 31 |
| | | 25% Refund for withdrawal from University | May 28 |
| | | Graduation applications due from Deans | June 1 |
| | | Last Day to Withdraw: Course/University | June 4 |
| | | Web Registration Fall '10' (By Appt. ONLY) | April 5 – April 9 |
| | | Web Registration Fall '10' (Open Enrollment) | April 12 – Aug 27 |
| | | Last Day for Instructors to submit "I" Change of grade | July 23 |
| | | Last day of classes | June 18 |
| | | Final Examinations | June 21-23 |
| | | Commencement @ 6 p.m. | August 13 |
| | | Grades due by noon | June 25 |
| | | | |
| | | NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | |
| SPRING SEMESTER, 2010 | | | |
| Last Day to apply for admissions | November 13, 2009 | | |
| Special Student Application Due | December 4, 2009 | | |
| In-State Residency Classification Period | July 6 – August 7 | | |
| Residence Halls Open | January 2 | | |
| New Student Orientation | January 3 | | |
| Regular Registration | January 4 | | |
| Late Registration & Add/Drop Period | January 6 - 8 | | |
| Graduation Applications Due to Advisors | January 6 | | |
| 1st Class Meeting | January 6 | | |
| State Employee/Special Student Registration | January 8 | | |
| Last day to pay 100% of ALL Fees | January 8 | | |
| Holiday (Martin Luther King) | January 18 | | |
| 25% Refund for withdrawal from University | January 29 | | |

| | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| SUMMER TERM, 2010 - Session "B" | | State Employee/Non-Degree Seeking Registration | May 12 |
| In-State Residency Classification Period | May 10 – June 7 | Last day to pay 100% of ALL fees | May 14 |
| Non-Degree Seeking Student Application Due | June 18 | Holiday (Memorial Day Observed) Classes Suspended | May 31 |
| Early Web Registration | March 21 – July 2 | Holiday (Independence Day) Classes Suspended | July 5 |
| Residence Halls Open | June 26 | 25% Refund for withdrawal from Univ. | May 28 |
| New Student Orientation | June 26-27 | Graduation applications due from Deans | June 1 |
| Regular Registration | June 27-28 | Last Day to Withdraw: Course/University | June 4 |
| Late Registration | June 27 – July 2 | Web Registration Fall '10' (By Appt. ONLY) | April 5 – April 9 |
| Graduation Applications Due to Advisors | June 28 | Web Registration Fall '10' (Open Enrollment) | April 12 – Aug 27 |
| 1st Class Meeting | June 28 | Last Day for Instructors to submit "I" Change of grade | July 23 |
| State Employee/Non-Degree Seeking Registration | June 30 | Last day of classes | August 6 |
| Last day to pay 100% of ALL fees | July 6 | Final Examinations | August 9 -13 |
| Holiday (Memorial Day Observed) Classes Suspended | May 31 | Commencement @ 6:00 p.m. | August 13 |
| Holiday (Independence Day) Classes Suspended | July 5 | Residence Halls Close (9 a.m.) | August 14 |
| 25% Refund for withdrawal from Univ. | July 16 | Grades due by noon | August 16 |
| Graduation applications due from Deans | June 1 | | |
| Last Day to Withdraw: Course/University | July 24 | NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | |
| Web Registration Fall '10' (By Appt. ONLY) | April 5– April 9 | | |
| Web Registration Fall '10' (Open Enrollment) | April 12 – Aug 27 | FALL SEMESTER, 2010 | |
| Last Day for Instructors to submit "I" Change of grade | July 23 | Web Registration | April 20 - August 24 |
| Last day of classes | August 6 | Last Day to apply for admissions | May 15 |
| Final Examinations | August 9 -13 | Non-Degree Seeking Student Application Due | July 31 |
| Commencement 6 p.m. | August 13 | In-State Residency Classification Period | July 6 - August 7 |
| Residence Halls Close (9 a.m.) | August 14 | Early Registration | April 6 - 10 |
| Grades due by noon | August 16 | Residence Halls Open | August 15 |
| NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information. | | New Student Orientation | August 16 - 17 |
| | | Regular Registration | August 17 - 21 |
| | | Late Registration & Add/Drop Period | August 22 - 28 |
| | | Graduation Applications Due to Advisors | August 24 |
| SUMMER TERM, 2010 - C | | 1st Class Meeting | August 24 |
| In-State Residency Classification Period | Mar. 22– April 16 | State Employee/Non-Degree Seeking Student Registration | August 26 |
| Non-Degree Seeking Student Application Due | April 16 | Last day to pay 100% of ALL fees | August 28 |
| Early Web Registration | March 21 - May 7 | Holiday (Labor Day) Classes Suspended | September 7 |
| Residence Halls Open | May 8 | 25% Refund for withdrawal from Univ. | September 18 |
| New Student Orientation | May 9 | Graduation applications due from Deans | September 21 |
| Regular Registration | May 6-7 | Last Day to Withdraw: Course/University | September 25 |
| Late Registration | May 8 - 14 | Last Day for Instructors to submit "I" Change of grade | October 23 |
| Graduation Applications Due to Advisors | May 10 | Holiday (Veterans Day) Classes Suspended | November 11 |
| 1st Class Meeting | May 10 | | |

| <i>Holiday (Thanksgiving) Classes Suspended</i> | <i>November 26 – 27</i> |
|-------------------------------------------------|-------------------------|
| Last day of classes | December 4 |
| Final Examinations | December 7 – 11 |
| Commencement @ 6 p.m. | December 11 |
| Residence Halls Close (9 a. m.) | December 12 |
| Grades due by Noon | December 14 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website@ www.famu.edu for updated information.

For a more complete 2008-2010 University Calendar which includes the College of Pharmacy Rotation/Clerkship and the College of Law, please see Appendix A.



General Information

An 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 eleven member State University System of Florida.

In 1884, **Thomas 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 decision 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 first by becoming the first 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. Humphries** [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, is 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 hall-mark 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 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. At NCCU, enrollment reached an all-time high during his tenure, climbing from 5,476 in 2000-2001 to 8,675 in 2006-2007 – a 58.4 percent increase. NCCU became the fastest growing institution in the University of North Carolina System.

Since Dr. Ammons' arrival at the University, he has 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 this summer, the University will enroll students for the first time in a new doctorate program in physical therapy.

University 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 - 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 ten 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 those individuals it serves and their society.

Vision Statement

Florida Agricultural and Mechanical University will provide the citizens of Florida, the nation, and the world with inspirational teaching, relevant research, and meaningful service by offering opportunities to enhance humankind.

Mission Statement

The mission of Florida Agricultural and Mechanical University (FAMU), as an 1890 land-grant institution, is to provide an enlightened and enriched academic, intellectual, moral, cultural, ethical, technological and student-centered environment, conducive to the development of highly qualified individuals who are prepared and capable of serving as leaders and contributors in our ever-evolving society. The University seeks and supports a faculty and staff of distinction dedicated to providing outstanding academic preparation at the undergraduate, graduate, doctoral and professional school levels, with a particular emphasis on integrity and ethical conduct. FAMU is committed to inspirational teaching, exemplary research and meaningful public and community service through creative partnerships at the local, state, national and global levels. The University is also committed to the resolution of complex issues that will enhance humankind.

While the University continues its historic mission of educating African Americans, persons of all races, ethnic origins and nationalities are welcomed and encouraged to remain life-long members of the university community. The University, through its diverse faculty and staff, provides a caring, nurturing, collegial and respectful environment.

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

Non-Discrimination Policy Statement

It is the policy of Florida A&M University to assure that each member of the university community is permitted to work or attend classes in an environment free from any form of discrimination, including race, religion, color, age, handicap, sex, marital status, national origin, veteran status, and sexual harassment as prohibited by state and federal statutes. This shall include applicants for admission to the university and employment.

Questions concerning this policy and procedures for filing complaints under the policy should be directed to the University EEO/EEA Officer.

Memberships and Accreditation

Florida Agricultural and Mechanical University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools (1866 Southern Lane, Decatur, Georgia 30033-4097-4501; Telephone number 404-679-4501) to award the baccalaureate, master's, professional and doctoral degrees. Inquiries to the Commission should relate only to the accreditation status of the institution, and not to general admission information.

The University also has membership in, or affiliation with, the following agencies:

- Accreditation Board for Engineering & Technology
- Accreditation Council for Occupational Therapy Education
- Accrediting Council on Collegiate Graphic Communication
- Accrediting Council on Education in Journalism and Mass Communications
- American Assembly of Collegiate Schools of Business
- American Association for Higher Education
- American Association of Colleges for Teacher Education
- American Association of Colleges of Nursing
- American Association of Colleges of Pharmacy
- American Association of Collegiate Registrars and Admissions Officers
- American Association of State Colleges and Universities
- American Association of State Colleges and Universities (For participation in Federal Programs)
- American Association for Accreditation of Laboratory Animal Care
- American Council on Education
- American Council on Pharmaceutical Education
- American Health Information Management Association
- American Library Association
- American Society for Engineering Education
- American Occupational Therapy Association
- American Physical Therapy Association
- American Section of the International Solar Energy Society, Inc.
- American Society of Composers and Publishers
- American Society of Journalism
- Association for Minority Health Professions Schools
- Association of College and University Auditors
- Association of Colleges and Schools of Education in State Universities and Land-Grant Colleges and Affiliated Private Universities
- Association of Collegiate Schools of Architecture
- Association of Schools of Journalism and Mass Communication
- Association of Student Chapters of the American Institute of Architects
- Association of University Programs in Health Administration
- Broadcast Education Association
- College and University Personnel Association
- Commission on Accreditation of Allied Health Educational Programs
- Commission on Accreditation of Physical Therapy Education
- Committee on Accreditation for Respiratory Care
- Committee on Allied Health Education and Accreditation / Joint Review
- Committee for Respiratory Therapy Education
- Conference on Deans of Black Graduate Schools
- Consultative Council of the National Institute of Building Sciences
- Council for Advancement and Support of Education
- Council of Colleges of Arts and Sciences
- Council of Historically Black Graduate Schools
- Council on Social Work Education
- Florida Association of Broadcasters
- Florida Association of Colleges and Universities
- Florida Association of Collegiate Registrars and Officers
- Florida Association of Community Colleges
- Florida Association of School Administrators
- Florida Association of Student Councils
- Florida Association of School Financial Aid Administrators
- Florida High School Athletic Association
- Florida Association of Colleges for Teacher Education
- Florida Bandmasters Association
- Florida Committee Commission on Secondary Schools
- Southern Association of Colleges and Schools
- Florida Association of Colleges for Teacher Education
- Florida Health Care Association
- Florida Press Association
- Florida State Board of Nursing
- Institute of Food Technologists
- International Association of Counseling Services
- 1890 Land Grant Library Deans/Directors Association
- NABTE Member Schools and Universities
- National Association for Equal Opportunity in Higher Education
- National Association of College Auxiliary Services
- National Association of College Deans, Registrars, and Admissions Officers
- National Association of College and University Attorneys
- National Association of College and University Business Officers
- National Association of Educational Buyers
- National Association of Printers and Lithographers
- National Association of State University and Land-Grant Colleges
- National Association of Student Personnel Administrators
- National Association of Title III Administrators
- National Council for Accreditation of Teacher Education
- National Council for Science & the Environment
- National Council of University Research Administrators
- National Fire Protection
- National League for Nursing
- National Society of Allied Health Professions
- New Media Consortium
- New South Women's Athletic Conference
- National University Continuing Education Association
- Pan Handle Access Network (PLAN)
- Southern Association of Collegiate Registrars and Admissions Officers
- Southern Business Administration Association
- Southern Council on Collegiate Education for Nursing
- Southern Growth Policies Board
- Southeastern Library Network (Solinet)
- The Accrediting Council on Education in Journalism and Mass Communication
- The American Federation of Arts
- The Association for Institutional Research

The Association for Institutional Research Society of
Research Administrators

The Association of Physical Plant Administrators of Colleges

The College Board News

The Council of Graduate Schools in the United States

The Mathematical Association of America

The National Architectural Accrediting Board

The National Association of Laboratory Schools

The National Association of Student Financial Aid Administration

The Society for College and University Planning

U.S. Naval Sailing Association

Physical Plant

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 million. 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: DRS, \$29 million; University Commons, \$14 million and the Multi-Purpose Center/Teaching Gym, \$31 million.

In addition to major facilities, the program includes \$17 million of utility improvements to support those projects and future campus development with Electrical Upgrades and general infrastructure technology improvements, campus outdoor lighting, walkways and landscape, utility system and roadway infrastructure systems throughout campus.

Current projects in design and negotiations include renovation of Jones Hall, Tucker Hall and Gore Educational Complex Renovation.

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 a reorganization. The university now has six colleges, seven schools and one institute.

COLLEGE OF ARTS AND SCIENCES

College Level Academic Skills Program

Department of Army ROTC

Department of Biology

Department of Chemistry

Department of Computer Information Sciences

Department of Economics

Department of English

Department of History, Political Science, and African American Studies

Department of Foreign Languages

Department of Mathematics

Department of Music

Department of Physics

Department of Psychology

Department of Social Work

Department of Sociology and Criminal Justice

Department of Visual Art, Humanities, and Theatre

COLLEGE OF EDUCATION

Department of Educational Leadership and Human Services

Department of Elementary Education

Department of Health, Physical Education, and Recreation

Department of Industrial Arts and Vocational Education

Department of Secondary Education and Foundations

Florida A&M University Developmental Research School

COLLEGE OF ENGINEERING SCIENCES, TECHNOLOGY, AND AGRICULTURE

Division of Agricultural Sciences

Division of Engineering Sciences and Technology

Division of Naval Sciences

FAMU-FSU COLLEGE OF ENGINEERING

Department of Chemical 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

(Component of the Center for Health Sciences)

Division of Basic Pharmaceutical Sciences

Division of Pharmacy Practice

Economic, Social and Administrative Pharmacy

Institute of Public Health

SCHOOL OF ALLIED HEALTH SCIENCES

(Component of the Center for Health Sciences)

Division of Health Care Management

Division of Health Information Management

Division of Occupational Therapy

Division of Physical Therapy

Division of Cardiopulmonary Science

SCHOOL OF ARCHITECTURE

SCHOOL OF BUSINESS AND INDUSTRY

Division of Undergraduate Programs

Division of Graduate Academic Programs

Division of Professional Development

Division of Internships

SCHOOL OF GENERAL STUDIES

Division of Academic Programs Interface

Division of College Level Academic Skills

SCHOOL OF GRADUATE STUDIES AND RESEARCH

SCHOOL OF JOURNALISM AND GRAPHIC COMMUNICATION

Division of Graphic Communication

Division of Journalism

SCHOOL OF NURSING

ENVIRONMENTAL SCIENCES INSTITUTE

Center for Environmental Equity and Justice

FAMU Center for Environmental Technology Transfer

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

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/oldsite/assessment/assess.php?content=compacts>.

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, M-master's degree, P-professional degree, Ph.D-doctorate of philosophy), and J.D. (juris doctorate). Consult the department for information regarding additional tracks available through these degree programs.

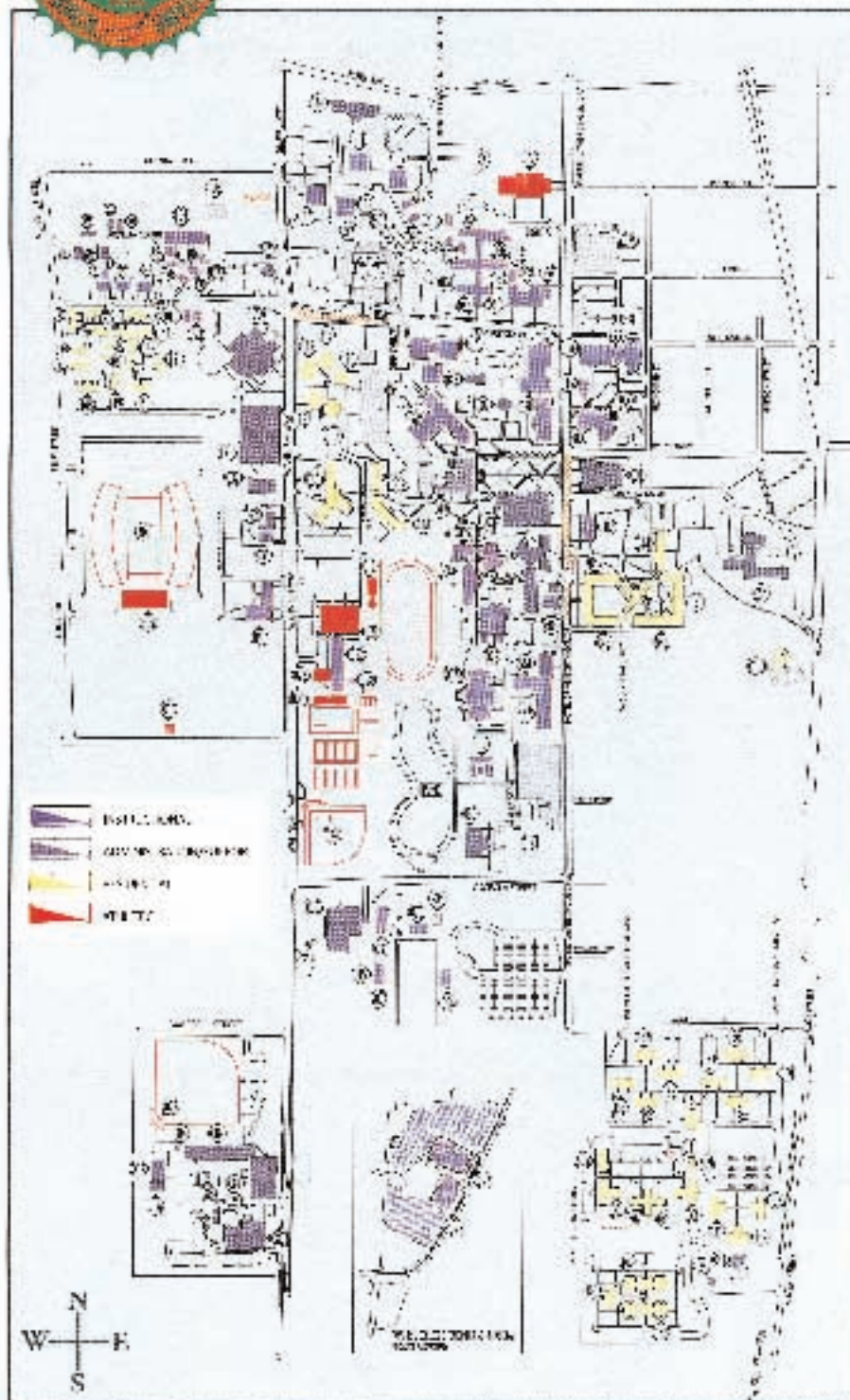
Accounting, B
 Adult and Continuing Education, M
 Afro-American Studies, B
 Agricultural Business, B
 Agricultural Engineering, B
 Agricultural Sciences, B, M
 Applied Social Sciences, M
 Architecture, B, M
 Art Education, B
 Biological and Agricultural Systems Engineering, B
 Biology, B, M
 Biomedical Engineering, M, D
 Business Administration, B, M
 Business Education, B, M
 Cardiopulmonary Sciences
 Chemical Engineering, B, M, Ph.D.
 Chemistry, B, M
 Civil Engineering, B, M, Ph.D.
 Civil Engineering Technology, B
 Community Psychology, M
 Computer Engineering, B
 Computer Information Systems, B, M
 Computer Software Engineering, M
 Construction Engineering Technology, B
 Counselor Education, M
 Criminal Justice, B
 Dramatic Arts/Theatre, B
 Economics, B
 Educational Leadership, M, Ph.D.
 Early Childhood Education, B
 Electrical Engineering, B, M, Ph.D.
 Electronic Engineering Technology, B
 Elementary Education, B, M
 English, B
 English Education, B, M
 Entomology, M, Coop. Ph.D. w/UF
 Environmental Sciences, B, M, Ph.D.
 French, B
 Graphic Communication, B

Graphic Design, B
 Health Care Management, M
 Health Information Management, B
 Health Science, B
 History, B
 Industrial Engineering/Technology, B, M, Ph.D.
 International Agriculture and Business, B.S.
 Jazz Studies, B
 Journalism, B, M
 Landscape Architecture, M
 Landscape Design and Management, B
 Law, J.D.
 Mathematics, B
 Mathematics Education, B, M
 Mechanical Engineering, B, M, Ph.D.
 Music, B
 Music Education, B
 Nursing, B, M
 Occupational Therapy, M
 Pharmacy, P, M, Ph.D.
 Philosophy and Religion, B
 Physical Education, B, M
 Physical Therapy, M
 Physics, B, M, D
 Political Science, B
 Psychology, B
 Public Health, M, DrPH
 Public Relations, B
 School Psychology, M, Ed.S.
 Science Education, B, M
 Secondary Education, M
 Social Science Teacher Education, B, M
 Social Work, B, M
 Sociology, B
 Spanish, B
 Studio/Fine Art, B
 Technology Education, B, M





Florida A&M University



- EDUCATION
- ADMINISTRATION
- STUDENT SERVICES
- ATHLETICS

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| 01 | OFFICE | 117 | UNION HOUSE |
| 02 | UNIVERSITY CENTER | 118 | SCHOOL OF BUSINESS |
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Admissions and Related Matters

GENERAL POLICIES

Florida A&M University uses the FAMU undergraduate application for admission and also accepts the common application form required for undergraduate admission to any one of the state universities. FAMU's application is available on our website at www.famu.edu. You may also check the status of your application online at our website. Applications may also be obtained from FAMU's Office of Admissions and Recruitment by calling (850) 599-3796 or by email at ugrdadmissions@famu.edu

Each applicant must submit a \$25 non-refundable fee with the admission application. 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).

Each student accepted for admission shall, prior to registering, submit a medical history form signed by the student. All entering students born in or after 1957 must provide proof of rubeola (measles) and rubella (German measles) immunity which is mandatory prior to enrollment. Students must provide proof of meningococcal meningitis and hepatitis B immunizations or sign appropriate waiver.

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.

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, baccalaureate and master's degrees. If these documents are not received, it will result in cancellation of admission or registration.

Applicants who are denied will be notified in writing within a reasonable time period following 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.

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 Rule 6C-6.004(1) C, FAC), must complete eight semester hours in one foreign language prior to graduation.

Application Deadlines

| | |
|-----------------------|-------------|
| Fall Term | May 15 |
| Spring Term | November 15 |
| Summer Sessions | March 15 |

Transfer Applicants

| | |
|----------------------------|-------------|
| Pharmacy | February 1 |
| Occupational Therapy | February 15 |

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. International applicants must present scores of at least 550 (Paper-based test), 213 (Computer-based test) and 80 (Internet-based test) on 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 computing the grade point averages, applicants receive additional weight for International Baccalaureate (IB), honors, and Advanced Placement (AP) 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).

| Academic Subject | Units Required |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| English ¹ | 4 |
| Math ² | 3 |
| Natural Science ³ | 3 |
| Social Science ⁴ | 3 |
| Foreign Language ⁵ | 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 | |
| TOTAL | 18 |

¹Three of which must have included substantial writing requirements.

²Algebra 1 and above

³Two of which must have included substantial laboratory requirements.

⁴Includes: history, civics, political science, economics, sociology, psychology and geography.

⁵Both credits must be in the same language. American Sign Language will be accepted in place of a foreign language.

A student applying for admission who has less than a 3.0 average in the required academic units described above must present a combination of high school GPA and entry-level test scores as indicated below. Academic eligibility for admission will be determined according to the following admissions scale:

| | |
|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| | The SAT (Critical Reading + Math sub-scores only)/ACT score must be equally or exceed the corresponding entry in the appropriate column below. |
| If the high school GPA in the required academic courses equals any entry in this column. | |

| GPA | SAT - I | ACT |
|------|---------|-----|
| 2.00 | 1680 | 25 |
| 2.1 | 1620 | 24 |
| 2.2 | 1620 | 24 |
| 2.3 | 1560 | 23 |
| 2.4 | 1510 | 22 |

| | | |
|-----|------|----|
| 2.5 | 1450 | 21 |
| 2.6 | 1450 | 21 |
| 2.7 | 1450 | 21 |

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, and school records maintained as a result of the exceptional child provisions.

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 and Recruitment. 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

A minimum score of 1010 (Critical Reading + Math)/ACT 21, 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 college or university and has earned 12 or more semester hours (except as high school dual enrolled students).

Undergraduate transfer applicants who enter FAMU with junior class standing must have satisfactorily completed the College Level Academic Skills Test (CLAST), institutional exam, in order to be admitted to the upper level and a degree program. For additional information on the CLAST, refer to the index of this catalog.

In addition the guidelines listed herein, an international transfer applicant, whose native language is not English, must present a minimum score of 550 (Paper-based test) or 213 (Computer-based test) or 80 (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. Occupational Therapy, Pharmacy, and Social Work require applicants to complete departmental applications.

The university subscribes to the Articulation Agreement between the State University System and the State Community College System. Under this agreement, graduate of Florida public community colleges are eligible for admission to non-limited access programs at a state university if the student has 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:

1. At least 60 semester hours of academic work exclusive of occupational courses;
2. An approved general education program of at least 36 semester hours;
3. Overall grade point average of at least 2.0 on a 4.0 system;

4. Satisfactory completion of the CLAST for admission to the upper division.

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 Florida public community college.

Undergraduate transfer applicants who have not earned the AA degree from a Florida 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. Must present passing scores on the CLAST prior to admission into the upper division of the university. Applicants entering FAMU must take the CLAST the first time it is offered after initial enrollment;
5. Transfer applicants with less than 60 semester hours must meet first-time-in-college admission requirements in accordance with Admission Rules. Profile Assessment admission standards do not apply.

FAMU requires provisionally admitted transfer students to provide proof of 60 semester hours from previous institution(s) prior to registration.

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. Request military service academic course credits 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 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

The university provides an early admission program for outstanding high school students 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. A recommendation from the principal (or designated representative) is required. Additional requirements are as follows:

- a. High school grade point average of 3.0 or higher in academic subjects.
- b. A minimum score of 1010 on the (Critical Reading + Math) SAT or 21 on the ACT.
- c. 18 units required

Transient Students

Students from other colleges and universities may be permitted to enroll for one term only. Each applicant is required to complete a Special Student Application approved by the parent institution at the time of registration. Enrollment as a transient student in no way implies future admission as a regular student at Florida A&M University.

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 \$25;
2. A 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 and Recruitment. To determine academic eligibility for admissions, academic cre-

dentials 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 to 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.

5. Scores resulting from the SAT or ACT (College Entrance Examination – no exceptions or waivers);
6. Scores resulting from the TOEFL (TOEFL score requirements are: Paper-based 550; Computer-based 213; Internet-based 80)

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.

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 term), must apply for readmission to the university. Such students should secure an application for readmission from the Office of Admissions and Recruitment; apply on-line, or download the application from the FAMU website. An application fee is not required for returning students. Students with permanent university holds or who are not in good standing with the university applications are not processed.

Applications for Admissions

The following applications for admission to Florida A&M University are available through the Office of Admissions and Recruitment, Florida A&M University, Tallahassee, FL 32307-3200 and www.famu.edu.

- a. Florida A&M University Undergraduate Admission Application or the University System of Florida Undergraduate Admission Application
- b. FAM 3200, Eff. 05/83, Rev. 01/94, 8/01 Florida A&M University, Application for Readmission or Reactivation for Undergraduate Students.



Special Admissions

COLLEGE OF EDUCATION

The College of Education regulates and monitors the admissions policies for all undergraduate 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 undergraduate teacher education program must meet 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 a FAMU cumulative grade point average (GPA) of 2.50 or higher;
- Have evidence of successfully taken and passed all subtests of the College Level Academic Skills Test (CLAST) score requirements (exemptions are not applicable for teacher education majors);
- Have met all "Gordon Rule" requirements;
- Have a grade of a "C" or better in the required courses taken as a part of the General Education Preparation Program; and
- Must successfully complete a pre-admission interview by the College of Education Admissions Committee.

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.

- Students completing their freshman and sophomore years at Florida A&M University should apply the first semester of their sophomore year or after having completed at least thirty (30) semester hours of coursework.
- Students transferring from a community or junior college or another four-year institution should apply the first semester they are enrolled at Florida A&M University.
- Students who change their majors to teacher education after enrolling in other programs at Florida A&M University for one or more semesters should apply at the same time that they request approval of a change of major.

Students seeking admission will be classified as:

- Regular Teacher Education Major.
- Students who are interested in majoring in teacher education but do not meet all of the criteria for admission may petition the Admissions Committee to be considered under the ten percent (10%) exception policy. This policy allows the College of Education to admit 10% of the students who do not meet all of the requirements for admission to teacher education.

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 at least fourteen weeks that is required of all teacher education majors. Prerequisites, including the completion and filing of an Application to Student Teaching, for participation in this culminating experience are as follows.

- Admission to teacher education (for students seeking a baccalaureate degree from Florida A&M University);
- A minimum cumulative grade point average (GPA) of 2.50;
- Completion of all prerequisite courses; and
- Evidence of having passed all parts of the College Level Academic Skills Test (CLAST) examination, and all parts of the Florida Teacher Certification Examination (FTCE), the semester before student teaching.

Application for student teaching must be made during the semester preceding the semester in which the student desires to complete the student teaching experience, with one exception. Students who desire to participate in student teaching during the Fall Semester of any academic year must apply during the preceding Spring Semester. Deadline dates are: March 1 for the next Fall Semester and October 1 for the next Spring Semester.

Admission to teacher education and student teaching is administered through the College of Education's Center for Teacher Preparation and Career Development. Application forms and information concerning these processes may be obtained through that office, which is located in the Gore Education Center, Unit B, Room 203.

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Doctor of Pharmacy

Pre-Pharmacy Program Admissions Criteria- Admission to the Pre-Professional program is done 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 indicating that interest 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 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.

The recommended high school background for students planning to enter the pre-professional program should have the following 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. All completed applicant folders are reviewed by the College of Pharmacy's Admissions and Academic Standards Committee. In recognizing its responsibility to impact upon the shortage of health professions, the committee considers the applicant's academic background, character, motivation, commitment, extra curricular 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.

the university are outlined under the heading "Special Admissions, Requirements of the Colleges and Schools."

UNDERGRADUATE ADMISSIONS

A student seeking admission to a professional undergraduate division in the School of Allied Health Sciences must:

1. Have completed and maintained a grade point average of 2.5 or better in all pre-professional course work.
2. Secure and complete an application for admission to the professional division of his or her choice within deadline as prescribed by each division.
3. Submit an autobiographical essay of at least 300 words to the division director, along with the completed application.

Admission to a professional undergraduate division 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 Occupational and Physical Therapy: Have a combined score of a 1,000 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, 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 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, Research, and Continuing Education.

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 professional division of his/her choice. Admission to the university does not guarantee acceptance into any of the professional divisions. The requirements and procedures for admissions to

SCHOOL OF ARCHITECTURE

The School of Architecture is a professional school committed to preparing its graduates for excellence in the practice of architecture and landscape architecture. 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 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**
- C. Master of Landscape Architecture** (professionally accredited program)

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 section in this catalog under the "School of Graduate Studies, Research, and Continuing Education."

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. LOWER DIVISION APPLICANTS

A. Unconditional Admission

1. Applicants who have scored a minimum of 1010 on the critical reading and mathematics section of SAT or 21 on the ACT are given preference in 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 2.5 or above are considered acceptable candidates for admission to the program.
3. A combination of test scores and high school performance will be evaluated on an individual basis.

B. Conditional Admission

1. Applicants who have maintained a cumulative average of 2.5 or above during the freshman year should request admission to the lower division nursing major.

C. Junior College, Community College, and Transfer of Other College Level Credits

1. Applicants must have earned a 2.5 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 in the upper division course of study in nursing.
3. Preference will be given to those applicants who have followed a pre-nursing or science course of study.

II. ADMISSION TO THE UPPER DIVISION OF NURSING

A. Please note that admission to the School of Nursing does not guarantee admission to the upper division.

B. Before admission to the upper division, each student must have:

1. Earned a 2.5 or greater cumulative grade point average, for all college work attempted;
2. Earned a grade of "C" in the required behavioral, social, and natural science courses;

3. Completed selected lower level general courses required by the School of Nursing;
4. Submit a completed School of Nursing application packet; and
5. Received the recommendation of the Admission, Retention, Progression, and Graduation Committee.
6. See "Upper Division Admission" requirements for further details.

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, 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.



Registration and General Regulations

Office of the University 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; responsible for the maintenance and security of student records; provide counseling and certification to students and dependents of veterans receiving veteran benefits.

The specific responsibilities of the office are 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 change of grades and acceptance of transfer credits; prepare and distribute 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.

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 1007. 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.

To qualify as a Florida resident for tuition purposes in accordance with Rule 6A-10.044 of the Florida Administrative Code, students must be a United States citizen, resident alien, parolee, Cuban national, Vietnamese refugee, or other refugee or asylee so designated by the United States Immigration and Naturalization Service,

And

Have established a legal residence in this state and maintained that legal residence for 12 months prior to the first day of class in the term in which they are seeking Florida resident classification. Students' residence in Florida must be as a bona fide domiciliary rather than for the purpose of maintaining a mere temporary residence or abode incident to enrollment in an institution of higher education, and should be demonstrated as indicated below (for dependent students as defined by Internal Revenue Service regulations, a parent or guardian must qualify),

And

Submit the following documentation (in the case of a dependent student, the student must submit the-parent's documentation) during the residency reclassification period which is one month prior to the first day of class for the term for which residency status is sought (note: the various summer terms are considered one semester for the purpose of establishing residency):

- 1) Documentation establishing legal residence in Florida (this document must be dated at least one year prior to the first day of classes of the term for which resident status is sought). The following documents

will be considered in determining legal residence:

- a) Declaration of Domicile.
 - b) Proof of purchase of a home in Florida, which you occupy as your residence.
 - c) Proof that the student has maintained residence in the state for the preceding year (e.g., rent receipts, employment records).
- 2) Documentation establishing bona fide domicile in Florida that is not temporary or merely incident to enrollment in a Florida institution of higher education. The following documents will be considered evidence of domicile even though no one of these criteria, if taken alone, will be considered as conclusive evidence of domicile:
 - a) Declaration of Domicile
 - b) Florida voter's registration
 - c) Florida vehicle registration
 - d) Florida driver's license.
 - e) Proof of real property ownership in Florida (e.g., deed, tax receipts).
 - f) A letter on company letterhead from an employer verifying permanent full-time or part-time employment in Florida for the 12 consecutive months before classes begin.
 - g) Proof of membership in or affiliation with community or state organizations or significant connections to the state.
 - h) Proof of continuous presence in Florida during periods when not enrolled as a student.
 - i) Proof of former domicile in Florida and maintenance of significant connections while absent.
 - j) Proof of reliance upon Florida sources of support.
 - k) Proof of domicile in Florida of family.
 - l) Proof of admission to a licensed practicing profession in Florida.
 - m) Proof of acceptance of permanent employment in Florida.
 - n) Proof of graduation from high school located in Florida.
 - o) Any other factors peculiar to the individual which tend to establish the necessary intent to make Florida a permanent home and that the individual is a bona fide Florida resident, including the age and general circumstances of the individual.
 - 3) No contrary evidence establishing residence elsewhere.
 - 4) Documentation of dependent/independent status (copy of Internal Revenue Service tax return). Note: federal income tax returns filed by resident(s) of a state other than Florida disqualify such students for in-state tuition, unless said student's parents are divorced, separated, or otherwise living apart and either parent is a legal resident of Florida.

Or

Become a legal resident and be married to a person, who has been a legal resident of the State of Florida for the required 12-month period,

Or

Be an active member of the Armed Forces (including National Guard) on active duty stationed in Florida, and/or active duty military whose home of record is Florida (or a spouse/dependent),

Or

Be a member of the full-time instructional or administrative staff of a state public school, community college, or university in Florida, or a spouse or dependent,

Or

Be a dependent and have lived five years with an adult relative who has established legal residence in Florida,

Or

Be a person who was enrolled as a Florida resident for tuition purposes at a Florida institution of higher education, but who abandoned Florida residency and then reenrolled in Florida within 12 months of the abandonment,

Or

Be a Latin American/Caribbean scholar,

Or

Be a United States citizen living on the Isthmus of Panama and have completed 12 consecutive months of college work at the Florida State University Panama Canal Branch, or a spouse or dependent,

Or

Be an active member of the armed services (including the National Guard) of the United States and their spouse attending a public community college or university within 50 miles of the military establishment where there are stationed, if such military establishment is within a county contiguous to Florida.

Or

Be a graduate student of the Southern Regional Education Board's Academic Common Market attending Florida's state universities.

Or

Under FAC 6A-10.044 (Reciprocity between SUS and Public Community Colleges), the universities are not required to re-evaluate the classification for students who transfer from another public in-state institution.

Or

Be a full-time employee of a state agency or political subdivision of the state when student fees are paid by the state agency or political subdivision for the purpose of job related law enforcement or corrections training.

Or

Be a qualified beneficiary under the Florida Pre-Paid Postsecondary Expense Program per Florida Statutes 240.551 (7) (a), if not otherwise eligible.

Or

Be a McKnight Fellowship Recipient,

And

Make a statement as to the length of residence in Florida and qualification under the above criteria. Students are encouraged to stop by the Registrar's Office, Room 112, Foote-Hilyer Administration Center and pick up a copy of the residency reclassification procedures document. This document will explain the residency reclassification process, clarifies who is eligible for reclassification, states the documents required, and gives the time frame residency documents/packets will be received by the Registrar's Office.

Additionally, students wishing to change from out-of-state residency for tuition purposes shall apply to the Admissions Office if they have not yet enrolled, or to the University Registrar if they are already enrolled. If the request for reclassification and the necessary documentation are not received by the Registrar's Office by the deadline specified in the University Calendar to be reclassified, the student will not be reclassified for that term and would need to request reclassification the following term.

Appeal from a determination denying "resident for tuition purposes" status to applicant, therefore, may be initiated after appropriate administrative remedies are exhausted by the filing of a petition for review pursuant to Florida Statutes with the University Residency Appeals Committee.

The Family Educational Rights and Privacy Act of 1974

(Student Records Management Procedures)

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, and the Departments regulations are found at 34CFR Part 99 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:

- Student full name
- Student telephone listings
- Major field of study
- Dates of attendance
- Enrollment Status
- Participation in Officially Recognized collegiate sports
- Degrees and academic honor awards received
- Most recent educational institutions attended prior to FAMU

Enrolled students 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 they refuse to permit the University to disclose such information. The University will not release any further disclosures of director 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.

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.

Use of Educational Records

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

- University officials shall have access to student education records for legitimate educational purposes.
- Under the following circumstances, University officials may make disclosures of personally identifiable information contained in the student's education records with the consent of the student:
 - a) To another college or university where the student seeks or intends to enroll.
 - 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 accrediting organizations to carry out their accrediting functions.
 - f) When a student reaches the age of 18 or begins attending a

- postsecondary institution regardless of age, FERPA rights transfer from the parent to the student.
- g) Parents may obtain directory information at the discretion of the institution.
- h) Parents may obtain non-directory information (grades, GPA, etc.) only at the discretion of the institution **AND** after it has been documented that their child is their legal dependent or with written consent from the student.
- i) The spouse of a student has no rights under FERPA to access the student's education record. The University will exercise this option only on the condition that the evidence of such dependency is furnished to the University Registrar.
- j) 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.
- k) The result of a disciplinary proceeding may be released to the victim on the student's crime of violence.
- l) To comply with an ex parte order from the Office of the Attorney General (or designee).
- m) To state or local officials in compliance with state laws adapted prior to November 19, 1974.

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.

- 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.
- 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 signature and date 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.

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 their 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 institutions 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 Department of Education (FLDOE);
- Under contract to the FLDOE of FGCU in any faculty or staff position;
- 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 FLDOE 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

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 of this catalog. Students are responsible for complying with all regulations governing registration, change-of-schedules (drop/add), tuition payment, and other requirements described either in this bulletin or advised by the administration otherwise. Every registrant must arrange a class schedule with a faculty adviser at the time and place designated.

Web Registration-Degree seeking students are encouraged to take advantage of the university's web registration system via OurFAMU. Students are able to register for classes from home or anywhere in the world. Students may consult the schedule of class booklet and 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.

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

It should be remembered that credits earned by non-degree students are not to be considered degree credits. In order to receive degree credits, the student must submit an application for admission, and the required \$20.00 fee and qualify for admissions to a degree program. To qualify, all special 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.

Community College Dual Enrollment Registration-The student must obtain approval from the designated representatives of the institution. Community College students must have degree seeking status at the Community College and possess at least a 2.00 grade point average. The student will be expected to follow prescribed registration procedures in the Special Student Registration section of the Schedule of Classes booklet.

Leon County High School Students Dual Enrollment Registration-To receive dual enrollment credit, students must adhere to the rules and regulations of the Leon County School Board, the Board of Governors, and the Florida Legislature. The student must be currently enrolled in a secondary school operated by the Leon County School Board. The student must also possess a grade point average of 3.2 or better, certified by a high school counselor, and classified as a high school junior or senior. Students will be enrolled at no cost to either the student or to the district. The University shall waive application, matriculation and/or tuition fees for students admitted to either dual enrollment or early admissions. To remain eligible, the student must obtain a 2.0 grade point average in university course work. Students in Leon County public high schools interested in dual enrollment course work should consult their guidance counselor for further information.

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 share 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 State Community College System. Under this agreement, graduates of Florida's public community 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 over sight 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 County High School Students Dual Enrollment Registration-The high school dual enrollment agreement between the Leon County School Board, the Board of Governors, the Florida Legislature and the University allows highly qualified high school students to be enrolled in a University level course(s). Students must possess a grade point average of 3.2 or better, certified by a high school counselor, and classified as a high school junior or senior. Students will be enrolled at no cost to either the student or to the district. The University shall waive application, matriculation and/or tuition fees for students admitted to either dual enrollment or early admissions. To remain eligible, the student must obtain a 2.0 grade point average in university course work.

The Leon county high school dual enrollment agreement is reviewed and re-authorized bi-annually by the Leon County School Board and the University. After review, the agreement must be signed by the Superintendent of the Leon County School System and the President of the University. The term stipulated in the agreement that allow 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 Masters 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.

***Doctor of Philosophy Degree in Entomology – Also in catalog 2006-2008 pp. 139, 140, and 265

***Doctor of Philosophy Degree in Nursing Science – Also in catalog 2206-2008, pp. 340

FAMU-FSU Cooperative Program

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

- I. Permission is to be given by the academic adviser 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.
- II. No more than half of the credit hours taken by a student during a given term may be taken at FSU.
- III. Whenever possible within the policy of FAMU, courses taken at FSU may be graded on an S-U basis.
- IV. Courses taken at FSU should be those not offered at FAMU.
- V. Student credit hours generated by students taking courses at FSU are treated the same as credits taken at FAMU.
- VI. Because all fees are paid at FAMU, students will not be required to pay additional registration fees for courses taken at FSU.

Pick up an application for the FAMU/FSU COOP from the Registration Office, Suite 111 FHAC and have it approved by your department, dean and the Provost.

Stop by the **FAMU HEALTH CENTER** and request a copy of your Immunization records (show proof of your immunization records to **THARGARD HEALTH CENTER AT FSU**). Bring the health clearance from FSU to regular registration in the Grand Ballroom.

Secure an approval on your FAMU/FSU COOP registration form or an add/drop slip from the FSU department for the course you are planning to register for.

Please note that you will not be able to register for courses at FSU if you are on a financial hold. In order to register, you must present a clearance from FSU Student Accounts Office before your COOP forms are processed, for registration.

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."

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, and courses requiring directed individual instruction.

State employees using fee waivers must:

- 1) Present the approved tuition waiver forms to the registration representative.
- 2) Complete the one-page Special Student Application form. The form may be obtained from the Registrar's website at www.famu.edu. (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) Pickup the class schedule printout and check for accuracy.
- 6) Take the class schedule printout back to the registration representative to have the late fee waiver attached.
- 7) Go directly to Student Financial Services and turn the approved tuition waiver form for fee validation in the 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/reinstatement 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. 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, and courses requiring directed individual instruction. Certain courses require permission of the department for enrollment therein. Individuals who attempt 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.

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 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.

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.

Cancellation of Registration-The University may cancel the registration of a student whose registration fees have not been paid in full by the

deadline as indicated in the university calendar. Students whose registration is canceled may apply for reinstatement but must do so before the published deadline. Cancellation, however, does not include students who have received approved deferred payment status, financial aid, (i.e., scholarships, veterans 60 day deferments, third party billing, etc.) to the Office of Student Financial Services. Students whose registration is cancelled are not liable for registration fees for the applicable term.

Reinstatement of Students Whose Registration Has Been Canceled-Students whose registration has been canceled due to their failure to pay registration fees by the deadline may be reinstated upon the payment of all tuition and fees and a late payment fee of \$100.00.

Students who fail to reinstate their registration by the published deadline shall be dismissed from the university, including university housing, and shall be denied those benefits which are offered to students who are officially enrolled.

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.

No student will receive credit for any course or courses for which the student is not properly registered, although the student attends class and a grade is reported to the university registrar.

Curriculum Changes-In response to changes in education and in order to keep in line 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 grade point average required, total number of credit hours required, etc.

The curriculum in the catalog of the year in which the student enters the university or a Florida community college is the one under which he or she normally should 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 and notification to the university registrar.

If a student intends to change his/her major within his present School/College or to a different School/College, he must first obtain a copy of latest Florida A&M University transcripts from his current Dean's Office. The student must then complete a change of Major Form and meet with an advisor in the department of his/her intended major. If accepted by the new College/School, the new Dean must complete the Change of Major form. This form must then be sent to the Registrar's Office to complete the process. If the student has not been accepted into the new department, by registration time, the student must still seek advisement from this current faculty advisor.

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 requirement for graduation in each major in order to receive degrees in both majors. See requirement for double major elsewhere in this publication.

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 may be required to main-

tain full-time loads as indicated above. The minimum load for full-time benefits from the Veterans Administration is 12 credit hours.

Academic Progress Policy- Undergraduate

A cumulative grade point average of 2.0 is required for graduation. Thus, it is desirable that each student earns a 2.0 term average during each period of enrollment at the university. A student who maintains a cumulative average of 2.0 or better will not be subject to academic suspension. However, in any term in which the student's cumulative average drops below 2.0, some appropriate action is taken, i.e. warning, probation, suspension, or dismissal. Minimum standards for academic progress are as follows:

Lower Level Students

- A. (0-29 hours attempted) A freshman student whose cumulative average is less than 2.0 will be permitted to remain at the university under continuous counseling and academic advisement. The student will receive a warning each period of enrollment that his or her term average falls below 2.0. If the cumulative average is below 2.0 after 29 hours attempted, the student will be placed on academic probation and must earn a minimum of a 2.0 term average during the next period of enrollment. Failure to do so will result in academic suspension from the university.
- B. (30-59 hours attempted) A sophomore student must maintain a 2.0 term average, but no action will be taken as long as the cumulative average is 2.0 or above. Otherwise, a student who fails to earn a 2.0 term average will be placed on probation the first time and suspended any term thereafter that a 2.0 term average is not earned.

Upper Level Students (60 hours and above attempted)

At the end of 59 hours attempted, a student must have a 2.0 cumulative average and maintain it each term. A student whose cumulative average is less than 2.0, but who earns at least a 2.0 term average, will be allowed to remain in school but placed on probation. Failure to earn a term average of at least 2.0, with the cumulative average being below 2.0, will result in probation or suspension.

Academic Probation, Suspension, and Dismissal

The first time a student fails to meet the minimum standards of progress, he or she will be placed on academic probation. All subsequent failures to meet minimum standards of progress will result in academic suspension of at least one (1) semester. A student will only be permitted to return to the university following 2 academic suspensions. The third academic suspension is a permanent suspension or dismissal.

Procedures for Petitioning for Readmission

A student who has been permanently suspended (dismissed) from the university for academic reasons must remain out for two (2) terms and may petition the office of admissions for readmission during the second term of his or her suspension. Any petition for readmission must be filed at least (6) weeks prior to the beginning of the term in which the student wishes to re-enroll.

The student's readmission petition file will be made up by the office of admissions and must contain:

1. A letter of petition for readmission from the student
2. Letters of recommendation for readmission from:
 - a. The student's academic adviser
 - b. The student's department head
 - c. The student's dean
 - d. Any other letter(s) of support the student wishes to submit.
 The student must request that these individuals send letters on his or her behalf to the Director of Admissions, Room G-9, Foote Hilyer Administration Building, Florida A&M University.
3. A copy of the student's academic record obtained from the university registrar.

The student's readmission petition file will be forwarded to the university Admissions Committee for review. This committee will recommend approval or disapproval to the Vice President for Academic Affairs. The decision made on the student's readmission will be final.

Transfer of Credits

A student who has attended any regionally accredited college or university and has earned 12 or more semester hours is considered a transfer student when applying to enter Florida A&M University. Transfer students admitted to FAMU are required to have official copies of their transcripts from previous institutions on file in the Admissions Office prior to evaluation. Credits are transferred based on the following:

1. The institution from which the student wish to transfer is regionally accredited.
2. The overall grade point average is 2.00 or better on the transfer transcript.
3. The grades of individual courses to be transferred are "C" or better, or "S" or "P".

Transfer students academic records will be evaluated prior to the student's arrival on the University Campus, if admitted prior to three weeks of the term beginning.

Credits earned from Florida public institutions will be evaluated on the basis of the Florida Statewide Course Numbering System. Those courses considered equivalent will be accepted for transfer credit at the level at which the course was classified by the institution originally awarding the credit. Courses are considered equivalent when the prefix and the last three numerical digits of the course number are the same.

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.

- I. **Transient Students:** Florida A&M University students who are permitted to attend other institutions for a term must obtain a transient form from their academic area and secure appropriate signatures prior to leaving FAMU. Students who attend other institutions without permission from their academic area, may not have their credits accepted. Transient forms 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)
 - * Transient application is turned in prior to term for which the student is applying
- II. **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 better. 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.
- III. **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. These opportunities include the following:
 1. **Dual Enrollment**
This program allows eligible high school students to earn college level credits in a college or university.
 2. **Credit by Examination**
Students who are enrolled or planning to enroll at FAMU may earn credit for certain introductory courses through the following credit by examination programs:
 - A. Advanced Placement Program (AP)
 - B. College Level Examination Program (CLEP)
 - C. International Baccalaureate Program (IB)
 - D. DANTES
 - E. Department Examinations and Dean Waivers
 - F. Military Service School
 - G. Excelsior

Awarding Credit on a Non-Credit Basis

The Other than awarding credit through mechanisms such as nationally recognized credit by exams such as CLEP and departmental exams referenced in this catalog, and the award of credit for attainment of National Board Teacher Certification, the University does not award academic credit for course work taken on a noncredit basis

Florida A&M University Credit-By-Examination List (AP, CLEP, IB, DANTES, Excelsior)

| Advanced Placement Exam | Passing Score | FAMU Equivalent | Min. # Credit Hours Acc. | | | | |
|-----------------------------------|---------------|---------------------------------------------------------------|--------------------------|----------------------------------------------------|----------------------|--------------------------------------------------------------------------------|---------------------------------|
| | | | | Psychology | 4 | PHY 2048C or | |
| | | | | Spanish | 3 or higher | PHY 2048/2048L | 4 |
| | | | | Statistics | 3 | PSY 2012 or PSY 2013 | 3 |
| | | | | Studio Art: | 3 | SPN 1100 | 4 |
| | | | | Drawing Portfolio | 4 or 5 | SPN 1100 & SPN 1101 | 8 |
| | | | | 2-D Design Portfolio | 3 or higher | STA 2014 | |
| | | | | 3-D Design Portfolio | 3 | No direct equivalent | 3 |
| | | | | United States History | 3 | No direct equivalent | 3 |
| Art History | 3 | ARH 2000 | 3 | World History | 4 | AMH 2000 | 3 |
| | 4 | ARH 2050/ARH 2051 | 6 | | | AMH 2010 & | |
| Biology | 3 or 4 | BSC 1005C | | | | AMH 2020 | 6 |
| | | or BSC 1005/1005L | 4 | | | WOH 1022 | 3 |
| | 5 | BSC 1010C | | CLEP | Passing Score | FAMU Equivalent | Min. # Credit Hours Acc. |
| | | or BSC 1010/1010L | | | | | |
| | | and BSC 1011C | | Accounting, Principles of | 50 | ACG 2001 | 3 |
| | | or BSC 1011/1011L | 8 | Algebra, College | 50 | MAC 1105 | 3 |
| Calculus (AB) | 3 or higher | MAC 2311 | 4 | Algebra-Trig., College | 50 | MAC 1147 or | |
| Calculus (BC) | 3 | MAC 2311 | 4 | American Government | 50 | MAC1114 | 4 |
| | 4 or higher | MAC 2311/MAC 2312 | 8 | American Literature | 50 | POS 2041 | 3 |
| Chemistry | 3 | CHM 1020C | | | >50 | AML 2000 | 3 |
| | | or CHM 1020/1020L | 4 | Analyzing and Interpreting Literature | 50 or higher | AML 2010 & | |
| | 4 | CHM 1045C | | | | AML 2020 | 6 |
| | | or CHM 1045/1045L | 4 | Biology, General | ≥ 50 | No direct equivalent. Recommend American or English Literature exams | |
| | 5 | CHM 1045C or CHM 1045/1045L and | | Business Law, Intro. to | ≥ 50 | BSC 1005 | |
| | | CHM 1046 or CHM1046/1046L | 8 | Calculus w/Elem. Func. | ≥ 50 | (No lab credit) | 3 |
| Computer Science (A) | 3 | CGS 1075 | 3 | Chemistry, General | ≥ 50 | BUL 2241 | 3 |
| Computer Science (AB) | 3 | CGS 1076 | 3 | Educ. Psy., Intro. to | ≥ 50 | MAC 2233 | 3 |
| Economics: Macro | 3 | ECO 2013 | 3 | English Comp. w/ Essay | ≥ 50 | CHM 1020 or | |
| Economics: Micro | 3 | ECO 2023 | 3 | English Literature | 50 | CHM 1025 (No lab.) | 3 |
| English Lang. & Comp. | 3 | ENC 1101 | 3 | English Literature | ≥ 50 | EDP 2002 | 3 |
| | 4 or higher | ENC 1101 & ENC 1102 | 6 | French | 50 | ENC 1101 | 3 |
| English Lit. & Comp. | 3 | ENC 1101 | 3 | French | 52 | ENL 2000 | 3 |
| | 4 | ENC 1101 and either ENC 1102 or LIT 2005 | 6 | Freshman Composition | | ENL 2011 or ENL 2012 and ENL 2022 | 3 |
| Environmental Science | 3 or higher | ISC 3051 | 3 | German | 50 | FRE 1100 | 4 |
| European History | 3 | EUH 2009 | 3 | German | 63 | FRE 1100 & FRE 1101 | 8 |
| | 4 | EUH 2000 & 2001 | 6 | History of the U.S. I: Early Colonizations to 1877 | >50 | No direct equivalent. Recommend English Composition with Essay instead. | |
| French | 3 | FRE 1100 | 4 | History of the U.S. II: 1865 to Present | >50 | GER 1100 | 4 |
| | 4 or 5 | FRE 1100 & 1101 | 8 | Human Growth & Dev. | >50 | GER 1100 & GER 1101 | 8 |
| French Literature | 3-4 | FRE 3300 | 3 | Humanities | ≥ 50 | AMH 2010 | 3 |
| | 5 | FRE 3300 & 3 credits of Introductory Lit. | 6 | Info. Systems and Computer Applications | ≥ 50 | AMH 2020 | 3 |
| German | 3 | GER 1100 | 4 | Macroeconomics, Prin. of | >50 | DEP 2004 | 3 |
| German | 4 or 5 | GER 1100 & GER 1101 | 8 | Management, Prin. of | ≥ 50 | No direct equivalent. Interdisciplinary exam: 50% literature and 50% fine arts | 3 |
| German Literature | 3-4 | GER 3300 | 3 | Marketing, Principles of | ≥ 50 | CGS 1077 | 3 |
| | 5 | GER 3300 & 3 credits of Introductory Lit. | 6 | Mathematics, College | ≥ 50 | ECO 2013 | 3 |
| Govt. & Politics: Comparative | 3 | CPO 2002 | 3 | Microeconomics, Prin. of | >50 | MAN 3021 | 3 |
| Human Geography | 3 | GEO 2400 | 3 | Natural Science | ≥ 50 | MAR 3011 | 3 |
| Latin (Vergil) | 3 or higher | LNW 1660 | 3 | Psychology, Introductory | >50 | MGF 1107 | 3 |
| Latin (Literature) | 3 or higher | LNW 1700 | 3 | Social Science and History | ≥ 50 | ECO 2023 | 3 |
| Music Theory | 3 or higher | MUT 1001 or MUT 1111 & MUT 1241 (oral/non-oral = 3 or higher) | | Sociology, Introductory | ≥ 50 | Interdisciplinary exam: 50% Biological Science and 50% Physical Science | |
| Physics B | 3 | PHY 2053C or PHY 2053/2053L | 4 | | | PSY 2012 or PSY 2013 | 3 |
| | | PHY 2053C or PHY 2053/2053L and PHY 2054C or PHY 2054/2054L | 8 | | | Interdisciplinary exam: 40% History and 60% Social Sciences | |
| Physics C: Electricity /Magnetism | 3 | PHY 2054C or PHY 2054/2054L | 4 | | | SYG 2000 | 3 |
| | 4 or higher | PHY 2049C or PHY 2049/2049L | 4 | | | | |
| Physics C: Mechanics | 3 | PHY 2053C or PHY 2053/2053L | 4 | | | | |

| | | | | | | | | |
|---------------------------------------------------|-------------|---------------------------|----|---------------------|-----|--------------------------|----|--|
| Spanish | 50 | SPN 1100 | 4 | | | PHY 2053/2053L | | |
| Spanish | 54 | SPN 1100 & SPN 1101 | 8 | | | & PHY 2054C or | | |
| Trigonometry | ≥ 50 | MAC 1114 | 3 | | | PHY 2054/2054L | 8 | |
| Western Civilization I: Ancient Near East to 1648 | >50 | EUH 2000 | 3 | Psychology | 4* | PSY 2012 or PSY 2013 | 3 | |
| Western Civilization II: 1648 to Present | >50 | EUH 2001 | 3 | Psychology | 5-7 | PSY 2012 or PSY 2013 | 3 | |
| | | | | | | & one additional | | |
| | | | | | | PSY course | 6 | |
| | | | | Social Anthropology | 4* | ANT 2410 | 3 | |
| | | | | Social Anthropology | 5-7 | ANT 2410 & one | | |
| | | | | | | additional ANT course | 6 | |
| | | | | Spanish | 4* | SPN 1100 & SPN 1101 | 8 | |
| | | | | Spanish | 5-7 | SPN 1100, SPN 1101 | | |
| | | | | | | & SPN 2200 | 12 | |
| Biology | 4* | BSC1005C or | | Theatre Arts | 4* | THE 2000 or THE 2020 | 3 | |
| | | BSC 1005/1005L | 4 | Theatre Arts | 5-7 | THE 2000 or THE 2020 | | |
| Biology | 5 or higher | BSC 1005C & BSC | | | | & 3 hrs. elective credit | 6 | |
| | | 1010C or | | Visual Arts | 4* | No direct equivalent | 3 | |
| | | BSC 1005/1005L & | | Visual Arts | 5-7 | No direct equivalent | 6 | |
| | | BSC 1010/1010L | 8 | | | | | |
| Chemistry | 4* | CHM 1020C or | | | | | | |
| | | CHM 1020/1020L | 4 | | | | | |
| Chemistry | 5 or higher | CHM 1020C & | | | | | | |
| | | CHM 1045C or | | | | | | |
| | | CHM 1020/1020L & | | | | | | |
| | | CHM 1045/1045L | 8 | | | | | |
| Computer Science | 4* | CGS 1078 | 3 | | | | | |
| Computer Science | 5 or higher | CGS 1078 & one CGS | | | | | | |
| | | elective course | 6 | | | | | |
| Design Engineering | 4* | ETI 2410 | 3 | | | | | |
| Design Engineering | 5 or higher | ETI 2410 & one ETI | | | | | | |
| | | elective course | 6 | | | | | |
| Economics | 4* | ECO 2000 | 3 | | | | | |
| Economics | 5 or higher | ECO 2013 & ECO 2023 | 6 | | | | | |
| English A1 | 4* | ENC 1101 | 3 | | | | | |
| English A1 | 5 or higher | ENC 1101 & ENC 1102 | 6 | | | | | |
| Environmental Systems | 4* | ISC 2050 | 3 | | | | | |
| Environmental Systems | 5 or higher | ISC 2050 | 6 | | | | | |
| French | 4* | FRE 1100 & FRE 1101 | 8 | | | | | |
| French | 5-7 | FRE 1100, FRE 1101 | | | | | | |
| | | & FRE 2200 | 12 | | | | | |
| Further Mathematics (Advanced Mathematics) | 4* | MHF 1202 | 3 | | | | | |
| Further Mathematics (Advanced Mathematics) | 5 or higher | MHF 1202 & | | | | | | |
| | | MHF 1209 | 6 | | | | | |
| Geography | 4* | GEA 2000 | 3 | | | | | |
| Geography | 5 or higher | GEO 2200 & GEO 2400 | 6 | | | | | |
| German | 4* | GER 1100 & GER 1101 | 8 | | | | | |
| German | 5-7 | GER 1100, GER 1101 | | | | | | |
| | | & GER 2200 | 12 | | | | | |
| History | 4* | WOH 2030 | 3 | | | | | |
| History | 5 or higher | WOH 2030 and 3 credits of | | | | | | |
| | | lower-level | | | | | | |
| | | History elective | 6 | | | | | |
| Math Methods | 4* | MAC 1105 | 3 | | | | | |
| Math Methods | 5 | MAC 1105 & | | | | | | |
| | | MAC 1140 | 6 | | | | | |
| Math Methods | 6-7 | MAC 1140 & | | | | | | |
| | | MAC 2233 | 6 | | | | | |
| Math Studies | 4* | MAT 1033 | 3 | | | | | |
| Math Studies | 5 or higher | MAT 1033 & | | | | | | |
| | | MGF 1106 | 6 | | | | | |
| Mathematics | 4* | MAC 1147 | 4 | | | | | |
| Mathematics | 5 | MAC 1147 & | | | | | | |
| | | MAC 2233 | 7 | | | | | |
| Mathematics | 6-7 | MAC 2233 & | | | | | | |
| | | MAC 2311 | 7 | | | | | |
| Music | 4* | MUL 1010 | 3 | | | | | |
| Philosophy | 4* | No direct equivalent | 3 | | | | | |
| Philosophy | 5 | No direct equivalent | 6 | | | | | |
| Physics | 4* | PHY 2020C or | | | | | | |
| | | PHY 2020/2020L | 4 | | | | | |
| Physics | 5 | PHY 2020C or | | | | | | |
| | | PHY 2020/2020L | | | | | | |
| | | & PHY 2009 | 8 | | | | | |
| Physics | 6-7 | PHY 2053C or | | | | | | |

4* = Diploma holders only

DANTES Subject Standardized Tests
3 sem. hrs./per exam

Minimum Score FAMU Equiv.

| | | |
|-------------------------------|-----|-------------|
| Business Math | 48 | QMB 2001 |
| Criminal Justice | 49 | CCJ 3020 |
| Environment and Humanity | 46 | EVR 3017 |
| Foundations of Education | 46 | EDF 2000 |
| Fundamentals of Counseling | >45 | PCO 2202 |
| General Anthropology | 47 | ANT 2000 |
| Here's to Your Health | 48 | HSC 1100 |
| Human Resources Mgt. | 46 | MAN 3300 |
| Human/Cultural Geography | 48 | GEO 2400 |
| Introduction to Business | 46 | GEB 2011 |
| Intro. to Law Enforcement | 45 | CCJ 3100 or |
| | | CCJ 3000 |
| Lifespan Dev. Psychology | >46 | DEP 2004 |
| Money and Banking | 48 | BAN 2501 |
| Physical Geology | 46 | GLY 2000 |
| Prin. of Financial Accounting | 49 | ACG 2001 |
| Prin. of Physical Science I | >47 | PSC 2121 or |
| | | PSC 2341 |
| Prin. of Statistics | 48 | STA 2014 |

Check at <http://www.getcollegedcredit.com/materials.html> for more information

Excelsior College Exam

Minimum Score FAMU Equiv.

| | | |
|------------------------------------|----|----------------|
| Abnormal Psychology | ** | CLP 4140 |
| English Composition | ** | ENC 1101 for C |
| | | ENC 1101 & |
| | | ENC 1102 for B |
| | | (6 credits) |
| Ethics: Theory and Practice | ** | PHI 3630 |
| Foundations of Gerontology | ** | GEY 2000 |
| Human Resources Management | ** | MAN 2300 |
| Life Span Developmental Psychology | ** | DEP 2004 |
| Microbiology | ** | MCB 3000 |
| Psychology of Adulthood and Aging | ** | DEP 2401 |

** Scores are based on the CLEP cut score for subject examinations.

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, DANTES, or Excelsior) may not be accepted or duplicated.

Department Examinations and Dean 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. Interested students are encouraged to contact the appropriate departments.

Academic deans may determine if a course/courses may be waived for a student in technical areas of studies based on documented life experience and/or proficiencies.

Military Services Schools

Florida A&M University recognizes the recommendations for college level credits published by the American Council on Education (ACE): The Guide to the Evaluation of Educational Experiences in the Armed Services. Students with military experiences are encouraged to forward their military transcripts to the Registrar's Office or the Department of Military Service for evaluation. Credits may be awarded for completed Military Service School Courses on the basis of the ACE guide. Recommendations by ACE are not binding on the University. By submitting DD Form 214 or its equivalent, students may receive Health and Physical Education credits.

International Students: Florida A&M University may award credits for student's prior academic course work from a recognized institution in their parent country.

Credits may also be awarded as credit by examination from the General Certificate of Education Advanced Level (A-level G.C.E.), if a student earned a grade of "C" or better for introductory courses.

* No credit is awarded for "general papers"

Graduate

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 an accredited institution. Additionally, 6 credit hours of elective credits shall be granted to students who are fully admitted to degree status in the College of Education for possession of a National Board Teacher Certification.

Acceptance of Academic Credits

Undergraduate/Professional (Pharmacy Doctorate) Students-

According to FAMU's mission, "the University seeks and supports a faculty and staff of distinction dedicated to providing outstanding academic preparation at the undergraduate, graduate, and professional school levels." FAMU defines a transfer student as any student who has attended any regionally accredited college or university and has earned 12 or more semester hours (except as high school dual enrolled students). The University subscribes to the Articulation Agreement between the State University System and the State Community College System. Under this agreement, graduates of Florida public community colleges are eligible to non-limited access programs at a state university if the students have completed the university's parallel program and have received the Associates of Arts degree (AA) and will receive priority admission over out-of-state students. Additionally, the agreement allows for students who hold an AA degree from a Florida public community college or university to have satisfied the University's general education requirement. Credits may also be awarded as credit by examination from the General Certificate of Education Advanced Level (A-level G.C.E.), if a student earned a grade of "C" or better for introductory courses.

Transfer credits are accepted from institutions that are accredited by the appropriate regional accrediting agencies recognized by FAMU at the time the credits are earned provided that the course was completed with a minimum grade of "C" (or equivalent). Within Florida, all state and post secondary institutions and some private post secondary institutions are members of the statewide course numbering system. Through this system, institutions are assured that courses with the same course prefix and number have equivalent content and may transfer among the member institutions. FAMU also recognizes the recommendations for credits published by the American Council on Education (ACE). However, recommendations by ACE are not binding on the University. Students may receive Health and Physical Education credits by submitting DD Form 214 or its equivalent.

FAMU utilizes and recognizes official evaluations for International students prepared by Foreign Credentialing Agencies like Silny and Associates or World Educational Services. Such evaluations must be submitted directly to the University.

FAMU Students-FAMU students complete a Transient Form (Study Abroad) that is approved by the students' academic department. This document ensures prior approval of courses that students will be registered for at the foreign institution. The approved transient form serves as record of the students' enrollment at the foreign institution and allows students to

have access to financial aid while studying abroad. Once the courses are completed and the official transcript is received from the foreign institution; the grades are processed using the approved grade change forms to place the grades on the students' transcripts.

Non-FAMU Students-Non-FAMU students enrolling in the FAMU-sponsored CCIS program are enrolled at host institution, Pontificia Universidad Católica Madre y Maestra (PUCMM). Students submit the FAMU Course Request Form (CRF), which must be signed by their appropriate home institution's administrators and faculty advisor. The approved CRF serves as record of the students' enrollment at the foreign institution and allows students to have access to financial aid while studying abroad. Transfer credits are awarded by FAMU for equivalent courses taught by the host institution. The education abroad coordinator forwards the official transcript from the host institution along with an OIED Grade Verification Form to the student's home institution's study abroad office. The courses are evaluated by FAMU for award of credit.

Exchange Students-Exchange students' enrollment is governed by the stipulations of the established Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU) between FAMU and the foreign institution.

Credit by State/National Examination-Public universities in Florida are required by Florida Statute Section 1007.27 [7] to award designated credit for Advanced Placement (AP), College Level Examination Program (CLEP), Defense Activity for Non-traditional Education Support (DANTES), Excelsior College Examinations (ECE), The Cambridge Advanced International Certificate for Education (AICE) and International Baccalaureate Program (IB) when a student meets the approved scores. FAMU also adheres to this policy. Applicability of some transfer credits toward a degree program is determined by the individual school or college. Additional policies regarding undergraduate transfer credits are noted in the University Catalog.

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, 6 credit hours of elective credits shall be granted to students who are fully admitted to graduate degree status in the College of Education for possession of National Board Teacher Certification. Additionally, 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).

Experiential Learning-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 denoted below 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's. 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.

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.

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 occur in the academic department.

Policy on Transfer of Credit for the Florida Engineering Education Delivery System (FEEDS) at FAMU

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 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 Masters 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.
4. Consult with the FEEDS Coordinator

Honors-Undergraduate

- A. Honor Roll-The Honor Roll listing shall include those students who are enrolled full-time in college-level degree credit earning courses, who have attained a 3.0 or above semester grade point average (GPA), and whose cumulative GPA is 2.5 or above.
- B. Dean's List-The Dean's List shall include those students who are enrolled full-time in college-level degree credit earning courses, who have attained a 3.5 or above semester GPA and whose cumulative GPA is 3.0 or above.
- C. Graduation with Honors-Eligibility for graduation with honors by students of Florida A&M University 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. All grades earned up to the submission of the application for graduation will be used to compute grade point averages for awarding 'graduate with honors'. Only students who are candidates for bachelors and professional degrees are eligible for graduation with honors.

Transfer students must earn a minimum of 60 credit hours at Florida A&M University in order to be eligible to graduate with honors.

Class Attendance Regulations

Students are expected to make the most of the educational opportunities available by regularly attending classes and laboratory periods. Therefore, the university reserves the right to deal with 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 will 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 dropped from the course and assigned the grade of "F." Students may be readmitted to the class with the dean's and the instructor's permission.

University and Course Withdrawals

Withdrawal from the University-A student who desires to withdraw from the university must contact to the director of the Center for Human Development and explain the circumstances which he or she feels require him or her to withdraw from the university. Upon approval by the director, the withdrawal form will be completed and signed by the director and the student. The student is required to turn in all residence hall keys, if applicable, to the counselor of the dormitory in which the student is residing and meet all other stipulations required by the university.

When the above signatures have been placed on the withdrawal form, the student must file the form with the university registrar by the deadline published in the University calendar for the term in which the withdrawal is sought. This procedure is to be followed by all students both on-campus and off-campus.

Any student who withdraws from the university during the regular or late registration periods will not receive grades at the close of the term. A student who officially withdraws after "the last day to register" but during the first eight weeks will receive W at the close of the term. For information on refunds, see Refund Policy. A grade of "F" for each course will be given to any student who leaves the university without filing a withdrawal form with the Registrar's Office.

Withdrawal from a course(s)- Under exceptional circumstances, it may be necessary for a student to withdraw from a course after the deadline for add/drop. Such withdrawals are accomplished upon the recommendation of the student's academic adviser to the dean, who will forward the appropriate form to the university registrar. 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.

University Withdrawal Committee- The 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 prior financial aid as well as enrollment status for the affected term.

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. Appeal applications must be filed and considered prior to graduation. The following type of appeals may be filed:

- * Waiver of Academic Suspension
- * Late or retroactive course withdrawal (limited to one year after course enrollment)
- * Late add or registration (limited to the next 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 (special) 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. Petitions for re-admission (after academic suspension) must be submitted at least ten working days before the start of classes.

Course Designation and Credits

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.

Credits for all courses are expressed in semester hours. All courses offered by Florida A&M University, whether main campus or off-campus, are considered residence credit. 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.

Classification of Students

Undergraduate students not enrolled as special 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. Freshmen-earned less than 30 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 under guidance of which students intend to study).
- VII. Non Degree Seeking-those not admitted to a regular degree program.

Grading System and Grade Point Average - Main Campus

The quality of work done by students is indicated by the letter of the alphabet as follows: A grade of "A", exceptional; "B", superior; "C", average; "D", passing but poor; "S", satisfactory; "N", no grade reported; "U", unsatisfactory; "W", withdrew; "F", failure; "I", incomplete; "X", audit; "TP", thesis pending; "DP", dissertation pending; and "P", pass. An "N", preceding the aforementioned grades denotes failure of the student to complete payment of registration fees.

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; "F" earns no grade points; and "X" earns no grade points. A student's term GPA is determined by dividing the number of hours attempted for GPA into the number of grade points earned. Similarly, the cumulative GPA is determined by dividing the total number of hours attempted for GPA into the total number of grade points earned.

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

A student who is passing a course but has not completed all of the required work 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, or if a student withdraws from the university. A student should not register for a course(s) in which incomplete grades have been received. If he or she does, the original "I" will automatically be changed to a permanent grade of "F".

Incomplete "I" 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".

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).

Forgiveness Policy and Procedures

An undergraduate student may improve his/her GPA by repeating an undergraduate course (1000-4999) in which a grade of "D" or "F" was received. Only the grade and grade points received in the final attempt shall be used in computing the student's cumulative grade point average. However, effective Fall 2004 only three such requests are available to the student during the student's undergraduate career. Such application for grade forgiveness must be made, at the appropriate time, in writing, to the Office of the Registrar. All attempts for a given course and all grades will remain on the student's transcript.

When a student repeats an undergraduate course (1000-4999) in which the grade of "D" was previously received, the first attempt is forgivable under certain conditions:

- I. The course is repeated because it is a major course or a course required by the major where the minimum grade of "C" is required.
- II. The course is repeated under Rule 6C3-4.09 of Florida A&M University where the minimum grade of "C" is required.

A student must petition the advisor, department or division chairperson, dean or university registrar in order to have this policy applied. Courses with numbers 5000-8999 are specifically excluded. Graduate students and former students who had earned bachelor degrees are excluded.

Grade Forgiveness Policy for Graduate Students

Effective Fall 2001, a graduate student enrolled at Florida A&M University who receives a C, D, or F grade, which fails to meet the requirements of a specific graduate program, may petition the Program Dean or Graduate Director to retake the course. The course must be taken at Florida A&M University (FAMU), unless the course is offered at Florida State University (FSU) under the FAMU/FSU cooperative program and the course must carry the same course number and description. Only the higher grade shall be used in computing the overall grade point average (GPA), but both grades will remain on the transcript. If both grades are the same, only the second will be counted in the GPA. A graduate student may repeat no more than two courses in any graduate program at Florida A&M University, and may repeat each course only once. A grade forgiveness form must be submitted by the student to the Registrar's Office after the course is retaken and prior to graduation.

Graduation Requirements and Procedures

Associate Degree Requirements -The associate in arts (A.A.) certificate may be granted upon formal written application to the School of General Studies, to students who have completed a minimum of 60 semester hours with a 2.0 average or better and successfully completed the College Level Academic Skills Test (CLAST), General Education sequence and Gordon Rule courses. The last 30 semester hours must have been earned at FAMU. The A.A. certificate will be awarded upon the recommendation of the Dean, School of General Studies.

Bachelor's Degree Requirements -To qualify for a bachelor's degree in an academic discipline specified in this catalog, the student must have completed a minimum of 120 semester hours, which must include satisfactory completion of all State of Florida requirements, institutional undergraduate requirements, and curriculum requirements. 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 of 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.

The university requires that the last 30 semester credit hours be taken in residence at FAMU. Petitions for a waiver of up to six hours of the last 30 hours in residence, due to a documented hardship or unusual circum-

stance, 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 make formal written application 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. 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.

Bachelor of Arts Degree Requirements (Additional Degree Required)—To qualify for a bachelor of arts degree all requirements listed above under the bachelor of science degree must be met, in addition to completing 12 semester hours in the (same) foreign language.

Second Bachelors degree—A student who wishes to receive two baccalaureate degrees in the same semester must (1) have declared 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 for each major. If a student holding a bachelors degree from FAMU wishes to obtain a second bachelors degree the student must earn a minimum of 30 semester hours after the requirements for the previous bachelor's degree.

Foreign Language Requirements—Students are required to have two years of Foreign Language study prior to graduation from Florida A&M University with a bachelor's degree. Two years of Foreign Language study is defined as two years in high school or eight to ten semesters hours in one Foreign Language or American Sign Language. Transfer students are exempt from Foreign Language requirement if:

- (1) They received an Associate in Arts degree prior to September 1, 1989, or
- (2) If they enrolled in a program of study leading to associate degree from a Florida Community College and maintained continuous enrollment until they are admitted to a university prior to August 1, 1989.

Professional/Graduate Degree Requirements—Specific degree requirements for the Master's, 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 a second masters degree must complete 18-24 graduate semester hours beyond what is required for the first master degree.

Recency of Credit—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.

Transfer Credit-Graduate Degrees

- I. Six semester hours may be allowed for extension credits, provided such credits were earned through a Florida Institution with regional accreditation; or
- II. Six semester hours may be allowed for workshop participation, in keeping with the regulation above; or
- III. Six semester hours may be allowed for credits earned while in residence at another university; or
- IV. Up to six semester hours in any combination of the three categories above may be allowed. A maximum of six credit hours from other institutions, approved by their regional accrediting agency, with B grades or better 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.

Comprehensive Examination—As partial fulfillment of the require-

ments 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-

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

Thesis/Dissertation—Students writing thesis 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 they wish to follow.

Application for Graduation—Application for graduation must be turned in immediately prior to or at the beginning of the term in which a student expects to complete all requirements for a degree. The student must apply in the office of the academic department/division chairperson. Application for graduation are available in the department/division chairperson's office. The university calendar designates the deadline dates on which this action must be taken. Applications received after the deadline dates indicated in the calendar may be processed with the applications received for graduation the next term. If the student fails to graduate, he or she should consult with his or her department or division chairperson or dean and reapply for a subsequent term.

Graduation Honors—Eligibility for graduation with honors by students of Florida A&M University 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 60 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 will be used to designate honor graduate in commencement program. The cumulative grade point average listed above will be used to determine eligibility.

Summer Term

The Summer Term 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 the Summer Term the university supplements the regular instructional program with credit and non-credit activities such as institutes, workshops, and conferences.

Summer Semester Attendance Rules—Florida Administrative Code, Chapter 6C-6.16, mandates that students entering a university in the State University System after September 1, 1976, who have less than 60 hours credit upon admission must earn 9 credit hours prior to graduation by attending one or more summer terms.

The objective of this rule is to more efficiently utilize system facilities and the state's investment in them by encouraging year-round attendance and thereby reducing peak load demands normally incident to the fall term of each academic year.

INFORMATION TO 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 Veterans Administration 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 veterans affairs office will be notified that the training period has been interrupted or discontinued. All students receiving veterans 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

Undergraduate Students

All students receiving VA Educational Benefits are required to attend classes regularly, in accordance with the university attendance policies. All students receiving veterans 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 allow you to enroll if you are on academic probation; however, your VA benefits will be subject to termination as stated above.

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 better) 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.

Financial Information

NOTE: All information on Fees in this catalog is subject to change without notice.

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.

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

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 | \$ 98.66 | \$ 498.29 |
| Graduate | 212.76 | 833.85 |
| Law | 238.60 | 886.00 |

Other semester fees

| | |
|--------------------------------|------------------------|
| Orientation (New Student Only) | \$15.00 |
| Health (Six or more hours) | 59.00 |
| Material & Supply Fee | 15.00 - 60.00 |
| Official Transcripts (each) | 5.00 |
| Transportation & Access Fee | 45.00 (Summer \$23.00) |

| | |
|-------------------------------------------------------|--------|
| Repeat Surcharge Regular (additional per credit hour) | 177.42 |
| College Prep. (additional per credit hour) | 191.46 |
| Late Registration | 100.00 |
| Late Payment | 100.00 |
| I.D. Card Fee (Fall & Spring) | 5.00 |

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

The university has modern food service facilities available for all students. It is not mandatory that any student utilize these services. However, if a student chooses to reside in certain on-campus housing (McGuinn Hall, Gibbs Hall, Young Hall, Diamond Hall, Wheatley Hall, Cropper Hall, Sampson Hall, Truth Hall, Paddyfoote Complex), those students must participate in either the 19-Meal Plan or the 15-Meal Plan. The cost of the meals are \$598.00 for the 15-meal plan and \$650.00 for the 19-meal plan. (These rates are subject to change without notice.)

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. Depending on the loan program, money is loaned either directly to the student or to the parents.

Workstudy Jobs - Workstudy programs let students earn money toward their education while they're going to school. Students can sometimes find jobs related to their program of study. Workstudy 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 is available upon request from the Office of Student Financial Aid and Scholarships, Room 101 Foote-Hilyer Administration Center, Florida A&M University, Tallahassee, Florida 32307-3200, Telephone: (850) 599-3730, FAX: (850) 561-2730, E-mail: finaid@famu.edu. You may also apply via the Internet at www.fafsa.ed.gov. The University priority deadline is March 1st of each year.

FEDERAL

To receive The Student Guide Booklet on Federal Programs 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

To receive the STATE OF FLORIDA FINANCIAL AID PROGRAMS write to: Student Financial Aid, Room 101 Foote-Hilyer Administration Center, Florida A&M University, Tallahassee, Florida 32307-3200 or Florida Department of Education, Office of Student Financial Assistance, 1344 Florida Education Center, Tallahassee, Florida 32399-0400.

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 Office of Special Programs & Services at (850) 599-3541, to ensure that they meet eligibility standards.

SCHOLARSHIPS

Presidential Scholars 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

Incoming freshmen designated National Achievement, Hispanic, or Merit Semifinalists by the National Merit Corporation and having a 1100 (R&M) on the SAT or 23 on the ACT or incoming freshmen who have at least a 3.50 high school GPA and scores of 1300 (R&M) on the SAT or 29 on the ACT will receive the following over four years: Tuition and fees, room, board, books, \$500/semester stipend, internships and a laptop. Awardee must major in Biology, Chemistry, Computer Science, Engineering, Environmental Science, Mathematics or Physics in order to be eligible for this scholarship. Students must take the PSAT (Preliminary Scholastic Aptitude Test) in the junior year of high school to compete in the National Merit Corporation programs.

Distinguished Scholars Award Scholarship

This Incoming freshmen who have scores of at least 1200 (R&M) on the SAT or 27 on the ACT and a 3.50 high school GPA or National Achievement, Merit, Hispanic Semifinalists:

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, Florida Academic Scholar awardees or National Achievement Semifinalists will receive up to \$400 a semester for books.

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. Students who are Pell Grant eligible will receive a stipend not to exceed \$500/semester.

George W. Gore Assistantship

This is a four-year scholarship. Incoming freshmen who have at least 1100 (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 (R&M) 1100-1129 | \$2,000 |
| ACT 24 or SAT (R&M) 1130-1149 | \$3,000 |
| ACT 25 or SAT (R&M) 1150-1169 | \$4,000 |
| ACT 26 or SAT (R&M) 1170-1189 | \$5,000 |
| SAT (R&M) 1190 | \$6,000 |

Incoming freshmen majoring in Biology, Chemistry, Computer Science, Engineering, Environmental Science, Mathematics or Physics will receive an extra award of \$1,000 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 |
|-----------------|--------------|
| 2.5 - 2.74 | \$1,000 |
| 2.75 - 3.00 | \$1,500 |
| 3.01 - 3.49 | \$2,500 |
| 3.50 - 3.99/PTK | \$3,000 |
| 4.00 | \$5,000 |

President's Special Scholarship

This scholarship is awarded to a high school senior who has demonstrated outstanding academic achievements and special talents in high school. This is a four-year partial scholarship designed to assist in meeting the cost of attending the University. This is a four-year undergraduate scholarship awarded in the amount of \$1,000 per year to \$6,000 per year based on available funding and is awarded at the discretion of the Vice President for Academic Affairs or the University President.

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.

Admittees 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 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.

College of Engineering Sciences, Technology and Agriculture-The scholarships below are available to students in the College of Engineering Sciences, Technology and Agriculture.

TEC-IBM Grant, electromechanical technology majors; Civil Engineering Scholarship, civil engineering majors; Prudential Insurance Company, data processing majors; General Electric (short term loan), technology majors; Ralston Purina, agriculture majors; Edward Jones, (short term loan), technology majors; CIBA-Geiger, Ornamental Horticulture, horticulture majors; AMOCO-Physics, physics majors; Florida Forest Products Corporation (short term loan), agriculture majors; G.W. Conoly Family, agriculture majors. Interested students should contact CESTA at (850) 599-8816.

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 Health and Rehabilitative 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 \$500.00 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 Due 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, Patricia Stephens Due, and/or Dr. Rose Glee. Dr. Glee has my permission to receive information about all aspects of the scholarship; 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 male or female 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 Grooms 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 must provide a statement of purpose/need for scholarship. For more information, contact the FAMU Foundation at (850) 599-3860.

Melvne 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 which involves 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, Ombuds, 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 "living 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, systems that support their development as students, and provide programs and activities that are 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 a resource for residents, provide guidance, and assist with crisis management. Residence life programs are designed to help students develop a sense of community, to 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 freshmen (first time in college students) and/or students with less than twelve (12) semester credit hours whose permanent address of their parent or legal guardian is in excess of thirty-five (35) miles off campus are required to live in University owned and operated residential facilities. Failure to comply with this rule is a violation of University policy and will result in you being charged two semesters of on-campus rent. For purposes of this provision, the following are on-campus residence hall facilities designated for freshmen: Cropper Hall, Diamond Hall, McGuinn Hall, Wheatley Hall, Truth Hall, Gibbs Hall, Young Hall, Sampson Hall and Paddyfote Complex.

Exceptions may be granted for:

- Students residing with their parent or legal guardian whose permanent address prior to freshman move-in date is within a 35-mile commutable radius of the campus.;
- Students who are at least 21 years of age by the first day of class;
- Students who are married;
- Students providing support to dependents.

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

Two 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, sharing a common hallway, bathroom, and other facilities. This form of housing offers the student a living experience in which the student 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 to make friends from different part 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 mens' residence halls include: Gibbs, Paddyfote units A and B, Sampson, and Young. The residence hall for women include: Cropper, Diamond, McGuinn, Paddyfote units C and D, Truth and Wheatley.

Apartments are the second type of housing provided by the University. Both student family apartments and single student apartments are available on campus. Palmetto North-Family student apartments, have two bedrooms. These apartments are furnished including local telephone service and utilities. The majority of the single student apartments are located in Palmetto Street Complex. The Palmetto Street North Apartments are two-bedroom, furnished including air conditioning, carpeting, local telephone service, and utilities. Each apartment is equipped with a full kitchen and bathroom. 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, carpeting, local telephone service, and utilities. Each apartment is equipped with a full kitchen and two full sized bathrooms.

On-line Application Process for Students

You will need your "EMPL ID#" to apply for housing. If you do not know your EMPL ID#, the steps below will assist you in obtaining this number.

- A) Go to www.famu.edu . (If you know your EMPL ID# skip steps B and C)
- B) Click "Our FAMU". You may obtain your EMPL ID# by logging onto "Our FAMU."
- C) Click Personal Portfolio; select Demographic Summary. The nine digit number ID# is the EMPL ID#
- D) Click "Online Housing Application" under campus links.
- E) Select "Single Student" or "Family Student" (for copy of agreement) buttons. Click the button related to your status.
- F) Read the Housing Agreement page, if you accept the agreement you will be directed to the login page.
- G) Use your EMPL ID# as your Username and Password.
- H) As soon as you login, please update your profile information by going to Profile.
- I) The fields marked with red are necessary fields.
- J) When you want to apply for housing, go to application and select Reapply.
- K) The advanced payment is due within 15 days of the online submissions. Without your advanced payment, you will not be assigned a room and will be charged a \$40.00 administrative fee.

| | | | |
|----------------------|---------|----------|-------|
| Paddyfote D (Single) | \$1972 | \$1,4561 | \$740 |
| Truth Hall | \$1,886 | \$1,493 | \$707 |
| Wheatley Hall | \$1,744 | \$1,3881 | \$654 |

MALES

| | | | |
|----------------------|---------|---------|-------|
| Gibbs Hall | \$1,886 | \$1,493 | \$707 |
| Paddyfote A | \$1,582 | \$1,252 | \$593 |
| Paddyfote B (Single) | \$1,972 | \$1,561 | \$740 |

APARTMENTS

| | | | |
|---------------------------------|---------|---------|-------|
| Palmetto St. North | \$1,948 | \$1,542 | \$731 |
| Palmetto St. Phase III (Double) | \$2,001 | \$1,584 | \$750 |
| Palmetto St. Phase III (Single) | \$2,248 | \$1,780 | \$843 |
| Palmetto St. South (Double) | \$1,948 | \$1,542 | \$731 |
| Palmetto St. South (Single) | \$2,197 | \$1,740 | \$824 |

All students residing in a single room in Cropper, Diamond, Gibbs, McGuinn, Paddyfote A, C, Truth, and Wheatley Halls are required to pay an additional fee of \$350.

Palmetto St. North – (Family Apartments per Semester)
Two Bedroom Apartment \$1,948

Housing Procedure

Residence Halls/Apartments

- I. Each student desiring on-campus housing is required to submit a Housing Agreement, accompanied by the \$350.00 advance payment cashiers 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 will be mailed a housing assignment or will be notified in writing of the unavailability of on-campus space. A housing assignment will be made only for a person who has been officially admitted and submitted a Housing Agreement and the \$350.00 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 deferrals 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 canceled, provided the Housing Office receives a notice of cancellation in writing via certified mail in accordance with the below listed deadlines. The earlier you notify the Housing Department; the less your cancellation fee will be.

Housing Rental Rate Schedule Fall 2007 - Summer 2008 Academic Year

Note – Fees are scheduled to change with Board of Trustees Approval

| Facility Name | Fall 07/Spr. 08 Per Sem. | Sum. 08 C Term | Sum. 08 A or B Term |
|----------------|-----------------------------|-------------------|------------------------|
| FEMALES | | | |
| Cropper Hall | \$1,744 | \$1,381 | \$654 |
| McGuinn Hall | \$1,744 | \$1,381 | \$654 |
| Diamond Hall | \$1,886 | \$1,493 | \$707 |
| Paddyfote C | \$1,582 | \$1,252 | \$593 |

FALL CANCELLATION POLICIES AND PROCEDURES

| DEADLINE DATES | RETURNING STUDENTS CANCELLATION FEE | REFUND DUE |
|------------------------------|----------------------------------------|---------------|
| On or before June 1 | \$ 40.00 | \$310.00 |
| June 2 - July 1 | \$200.00 | \$150.00 |
| July 2 - August 1 | \$350.00 | No Refund Due |
| August 2 thru Opening Day | \$500.00 | No Refund Due |
| After the Opening Day | The Entire Semester's Rent | No Refund Due |

| DEADLINES DATES | FRESHMEN STUDENTS CANCELLATION FEE | REFUND DUE |
|------------------------------|---------------------------------------|---------------|
| On or before June 15 | \$ 40.00 | \$310.00 |
| June 16 - July 1 | \$200.00 | \$150.00 |
| July 2 - August 1 | \$350.00 | No Refund Due |
| August 2 thru Opening Day | \$500.00 | No Refund Due |
| After the Opening Day | The Entire Semester's Rent | No Refund Due |

SPRING CANCELLATION POLICIES AND PROCEDURES

| DEADLINES DATES | STUDENTS CANCELLATION FEE | REFUND DUE |
|---------------------------------|------------------------------|---------------|
| On or before November 1 | \$ 40.00 | \$310.00 |
| November 2 - December 1 | \$200.00 | \$150.00 |
| December 2 - December 15 | \$350.00 | No Refund Due |
| December 16 thru Opening Day | \$500.00 | 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 \$40.00

After April 15 is The Entire Session's Rent

NEW RESIDENTS APPLICANTS

On or before April 30 is \$40.00

After April 30 is The Entire Session's Rent

SESSION "B"

ALL APPLICANTS

On or before May 31 is \$40.00

After May 31 is The Entire Session's Rent

Off-Campus Housing

The University does not inspect, approve, advocate, recommend or otherwise endorse any particular off campus housing unit, apartment complex, or community to its students seeking off campus housing.

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;
- Allergy shots;
- Pharmacy;
- HIV testing; and
- Health education and outreach services

Student Health Services is open Monday through Friday from 8:00 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 student health fee is assessed at the time of registration for each student who is registered for six (6) or more semester hours. Part-time students who register for less than six (6) semester hours have the option of paying the health fee to be eligible for services at Florida A&M University Student Health Services. The health fee paid each semester 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:

MMR:

1. 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, Diphtheria, 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 from your church or personal statement of religious tenants and completion of vaccine waiver signed by the student/guardian; and
3. Medical exemption requires specific, written documentation on office letterhead signed by a physician. The student/guardian must also complete the FAMU vaccine waiver. Temporary deferrals will be allowed if condition is documented on officer letterhead and signed by a physician, for pregnancy/possibility of pregnancy, breastfeeding or illness.

Students health history form and immunization documentation may be delivered in person; via mail to FAMU Student Health Services, 116 Foote-Hilyer AC, Tallahassee, FL 32307, Attn: Immunizations; or faxed to 850-599-3067.

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 inquires 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 of the Division of Student Affairs. The OCS is staffed by professional counselors who have earned a minimum of a Master's Degree in the counseling profession and are licensed or supervised by a licensed psychologist. Our motto is Excellence in Caring.

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 services for a full range of concerns including academic issues, test-taking concerns, family relations and independent living, intimacy issues, coping with friendships and other concerns typical of the maturational process in adulthood. Students also seek our services for assistance with depression, anxiety, and substance abuse issues.

Overview of Services

- **Counseling:** Individual or couples counseling is for a student who appreciates confidential and individualized attention. Career exploration is also conducted with your individual personality and goals in mind.
- **Academic support:** These services are for students who need firm and caring encouragement 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 grief, freshman transitions, brothers only, and judicial education.
- **Workshops and presentations:** These are available to student groups and organizations, faculty and staff members; staff members are also available to serve as panelists.
- **Self-help information:** Come see our library of materials to assist you with self-help or for completing research assignments related to mental health.
- **Screenings:** Our staff conducts live screenings throughout the year for depression, anxiety, eating disorders, and substance abuse. You may also wish to conduct your screening 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 for consultation and follow-up.
- **Graduate Internship:** Students who are nearing the completion of a master's degree in a clinical counseling profession, have stellar letters of recommendation and a demonstrated commitment to professionalism, may apply for a two semester part-time internship.

The OCS also oversees the university Alcohol and Other Drug Program and the University Victim Advocate Service.

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 twenty-four 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 Law Enforcement Department.

All OCS services are free, and students may have up to twelve counseling sessions per semester. Our office is located in Sunshine Manor and we are available Monday-Friday from 8:00-5:00 with extended hours on Thursdays from 8:00-7:00 pm. 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 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 Student Affairs and reports to the Associate Vice President of Student Affairs.

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 400 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 Monstertrak 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.

SIGI3

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.

Career Focus Newsletter

A publication of The Career Center which provides current market trend data and academic, experiential learning and placement information is published each fall and spring term.

Fall Career Exposition

Approximately 150 employers with over 400 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 125 employers with over 350 representatives participate in Spring Career Expo. In 1995, the first Spring Expo was held in Tallahassee-Leon County Civic Center.

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 Recruitment Day

Approximately 150 school districts from over 15 different states participated in TRD for fall and spring semesters. Students indicated that they have acquired multiple job offers. Education has become one of the hottest majors at FAMU as school districts continue to recognize the University as one of the nation's greatest resources for African-American teachers.

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 Employer Registration (MonsterTrack)

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 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, 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 Rood
- 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.

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 with out Borders
Graphics Art Club
Health Science/Pre Physical Therapy Association
National Society of Black engineers
Phi Alpha Delta Law Fraternity
Public Relations Student Society of America
Respiratory Care Club
School of Allied Health and Science
Student Physical Therapy Association
Student National 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"
Kappa Kappa Psi Fraternity
Sigma Alpha Iota Fraternity
University Gospel Choir

Military

National Society of Pershing Rifles

Literary

Journey Magazine
School of Architect News letter "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 Lamda Sigma
Project HOME
Sigma Gamma Lamda 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 Kappa Psi Business Fraternity
Alpha Rho Chi Fraternity
American Choral Dir. Assoc.
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
Presidential Scholars Association
Rho Chi Honors 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 Association-MAPS
Student National Alumni Association
Student Alliance for Cultural Development
Texas Club
Torque Dance Team
Vegetarian Student Alliance
Young and Striving

DEPARTMENT OF PUBLIC SAFETY

The Department of 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 that otherwise pose 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. Also, 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, and 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 Code of Student Conduct.

The Office of Judicial Affairs and Resource Services is responsible for all judicial 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) 412-7223, fax (850) 561-2169

OFFICE OF THE UNIVERSITY OMBUDS

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 103. The office telephone number is (850) 412-7379 and facsimile number is (850) 412-7381. 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 three components: Intramural Sports, Fitness and Aerobics and Outdoor Adventures.

The department also encourages the development of leadership skills among its clientele through its student driven Recreation Committee. The committee is charged with the responsibility to work with various administrators, departments and clubs and organizations to further the goals and objectives of the department. 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 a \$9 million state-of-the-art facility on the corner of Wahnish Way and Osceola Street. It has a 3,400 square foot exercise/aerobics or multi-purpose room; a juice bar; a 700 square foot spinning room/classroom; a message therapy room and a 16,500 square foot weight training and cardio workout area on two floors. For further information, please call 599-3785.

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, a fully 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 discipline at the University to the Vice President for Student Affairs. However, the President's Office reserves the right to handle certain disciplinary matters involving the welfare and safety of the University. By Florida Statutes and Board of Governors' rules, 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 grievances and/or appeals are handled in accordance with the Student Code of Conduct Regulation 2.012. Refer to the University 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 of Florida A&M University 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 matters involving alleged violations of the Student Code of Conduct. About its programs, its instructional laboratory and other physical facilities, and its faculty.

Due process as applied by the University and its schools and colleges shall include, as a minimum, the following:

- (a) The student shall be provided with written notice of the charges against him/her in sufficient detail and in sufficient time to prepare for a hearing before an appropriate committee or hearing body, as established by the University or its colleges, schools, or institutes, or before the appropriate University official;
- (b) The University or its colleges and schools shall establish a minimum number of days in advance of the hearing to present the written notice of charges, but in no case will this notice be less than three days, except in cases of emergency as specified below;
- (c) The Student shall be entitled to a prompt hearing before an appropriate committee or hearing body, as established by the University or its colleges, schools or institutes; or the student shall have the option to request adjudication of the matter by an

appropriate official designated by the University or its colleges, schools or institutes;

- (d) The student and his/her advisor may inspect all of the evidence that will be presented against the student at least three (3) work days before the student disciplinary hearing. The University shall also have the right to inspect any information the student intends to use at least three (3) workdays before the student disciplinary hearing;
 - (e) The student may present evidence on his/her own behalf;
 - (f) The student may hear and question adverse witnesses;
 - (g) The student shall not be forced to present testimony which would be self-incriminating; however, the university and/or its colleges and schools is not required to postpone the proceedings pending the outcome of any outside prosecution and a disciplinary penalty or sanction imposed under the university's code of conduct is in addition to any penalty imposed by the courts for the criminal system;
 - (h) The student may have an advisor of the student's choice present at the hearing;
 - (i) The decision of responsible or not responsible on the charges shall be based solely on the evidence presented at the hearing;
 - (j) The decisions of any committee or hearing body, or of any university official, shall be presented to the student in writing and within fourteen business days following the hearing;
 - (k) The student may appeal the decision of any committee or hearing body or of any university official, within a period specified by the university or its colleges, schools or institutes in the written procedures, to the president or the president's designee; and
 - (l) The student's status will remain unchanged pending the university's final decision in the matter, except where the president or president's designee determines that the safety, health or general welfare of the student or the university is involved. A student's enrollment status may be changed only in cases where the president or president's designee determines that an emergency exists, which affects the safety, health or general welfare of the student or other students or the university and/or its employees.
 - (m) At the conclusion of the appeals process, the decision of the president or the president's designee shall be final.
- (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 6C-6.0105(5).
 - (3) 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 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 guidelines, procedures and regulations of the University and the respective clubs and organizations.
- (h) The right of due process.
- (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.
- (4) Florida A&M 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:
- The responsibility of making the most of their educational opportunities by attending classes and laboratory periods on 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.
 - The responsibility of knowing and observing all published university policies, procedures and regulations (e.g. the General Catalog of the University and Student Handbook, etc.) as well as state and federal laws and requirements.
 - 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.
 - The responsibility of ensuring the orderly operation of the university through appropriate conduct in and out of the classroom.
 - 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 1001.74(4) FS. Law Implemented 1001.74(4) 1006.60, 1006.61, 1006.62FS.

History—New 10-1-75, Formerly 6C3-2.13, Amended 9-14-87, Amended June 29, 2006.

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:

- Directly related to a student and
- 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:

- Review and inspect their education records;
- Challenge and seek to amend education records that the student believes are inaccurate or misleading;
- Consent to disclosures of personally identifiable information contained in their educational records, except to the extent that FERPA allows disclosures without consent; and
- 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 address)
- 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 infor-

mation 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:
 - 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.
 - 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.
 - To parties who provide or may provide financial aid to the student.
 - 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.
 - To an outside contractor who is a "party acting and behalf of the University and is performing a service which the University would otherwise have to perform for itself.
 - To accrediting organizations to carry out their accrediting functions.
 - 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.
 - 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.
 - The result of a disciplinary proceeding may be released to the victim on the student's crime of violence.
 - 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:
 - The disclosure to be warranted by the seriousness of the threat to the safety or health of the student or other persons; or
 - The information disclosed is necessary and needed to meet the emergency; and
 - 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 limit 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 their 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 their 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 institutions 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 Department of Education (FLDOE);
- Under contract to the FLDOE of FGCU in any faculty or staff position;
- 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 FLDOE 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.

Academic Affairs

Participation in the College-Level Academic Skills Test as a Requirement for State Student Financial Aid

On or after August 1, 1985, any student who is awarded the associate of arts degree or who completes sixty (60) semester hours of credit, or the equivalent, in academic work applicable to an associate in arts or bachelor's degree at the Florida public or independent institution in which the student is enrolled, shall be required to have scores on the College Level Academic Skills test which satisfy the standards in 6A-10.0312(1), FAC, in order to be eligible to receive a state financial aid award.

College-Level Academic Skills Test in State Universities

The College Level Academic Skills Test (CLAST) measures the level of achievement of communication and computation skills of students exiting their sophomore year. Beginning with the October 1982 administration of the CLAST, each state university shall require all applicants for upper division status, including students who were admitted to the university as freshmen or sophomores, to present scores which have been earned on the College-Level Academic Skills Test; and for any terms beginning on or after August 1, 1984, the admission of all students to upper division status shall require presentation of scores on the College Level Academic Skills Test which satisfy the minimum standards that are in effect at the time when the students first sit for the test. Those standards (Rule 6A-10-0314) are

| | Essay | ELS | Reading | Mathematics |
|-----------------------------|-------|-----|---------|-------------|
| Aug. 1, 1984-July 31, 1986 | 4 | 265 | 260 | 260 |
| Aug. 1, 1986-July 31, 1989 | 4 | 270 | 270 | 275 |
| Aug. 1, 1989-July 31, 1991 | 4 | 295 | 295 | 285 |
| Oct. 1, 1991-Sept. 30, 1992 | 5* | 295 | 295 | 290 |
| After October 1, 1992 | | 295 | 295 | 295 |

* In October 1991, the essay scoring scale was revised. A score of five (5) on the revised scale is equivalent to a score of four (4) on the former scale.

Students who are otherwise qualified for admission to upper division status at the state university and who have satisfied the minimum standards of the State Board on only three (3) of the four (4) subtests of the College-Level Academic Skills Test may enroll for up to an additional thirty-six (36) semester credits in upper division courses in a state university before they are required to satisfy the minimum standards of the State Board of all four (4) subtests. Students required to present scores on the College-Level Academic Skills Test who have not had an opportunity to take the test may be enrolled in a state university only until the end of the next semester in which the test is available to them. Students who have not had the opportunity to take the test are students

1. who completed their sophomore year in a community college or state university in Florida before October 1982;
2. who are transferring from an institution where the test is not administered;
3. who are prevented from taking the test (i) for religious or medical reasons, (ii) by reason of duty assignment while on active or temporary (TDY) duty in military service; or
4. who were registered to take the test but failed to report for testing, if the university president or the person or body designated by him or her find on written petition by a student that the student was unable to report for testing on the test administration date for a reason beyond the student's control. The CLAST is administered each semester. A student must register by the deadline to be eligible to take the test. Further information on CLAST can be obtained from the CLAST office located in 204 GEC-A.

The CLAST is one measure of students' academic proficiency. Effective January 1, 1996, s. 1008.29 FS. provides alternative ways to demonstrate attainment of the required communications and mathematics skills.

Students can exempt the computation section of the CLAST through the following methods:

1. Scholastic Achievement Test (SAT-1) - Student must earn five hundred (500) or above on the quantitative section of the recentered score scale of the SAT-1 or its equivalent on the original score scale;
2. American College Testing Program (ACT) - 21 or above on the mathematics section of the Enhanced ACT or a score of 21 and above on the original ACT;
3. Mathematics Courses - To exempt the computation section of the College Level Academic Skills Test, the student must earn a 2.5 grade point average in two (2) courses for a minimum of six (6) semester hours from:

Option 1 - The student shall complete any two of the following: MAC* 102 College Algebra or any other MAC course with the last three digits being higher than 102; MGF* 106 Liberal Arts Mathematics I, MGF* Liberal Arts Mathematics II, MGF* 202 Finite Mathematics or any other MGF course with the last three digits being higher than 202; or STA* 014 Statistical Methods or any other STA course.

Option 2 - The student shall complete any two (2) of the following: MGF* 106 Liberal Arts Mathematics I and MGF* 107 Liberal Arts mathematics II, MGF* 113 Topics in College Mathematics I; MGF* 114 Topics in Mathematics II; or MGF* 118 Mathematics CLAST Review.

Option 3 - MGF* 106 Liberal Arts Mathematics I or MGF*113 Topics in Mathematics I, and MAC*102 College Algebra or Mac 105 College Algebra.

Students can exempt the communication sections of the College Level Academic Skills Test through the following methods:

1. Scholastic Achievement Test (SAT-I) - The student must earn 500 hundred (500) or above on the verbal section of the recentered score scale of the SAT-I or its equivalent on the original score scale;
2. American College testing Program (ACT) Students who have earned a score of twenty-two (22) or above on the Enhanced American Testing Program (ACT) or a score of 20 or above on the Composite of the original ACT, shall be exempt from the reading section of the CLAST. Students who have earned a score of 21 or above on the English section of the Enhanced ACT or a score of twenty (20) or above on the original ACT shall be exempt from the English Language Skills and essay sections of the CLAST.
3. English Courses: To exempt the English Language Skills, Reading, and Essay sections of the College level Academic Skills test, the student must have earned a 2.5 grade point average in two (2) courses for a minimum of six semester hours of credit from : ENC 1101, English I and ENC 1102, English II or other equivalent college-level English course.

Students who do not initially earn passing scores on the Scholastic Achievement Test (SAT-I) or the American College Testing Program (ACT) may submit scores earned on other administrations of the test as long as subsequent scores are not earned within thirty (30) days of the preceding score.

Pursuant to section 240.107(9), Florida Statutes, any student denied a degree based on the failure of at least one (1) subtest of the CLAST may use any of the alternatives specified in this rule for receipt of a degree if such student meets all degree program requirements at the time of application for the degree under the exemption rule. The provision does not require a

student to take the CLAST before given the opportunity to use any of the alternatives specified in this rule.

College Preparatory Program

Beginning in 1985, the State of Florida instituted the College Preparatory or Pre-Collegiate Program. Students who score below a certain level on specified sub-tests of the Scholastic Aptitude Test (SAT) or the American Collegiate Test (ACT) are placed in the College Preparatory Program. Upon entering the university, these students are given placement tests to determine their need to be in the College Preparatory Program. Students who score below the following placement tests remain in the program.

| | Standard Score |
|----------------------------------------|----------------|
| SAT-I, The College Board | |
| Verbal | 440 |
| Mathematics | 440 |
| Enhanced ACT, American Testing Program | |
| Reading | 18 |
| English | 17 |
| Mathematics | 19 |

Based on the scores above, students will receive college preparatory instruction in the areas of English, mathematics, and/or reading. The college preparatory courses, although required for identified students, do not carry college credit, and student performance is evaluated on an S/U basis. Students have three semesters to complete successfully any required college preparatory course.

The college preparatory courses at the university are:

| | Semester hours |
|-----------------------------------------------------|----------------|
| English-ENC 0001-"College Prep Writing" | 3 |
| Mathematics-MAT 0024-"Elementary Algebra" | 3 |
| Reading-REA 0001-"College Prep Reading" | 3 |

For further information see College Preparatory Program listed under the School of General Studies.

Gordon Rule Compliance

The State Board of Education Rule 6A-10.30(2), commonly known as the "Gordon Rule," specifies that all state universities require in all baccalaureate degree programs, satisfactory completion of twelve (12) semester hours of English course work in which all students are required to produce written work of at least 24,000 words and completion of six (6) hours of mathematics course work at the level of college algebra or higher. A grade of "C" or better is required in each course in the communication, mathematics and humanities/social sciences lists. Subsection (3)(d) of the rule authorizes alternative plans to the subsection (2) requirements. Accordingly, Florida A&M University's alternative plan is as follows:

- I. **COMMUNICATION** - (6 Semester Hours). Estimated number of words for each course is 6,000
 - ENC 1101, ENC 1102 Freshman Communication Skills I & II
OR
 - ENC 1121, ENC 1122 Honors Freshman Composition I & II
- II. **MATHEMATICS** - (6 Semester Hours)
Choose two Mathematics courses at or above College Algebra from the following approved mathematics course list.

| Course Prefix # | Course Title | Credit Hours |
|-----------------|--------------------------|--------------|
| MAA 4211 | Advanced Calculus I | 3 |
| 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 |

- III. **HUMANITIES/SOCIAL SCIENCE** - (12 Semester Hours)
Choose four courses from the following approved topical humanities course list. Estimated number of words for each course is 3,000.

| 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 |
| AMH 3571 | Afro-American History to 1865 | 3 |
| AMH 3572 | Afro-American History Since 1865 | 3 |
| AML 2010 | American Literature I | 3 |
| AML 3122 | American Literature II | 3 |
| AML 4154 | Modern American Poetry | 3 |
| ANT 2000 | Intro. to Anthropology | 3 |
| ARC 2701 | Survey of Arch. History I | 3 |
| ARH 2000 | Art Appreciation | 3 |
| ARH 2050 | Art History I: Prehistory to Renaiss. | 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 |
| ECO 2013 | Prin. of Economics I | 3 |
| ECO 2023 | Prin. of Economics II | 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 |
| GEA 2000 | World Regional Geography | 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 3601 | Ethics | 3 |
| PHI 2801 | Intro. to Aesthetics | 3 |
| PHM 3120 | Contemporary Black Social Phil. | 3 |
| POS 2001 | Intro. to Political Science | 3 |
| POS 2041 | Amer. National Government | 3 |
| POS 2112 | Amer. State and Local Govt. | 3 |
| PSY 2012 | Intro. Psychology | 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 3310 | Eastern World Religions | 3 |
| REL 3383 | Caribbean Religion & Culture | 3 |
| SPC 1050 | Speech and Language Control | 3 |
| SPC 2600 | Public Speaking | 3 |
| SYG 2000 | Intro. to Sociology | 3 |
| THE 2000 | Intro. to Theatre | 3 |
| THE 3110 | Theatre History I | 3 |
| THE 3111 | Theatre History II | 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 |

| | | |
|----------|-------------------------------------|---|
| ENL 3033 | English Literature | 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 2230 | Historical Survey II | 3 |
| LIT 2110 | Intro to Literature I | 3 |
| LIT 2120 | Intro to Literature II | 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 3400 | Modern Philosophy | 3 |
| PHH 3600 | Contemporary Philosophy | 3 |
| PHI 2010 | Intro to Philosophy | 3 |
| PHI 2101 | Intro. to Logic | 3 |
| PHI 2801 | Introduction to Aesthetics | 3 |
| PHM 3120 | Contemporary Black Social Phil. | 3 |
| REL 2000 | Intro. to Religion | 3 |
| REL 2135 | Black Religion in America | 3 |
| REL 2210 | Intro. to the Old Testament | 3 |
| REL 2240 | Intro. to the New Testament | 3 |
| REL 2320 | Western World Religions | 3 |
| REL 3120 | Religion in American Culture | 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 | Contemporary Black Theatre | 3 |
| WOH 1012 | Hist. Of Civilization | 3 |
| WOH 1022 | Hist. Of Civilization: Ren. to 1848 | 3 |

The General Education Sequence

All students enrolled in the lower division programs of the university must complete the following sequence of general education courses:

I. COMMUNICATION [6]*

ENC 1101, ENC 1102 Freshman Communication Skills I & II or
ENC 1121, ENC 1122 Honors Freshman Composition I & II

II. MATHEMATICS [6]*

Two Mathematics courses at or above College Algebra from the approved mathematics course list

III. NATURAL SCIENCES [8]**

Any two courses in Biology, Chemistry or Physics, each with a laboratory, chosen from the approved Natural Sciences course list.

IV. SOCIAL SCIENCES [6]*

AMH 2091 Introduction to African American History and One non-history course from the approved Social Sciences course list

V. HUMANITIES [6]*

Two courses from the approved humanities course list

VI. ELECTIVES [3-4]*

Choose SPC 2600 Public Speaking or HSC 1100 Health Modern Living or from any of the approved Mathematics, Natural Sciences, Social Sciences, and Humanities lists.

Total35- 36

NOTE: Each School/College will require its 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.

* - A minimum grade of "C" is required.

** - Please refer to academic department for minimum grade requirement.

General Education Approved Course List

Humanities (12 Semester Hours)

| Course Prefix # | Course Title | Credit Hours |
|-----------------|--------------------------------------|--------------|
| AMH 2010 | U S History 1492 - 1865 | 3 |
| AMH 2020 | U S History 1865 - Present | 3 |
| AMH 3571 | African Amer. History - 1865 | 3 |
| AMH 3572 | African Amer. History Sc - 1865 | 3 |
| AML 2010 | Amer. Literature I | 3 |
| AML 3122 | Amer. Literature II | 3 |
| ARC 1211 | The Building Arts | 3 |
| ARC 2701 | Architectural History I | 3 |
| ARH 2000 | Art Appreciation | 3 |
| ARH 2050 | Art History I: Prehistory - Renaiss. | 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 |

Mathematics (6 hours)

Two courses from the following:

| | | |
|----------|---------------------------------------|---|
| 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 Science (8 hours)

| | | |
|-----------|-----------------------------------------|---|
| AST 1002 | Astronomy | 4 |
| BSC 1005 | Biological Science | 4 |
| BSC 1010C | General Biology I | 4 |
| BSC 1011C | General Biology II | 4 |
| CHM 1015 | Fundamentals of Chemistry | 4 |
| CHM 1030 | Intro Chemistry for Health Sci /w lab | 4 |
| CHM 1031 | Chemistry for Health Sciences /with Lab | 4 |
| CHM 1045 | General Chemistry I /with Lab | 4 |
| CHM 1046 | General Chemistry II /with Lab | 4 |
| ISC 1006 | Wide World Science I | 4 |
| ISC 1007 | Wide World Science II | 4 |

PHY 2048 General Physics I /with Lab4
 PHY 2049 General Physics II /with Lab4
 PSC 1121 Physical Science /with Lab4

Social Sciences (6 hours)

AMH 2091 Introduction to African American History3
 and one course from the following:

GEA 2000 World Geography3
 ANT 2000 Introduction to Anthropology3
 ECO 2013 Principles of Economics I3
 ECO 2023 Principles of Economics II3
 POS 2001 Introduction to Political Science3
 POS 2041 American National Government3
 POS 2112 American State and Local Government3
 PSY 2012 Introduction to Psychology3
 SYG 2000 Introduction to Sociology3

Programs for Degree Acceleration

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 credit by examination, dual enrollment, early admission to the university, the year-around calendar, and any combinations of the above acceleration mechanism.

CREDIT BY EXAMINATION: A STUDENT MAY PARTICIPATE IN A VARIETY OF CREDIT BY EXAMINATION PROGRAMS IN ORDER TO EARN CREDIT TOWARD A DEGREE AWARDED BY THE UNIVERSITY.

Please see transfer credits under "Academic Program Policy" for details.

SPECIAL ACADEMIC PROGRAMS

Health Careers Preparatory Program

Health Careers Preparatory Programs are designed to prepare students to meet the critical manpower needs in the health professions. They are interdisciplinary programs that are open to all students who have an interest in pursuing a career in the health related areas - such as medicine, dentistry, veterinary medicine, and allied health. Detailed programs with specific discipline emphasis are outlined in the areas of chemistry and biology and in the division of agricultural sciences.

Pre-Medicine and Pre-Dentistry - These areas prepare students to pursue studies at any medical or dental school. Emphasis is not only placed upon the academic work, but considerable attention is also devoted to developing those inter-personal attributes which are necessary to become a good doctor or dentist. Every opportunity is taken to permit students to interact with medical and dental personnel. Students are encouraged to make surveys or carry out other special projects of interest.

Program in Medical Sciences (PIMS) - This inter-institutional program involving Florida A&M University, Florida State University, and the University of Florida College of Medicine serves as an alternate tract for students who seek to pursue a career in medicine at the university of Florida College of Medicine. Students in the program can complete the equivalent of the first year of medical school (the basic medical sciences) while completing their baccalaureate degree. From among those students participating in the program, up to fifty (50) a year may be guaranteed a position at the University of Florida College of Medicine, upon successful completion of all PIMS required courses and a baccalaureate degree. A separate bulletin describing this program is available.

Pre-Veterinary Medicine - A student who is aspiring to pursue a career in veterinary medicine should plan to complete either Plan I or Plan II of the pre-veterinary program as outlined in the division of agricultural sciences.

Honors Program

The university Honors program provides a series of challenging courses and extra curricular activities for students who excel academically. The major goals of the program are (1) to encourage academic excellence and (2) to provide a more challenging academic experience for high achieving students.

Requirements for General Honors

1. SAT of 1200 or ACT of 27 or above for entering freshmen.
2. GPA of 3.0 for non-entering freshmen and sophomores.
3. Minimum of eighteen (18) hours of honors credit.
4. Completion of an honors thesis (in the senior year).

Advantages of Membership

1. Possible acceleration in completion of general education requirements.
2. Enrollment in classes of reduced size.
3. Opportunities for the development of leadership skills.
4. Recognition on transcript of honors courses successfully taken.
5. Certificate of Achievement for successfully completing the program.
6. Opportunity for participation in regional and national meetings of Honors Councils.

| Tracks | Requirements | Accolades |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Track-1 Honors Scholar | <ul style="list-style-type: none"> • Complete 18 hrs. of Honors Credits • Attend Honors Colloquium/Seminar • Complete 80 hrs. of community service • Present at one Honors conference • Schedule three meetings with honors advisor per semester • 80 hours of HSA (Honor Student Association) participation | <ul style="list-style-type: none"> • Honors Scholar inscribed on transcript • Certificate of Completion • Commencement Medallion |
| Track -II Exemplary Scholar (Only transfer students and juniors at time of admission) | <ul style="list-style-type: none"> • Complete 12 hrs. of Honors Credits • Attend Honors colloquium/Seminar • Complete 80 hrs. of community service • Present at two or more conferences* • Complete Honors-in-the-Major Thesis/Project • Schedule three meetings with honors advisor per semester • 80 hours of HSA (Honor Student Association) participation | <ul style="list-style-type: none"> • Exemplary Scholar inscribed on transcript • Certificate of Completion • Commencement Medallion |

| Tracks | Requirements | Accolades |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Track-III Scholar of Excellence | <ul style="list-style-type: none"> • Complete 18 hrs. of Honors Credits • Attend Honors Colloquium/Seminar • Complete 80 hrs. of community service • Present at three Honors Conferences • Schedule three meetings with honors advisor per Semester • 80 hours of HSA (Honor Student Association) participation | <ul style="list-style-type: none"> • Exemplary Scholar inscribed on transcript • Certificate of completion • Commencement Medallion |

*Other university conferences may be substituted in part for this requirement.

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 support, and academic enhancement activities related to teaching, research, and public service. OIED seeks to enhance 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) International Education and Exchange Programs; and (3) International Research and Development. **(For updated information on the Office of International Education and Development, please see Appendix B).**

International Student and Scholar Services

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 who apply for the H-1 B visas. In addition to administrative support and referral services related to immigration and other needs, ISSS offers a range of programs and activities to enhance 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 an active Host Family Program and participation in the community international awareness activities. OIED also sponsors the International Student Association. **(For updated information on International Student and Scholar Services, please see Appendix B).**

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 print 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 and outreach.

OIED administers a year-round semester program study abroad program in the capital of the Dominican Republic, Santo Domingo for students seeking to experience a Latin American/Caribbean country. Classes are taught at the Pontificia Universidad Cathlica Madre y Maestra (PUCMM). The prescribed academic program for consists of Spanish Language studies, Dominican and Afro-Caribbean culture and literature, directed individual study in the student's major field, and community service component.

The education abroad staff organizes several short-term academic excursions with a service learning component during the spring break or summer sessions for faculty, staff, and students. The enriching activities can be custom 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 which 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, a students can study in over 100 countries and in most field. Applications are processed through the Office of International Education and Development.

The Diplomat-In-Residence (DIR) Program is another component within OIED. Since 2001, FAMU has hosted three Diplomats-in-Residence, a program supported by the U.S. Department of State to encourage more students to pursue careers in the Foreign Services.

The education abroad staff seek 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 of the various opportunities available to them through public and private agencies-for exchanges, research opportunities, and technical assistance to other universities. **(For updated information on Education Abroad and Exchange Programs, please see Appendix B).**

International Research and Development

The International Research and Development Department (IRD) facilitates the development of international collaborative projects by providing technical assistance to faculty and staff that enable FAMU faculty, staff, and students to become involved in international collaborative research and development activities. 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 is the custodian of all international Memoranda of Agreements (MOAs) signed with other entities abroad.

If you need any of these services, please contact the Office of International Education and Development, located in 302 Perry-Paige North or call 850-599-3562 or 850-599-3295. **(For updated information on International Research and Development, please see Appendix B).**

College of Arts and Sciences

The primary mission of the College of Arts and Sciences is to produce well-educated, competent, resourceful graduates who are capable of living active, independent, productive lives and who are properly prepared to launch successful careers and earn satisfactory livelihoods. 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 Arts and Sciences.

Organized into fourteen (14) degree-granting departments and the Department of Army ROTC, the college offers twenty-two separate majors leading to the bachelor of science, bachelor of arts, bachelor of criminal justice, and bachelor of social work degrees. It also offers five master-level programs: master of applied social sciences, master of biology, master of chemistry, master and doctorate of physics, and master of school/community psychology.

Students enrolled in the College of Arts and Sciences 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 and minor courses, and graduate students must have a minimum 3.0. Some programs may require above the minimum for graduation. 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.

ADMISSION REQUIREMENTS

The attention of prospective applicants for admission to the College of Arts and Sciences is directed to the admission requirements of the University, as stated elsewhere in this catalog.

Requirements for Bachelor of Arts Degree

- I. Completion of minimum of 120 semester hours including the following courses:
 - A. ENC 1101, 1102 Freshman Communicative Skills6
 - *B. MAC 1105, MGF 1106; MAC 1105, MGF 1107; MAC 1147, 2311; MAC 3311, 33126
 - C. Any two courses in biology, chemistry, or physics, each with a laboratory chosen from approved natural sciences course list8
 - D. Humanities-see individual departmental requirements6
 - E. AMH 2091 Introduction to African American History and non-history department approved social science course taken from approved social science list6
 - F. Foreign Language12
 - G. Free or Discipline Electives-see departmental requirements3-4
- *See Mathematics CLASP Requirement
- II. Completion of major and minor (see departmental requirement).

Requirements for Bachelor of Science Degree

- I. Completion of minimum of 120 semester hours, including the following courses:
 - A. ENC 1101, 1102 Freshman Communicative Skills6
 - *B. MAC 1105, MGF 1106; MAC 1105, MGF 1107; MAC 1147, 2311; MAC 3311, 33126
 - C. Any two courses in biology, chemistry, or physics, each with a laboratory chosen from approved natural sciences course list8
 - D. Humanities (see individual departmental requirements)6
 - E. AFA 3104 African American Experience and non-history department approved social science course taken from approved social science list6
 - F. Free or Discipline Electives3-4
- II. Completion of major and minor (see departmental requirements).

Requirements for Major

Each candidate for the B.A. or 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. English
2. Music
3. Visual Arts, Humanities and Theatre
4. Foreign Languages
5. Mathematics
6. Physics
7. Chemistry
8. Biology
9. History, Political Science and African-American Studies
10. Psychology
11. Sociology and Criminal Justice
12. Computer Information Sciences
13. Social Work
14. Economics

Requirements for Minor

In consultation with his or her advisor, each candidate for the B.A. or B.S. degree must 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.

THE COLLEGE LEVEL ACADEMIC SKILLS PROGRAM (CLASP)

The College-Level Academic Skills Test (CLAST) is one component of Florida's system of educational accountability. The CLAST is a lower-division, college-achievement test measuring the attainment of college-level communication and mathematics skills. CLAST has four subtests: Essay, Reading, English Language Skills, and Mathematics. Meeting CLAST alternatives or presenting passing scores on CLAST is required of all students who are awarded an associate of arts degree or who seek upper division status in a state university in Florida. Education certification majors are unable to use the CLAST alternatives to satisfy the CLAST requirement.

The College-Level Academic Skills Program (CLASP)-administrated by the Departments of English and Mathematics with a director coordinating activities from a central office-is designed to offer complete support services to students from all academic areas who must sit for the CLAST. These services-the main focus of which is to prepare students to master the CLAST-include administering simulated CLAST tests, advising, tutoring and conducting research.

While enrolled in their general education mathematics and commu-

nication courses, students must meet a simulated CLAST test requirement. Students meeting the State alternatives for the mathematics section of CLAST may seek to be exempted from the mathematics section of the simulated test provided they meet the posted deadline for exemption consideration. Students not meeting the simulated CLAST test requirement are subject to having to complete additional coursework.

All students, unless excused by the CLASP Director, are required to attend CLAST seminars, corresponding to the subtests for which they must sit, during the semester in which they sit for the CLAST. The seminars are conducted from the start of the semester to the week that the CLAST is administered.

For additional information on the CLASP Program, see the CLASP Director, Room 302 Jackson Davis Hall. For additional information on the CLAST, see the Institutional Test Administrator, Room 200A GECA.

COURSES IN WHICH CLAST COMPETENCIES ARE TAUGHT

Communications

Key:

I = Introduced
T = Taught
R = Reinforced

Competency (communications)

| | R | R | | | E | E | | | S | S |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|--|--|---|---|--|--|---|---|
| | E | E | | | N | N | | | P | P |
| | A | A | | | C | C | | | C | C |
| | 1 | 1 | | | 1 | 1 | | | 1 | 2 |
| | 0 | 1 | | | 1 | 1 | | | 6 | 0 |
| | 0 | 0 | | | 0 | 0 | | | 5 | 0 |
| | 1 | 5 | | | 1 | 2 | | | 0 | 0 |
| A. Reading with literal comprehension: | | | | | | | | | | |
| 1. Recognizing the main ideas in a given passage | T | T | | | | | | | | |
| 2. Identifying supporting details | T | T | | | | | | | | |
| 3. Determining the meaning of words on the basis of context | T | T | | | | | | | | |
| B. Reading with critical comprehension: | | | | | | | | | | |
| 1. Recognizing the author's purpose | I | T | | | | | | | | |
| 2. Distinguishing between statement of fact and statement of opinion | I | T | | | | | | | | |
| 3. Detecting bias | | T | | | | | | | | |
| 4. Recognizing author's tone | | T | | | | | | | | |
| 5. Recognizing explicit and implicit relationships within sentences | T | R | | | | | | | | |
| 6. Recognizing explicit and implicit relationships between sentences | T | R | | | | | | | | |
| 7. Recognizing valid arguments | | T | | | | | | | | |
| 8. Drawing logical inferences and conclusions | I | T | | | | | | | | |
| C. Listening with literal comprehension: | | | | | | | | | | |
| 1. Recognizing main ideas | | | | | | | | | T | T |
| 2. Identifying supporting details | | | | | | | | | T | T |
| 3. Recognizing explicit relationships among ideas | | | | | | | | | T | T |
| 4. Recalling basic ideas and details | | | | | | | | | T | T |
| D. Listening with critical comprehension: | | | | | | | | | | |
| 1. Perceiving the speaker's purpose | | | | | | | | | T | T |
| 2. Perceiving the speaker's organization of ideas and information | | | | | | | | | T | T |
| 3. Discriminating between statements of fact and statements of opinion | | | | | | | | | T | T |
| 4. Distinguishing between emotional and logical arguments | | | | | | | | | T | T |
| 5. Detecting bias | | | | | | | | | T | T |
| 6. Recognizing the speaker's attitude | | | | | | | | | T | T |
| 7. Synthesizing by drawing logical inferences and conclusions | | | | | | | | | T | T |
| 8. Evaluating objectively | | | | | | | | | T | T |
| 9. Recalling the arguments and identifying the implications | | | | | | | | | T | T |
| E. Composing unit of discourse providing ideas and information suitable for purpose and audience: | | | | | | | | | | |
| 1. Selecting a subject which lends itself to expository writing | | | | | T | R | | | | |
| 2. Determining the purpose of writing | | | | | T | R | | | | |
| 3. Limiting the subject to a topic which can be developed within the requirements of time, purpose, and audience | | | | | T | R | | | | |
| 4. Formulating a thesis statement which reflects the purpose | | | | | T | R | | | | |
| 5. Developing the thesis statement by all of the following: | | | | | | | | | | |
| a. Providing adequate support which reflects the ability to distinguish between generalized and concrete evidence | | | | | T | R | | | | |
| b. Arranging the main ideas and supporting details in an organizational pattern appropriate to the expository purpose | | | | | T | R | | | | |
| c. Writing unified prose in which all supporting material is relevant to the thesis statement | | | | | T | R | | | | |
| d. Writing coherent prose, providing effective transitional devices which clearly reflect the organizational pattern and the relationships of the parts | | | | | T | R | | | | |

| | R E A | R E A | | | E N C | E N C | | S P C | S P C |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|---|--|------------------|------------------|---|------------------|------------------|
| | 1 0 0 1 | 1 1 0 5 | | | 1 1 0 1 | 1 1 0 2 | | 1 0 5 0 | 2 6 0 0 |
| F. Transmitting ideas and information in effective written language which conforms to the conventions of standard American English: | | | | | | | | | |
| 1. Demonstrating effective word choice by all of the following: | | | | | | | | | |
| a. Using words which convey the denotative and connotative meanings required by context | | | | | T | R | | | |
| b. Avoiding slang, jargon, cliches, and pretentious expressions | | | | | T | R | | | |
| c. Avoiding wordiness | | | | | T | R | | | |
| 2. Employing conventional sentence structure by all of the following: | | | | | | | | | |
| a. Placing modifiers correctly | | | | | T | R | | | |
| b. Coordinating and subordinating sentence elements according to their relative importance | | | | | T | R | | | |
| c. Using parallel expressions for parallel ideas | | | | | T | R | | | |
| d. Avoiding fragments, comma splices, and fused sentences | | | | | T | R | | | |
| 3. Employing effective sentence structure by all of the following: | | | | | | | | | |
| a. Using a variety of sentence patterns | | | | | T | R | | | |
| b. Avoiding unnecessary use of passive construction | | | | | T | R | | | |
| c. Avoiding awkward constructions | | | | | T | R | | | |
| 4. Observing the conventions of standard American English grammar and usage by all of the following: | | | | | | | | | |
| a. Using standard verb forms | | | | | T | R | | | |
| b. Maintaining agreement between subject and verb, pronoun and antecedent | | T | T | | R | | | | |
| c. Using proper case forms | | | | | T | R | | | |
| d. Maintaining a consistent point of view | | | | | T | R | | | |
| 5. Using standard practice for spelling, punctuation, and capitalization | | | | | T | R | | | |
| 6. Revising, editing, and proofreading units of written discourse to assure clarity, consistency, and conformity to the conventions of standard American English | | | | | T | R | | | |
| G. Speaking involves composing the message, providing ideas and information suitable to topic, purpose, and audience which includes all of the following skills: | | | | | | | | | |
| 1. Determining the purpose of the oral discourse | | | | | | | | T | T |
| 2. Choosing a topic and restricting it according to purpose and audience | | | | | | | | T | T |
| 3. Fulfilling the purpose by the following: | | | | | | | | | |
| a. Formulating thesis statement | | | | | | | | T | T |
| b. Providing adequate support material | | | | | | | | T | T |
| c. Selecting a suitable organizational pattern | | | | | | | | T | T |
| d. Demonstrating careful choice of words | | | | | | | | T | T |
| e. Providing effective transitions | | | | | | | | T | T |
| H. Speaking involves transmitting the message, using oral delivery skills suitable to the audience and the occasion by all of the following skills: | | | | | | | | | |
| 1. Employing vocal variety in rate, pitch, and intensity | | | | | | | | T | T |
| 2. Articulating clearly | | | | | | | | T | T |
| 3. Employing the level of American English appropriate to the designated audience | | | | | | | | | |
| 4. Demonstrating nonverbal behavior which supports the verbal message with eye contact and appropriate posture, gestures, facial expressions, and body movement | | | | | | | T | | |
| | | | | | | | T | | |

COURSES IN WHICH CLAST SKILLS ARE INTRODUCED, TAUGHT AND/OR REINFORCED

Mathematics Skills

Key:
I = Introduced
T = Taught
R = Reinforced

| | M A T | M A C | M A C | M A C | M G F | M A D | M G F | M G F |
|-------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | 2 | 0 | 1 | 4 | 0 | 2 | 1 | 0 |
| | 4 | 5 | 4 | 7 | 6 | 0 | 8 | 7 |
| A. ARITHMETIC SKILLS | | | | | | | | |
| IA1a Adds and subtracts rational numbers | T | T | R | T | R | R | T | T |
| IA1b Multiplies and divides rational numbers | T | T | R | T | R | R | T | T |
| IA2a Adds and subtracts rational numbers in decimal form | T | T | R | T | R | R | T | T |
| IA2b Multiplies and divides rational numbers in decimal form | T | T | R | T | R | R | T | T |
| IA3 Calculates percent increase and percent decrease | T | T | R | T | I | I | T | T |
| IA4 Solves the sentence a % of b is c, where values for two of the variable are given | T | T | R | T | I | R | T | T |
| IIA1 Recognizes the meaning of exponents | T | T | T | T | R | R | T | T |
| IIA2 Recognizes the role of the base number in determining place value in the base-ten numeration system | T | T | R | T | I | I | T | R |
| IIA3 Identifies equivalent forms of positive rational numbers involving decimals, percents, and fractions | T | T | R | T | R | R | T | T |
| IIA4 Determines the order relation between real numbers | T | T | R | T | R | R | T | T |
| IIA5 Identifies a reasonable estimate of a sum, average, or product of numbers | R | R | R | R | T | R | T | R |
| IIIA1 Infers relations between numbers in general by examining particular number pairs | T | T | R | T | I | I | T | T |
| IVA1 Solves real-world problems which do not require the use of variables and which do not involve percent | T | T | R | T | I | I | T | T |
| IVA2 Solves real-world problems which do not require the use of variables and which do require the use of percent | T | T | T | T | - | T | T | T |
| IVA3 Solves problems that involve the structure and logic of arithmetic | T | T | R | T | R | R | T | T |
| B. GEOMETRY AND MEASUREMENT SKILLS | | | | | | | | |
| IB1 Rounds measurements to the nearest given unit of the measuring device used | I | T | R | T | T | T | T | R |
| IB2a Calculates distances | I | T | T | T | T | R | T | R |
| IB2b Calculates areas | I | T | T | T | T | R | T | R |
| IB2c Calculates volumes | I | T | R | T | T | R | T | R |
| IIB1 Identifies relationships between angle measures | I | T | T | T | T | I | T | |
| IIB2 Classifies simple plane figures by recognizing their properties | I | T | T | T | T | I | T | |
| IIB3 Recognizes similar triangles and their properties | I | T | T | T | T | I | T | R |
| IIB4 Identifies appropriate units of measurement for geometric objects | I | T | T | T | T | R | T | |
| IIIB1 Infers formulas for measuring geometric figures | I | T | T | T | T | I | T | R |
| IIIB2 Selects applicable formulas for computing measures of geometric figures | I | T | T | T | T | R | T | R |
| IVB1 Solves real-world problems involving perimeters, areas, volumes of geometric figures | I | T | T | T | T | R | T | R |
| IVB2 Solves real-world problems involving the Pythagorean property | I | T | T | T | T | R | T | R |

| | M A T | M A C | M A C | M A C | M G F | M A D | M G F | M G F |
|------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| | 2 | 0 | 1 | 4 | 0 | 2 | 1 | 0 |
| | 4 | 5 | 4 | 7 | 6 | 0 | 8 | 7 |
| C. ALGEBRA SKILLS | | | | | | | | |
| IC1a Adds and subtracts real numbers | T | T | R | T | I | R | T | T |
| IC1b Multiplies and divides real numbers | T | T | R | T | I | R | T | T |
| IC2 Applies the order-of-operations agreement to computations involving numbers and variables | T | T | R | T | I | R | T | T |
| IC3 Uses scientific notation in calculations involving very large or very small measurements | T | T | R | T | I | R | T | T |
| IC4a Solves linear equations | T | T | T | T | I | R | T | T |
| IC4b Solves linear inequalities | T | T | T | T | I | R | T | T |
| IC5 Uses given formulas to compute results, when geometric measurements are not involved | T | T | R | T | I | R | T | T |
| IC6 Finds particular values of a function | T | T | R | T | I | R | T | T |
| IC7 Factors a quadratic expression | I | T | T | T | I | R | T | T |
| IC8 Finds the roots of a quadratic equation | T | T | R | T | I | I | T | T |
| IC9 Solves a system of two linear equations in two unknowns | T | T | R | T | I | I | T | T |
| IIC1 Uses properties of operations correctly | T | T | T | T | I | R | T | |
| IIC2 Determines whether a particular number is among the solutions of a given equation or inequality | T | T | R | T | I | R | T | T |
| IIC3 Recognizes statements and conditions of proportionality and variation | T | T | R | T | I | I | T | T |
| IIC4 Identifies regions of the coordinate plane which correspond to specified conditions and vice versa | T | T | R | T | | T | T | T |
| IIIC2 Uses applicable properties to select equivalent equations and inequalities | T | T | R | T | I | R | T | T |
| IVC1 Solves real-world problems involving the use of variables aside from commonly used geometric formulas | T | T | R | T | I | R | T | T |
| IVC2 Solves problems that involve the structure and logic of algebra | T | T | R | T | I | I | T | T |
| D. STATISTICS SKILLS | | | | | | | | |
| ID1 Identifies information contained in bar, line and circle graphs | I | I | I | I | T | T | T | |
| ID2 Determines the mean, median, and mode of a set of numbers | I | I | I | I | T | T | T | |
| ID3 Uses the fundamental counting principle | I | I | I | I | T | T | T | |
| IID1 Recognizes properties and interrelationships among the mean, median, and mode in a variety of distributions | I | I | I | I | T | T | T | |
| IID2 Chooses the most appropriate procedure for selecting an unbiased sample from a target population | I | I | I | I | T | T | T | |
| IID3 Identifies the probability of a specified outcome in an experiment | I | I | I | I | T | T | T | |
| IIID1 Infers relations and makes accurate predictions from studying statistical data | I | I | I | I | T | T | T | |
| IVD1 Interprets real-world data involving frequency and cumulative frequency tables | I | I | I | I | T | T | T | |
| IVD2 Solves real-world problems involving probabilities | I | I | I | I | T | T | T | |
| E. LOGICAL REASONING | | | | | | | | |
| IE1 Deduces facts of set inclusion or set non-inclusion from a diagram | I | I | I | I | T | T | T | T |
| IIE1 Identifies statements equivalent to the negations of simple T | | | | | | | | |
| IIE2 Determines equivalence or nonequivalence of statements | I | I | I | I | T | T | T | T |
| IIE3 Draws logical conclusions from data | I | I | I | I | T | T | T | T |
| IIE4 Recognizes that an argument may not be valid even though its conclusion is true | I | I | I | I | T | T | T | T |
| IIIE1 Recognizes valid reasoning patterns as illustrated by valid arguments in everyday language | I | I | I | I | T | T | T | T |
| IIIE2 Selects applicable rules for transforming statements without affecting their meaning | I | I | I | I | T | T | T | T |
| IVE1 Draws logical conclusions when facts warrant them | I | I | I | I | T | T | T | T |

DEPARTMENT OF BIOLOGICAL SCIENCES

A student may obtain a Bachelor of Science degree from one of the four curricula. A particular curriculum should be selected only after discussion with an academic advisor in the department.

Grade and Quality Point Requirements - The student in biology who plans to pursue a degree in any of the major curricula will be required to earn a grade of "C" or better in biology core courses (lecture & lab).

Requirements for a Minor in Biology - A minor in biology requires twenty credit hours of biology courses. A student must complete BSC 1010 & 1011 (lecture and lab) with a grade of "C" or better. The additional twelve hours may be taken from the following courses: ZOO 3713, PCB 2033, PCB 3063, BOT 3303, BOT 2313, PCB 4024, PCB 4023, and PCB 3723.

Faculty

Professors: Latinwo, Lekan; Adams, James; Washington, Arthur

Assistant Professors: Abonyo, Barack; Drum, Matthew; Gottschalk, Virginia; Hacisalihoglu, Gokan; Lebby, Kimberly; McCollum, Adrian; Miller, J.R.; Odewumni, Caroline O; Rolle, Roderick; Thornton, Michael;

Instructors: Abdullah, Ahkinya; Mihalcik, Elizabeth

Instructor/Academic Advisor: Banks, Letina

Bachelor of Science in Biology (Concentration in Molecular and Cellular Biology)

| Freshman Year | Sem. Hrs. |
|--------------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| BSC 1010 General Biology I Lecture | 3 |
| BSC 1010L General Biology Lab I | 1 |
| BSC 3926 Professional Development for Biology | 1 |
| MAC 1105 or 1147 College Algebra or Pre-Calculus | 3 |
| ENC 1101 Freshman Communication Skills I | 3 |
| CHM 1045 General Chemistry I Lecture | 3 |
| CHM 1045L General Chemistry I Lab | 1 |
| | 15 or 16 |
| <u>Spring Semester</u> | |
| 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 or 2311 Trig. Functions or Calculus I | 3 or 4 |
| | 14 or 15 |

Sophomore Year

| | |
|---------------------------------------|----|
| <u>Fall Semester</u> | |
| PCB 2033 Ecology | 3 |
| Humanities Elective | 3 |
| MAC 2311 Calculus I | 4 |
| CHM 3210 Organic Chemistry I Lecture | 3 |
| CHM 3210L Organic Chemistry I Lab | 1 |
| Social Science Elective | 3 |
| | 17 |
| <u>Spring Semester</u> | |
| ZOO 3713 Comparative Anatomy | 4 |
| CHM 3211 Organic Chemistry II Lecture | 3 |

| | |
|------------------------------------|----|
| CHM 3211L Organic Chemistry II Lab | 1 |
| Humanities Elective | 3 |
| MCB 3010 Microbiology | 4 |
| | 15 |

Summer Semester

| | |
|-------------------------------------------------------|---|
| STA 2023 Statistics/Biostatistics | 3 |
| AMH 2091 Introduction to African American History or | |
| AFA 3104 Introduction to African American Experiences | 3 |
| | 6 |

Junior Year

| | |
|----------------------------------------|----|
| <u>Fall Semester</u> | |
| PCB 3063 Genetics | 4 |
| Biology Elective | 6 |
| PHY 2048 General Physics Lecture | 4 |
| PHY 2048L General Physics Lab | 1 |
| | 15 |
| <u>Spring Semester</u> | |
| BOT 3303/2313 Plant Anatomy/Morphology | 3 |
| Biology Elective | 4 |
| Free Elective (above 2000 level) | 3 |
| PHY 2049 General Physics II Lecture | 4 |
| PHY 2049L General Physics II Lab | 1 |
| | 15 |

Senior Year

| | |
|----------------------------------------|-------|
| <u>Fall Semester</u> | |
| BCH 4033 Biochemistry I Lecture | 3 |
| BCH 4033L Biochemistry I Lab | 1 |
| PCB 4023 Molecular Cell Biology | 4 |
| Free Elective (2000 level or above) | 3 |
| Free Elective (2000 level or above) | 3 |
| | 14 |
| <u>Spring Semester</u> | |
| PCB 3723 Vertebrate Physiology Lecture | 3 |
| PCB 3723 Vertebrate Physiology Lab | 1 |
| Chemistry Elective | 1-4 |
| Biology Elective | 3 |
| BSC 4930 Professional Seminar | 1 |
| Free Elective (2000 level or above) | 3 |
| | 12-15 |

Total Hours120

Bachelor of Science in Biology (Concentration in Pre-Professional)

| | |
|--------------------------------------------------|-----------|
| Freshman Year | Sem. Hrs. |
| <u>Fall Semester</u> | |
| 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 or 1147 College Algebra or Pre-Calculus | 3 or 4 |
| BSC 3926 Professional Development for Biology | 1 |
| ENC 1101 Freshman Communication Skills I | 3 |
| | 14 or 15 |

| | |
|------------------------------------------------|----------|
| <u>Spring Semester</u> | |
| 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 or 2311 Trig. Functions or Calculus I | 3 or 4 |
| | 14 or 15 |

Sophomore Year

Sem.Hrs.

| | |
|--------------------------------------|----|
| <u>Fall Semester</u> | |
| PCB 2033 Ecology | 3 |
| CHM 3210 Organic Chemistry I Lecture | 3 |
| CHM 3210L Organic Chemistry I Lab | 1 |
| Humanities Elective | 3 |
| Social Science Elective | 3 |
| MAC 2311 Calculus I | 4 |
| | 17 |

Spring Semester

| | |
|---------------------------------------|----|
| ZOO 3713 Comparative Anatomy | 4 |
| CHM 3211 Organic Chemistry II Lecture | 3 |
| CHM 3211L Organic Chemistry II Lab | 1 |
| Humanities Elective | 3 |
| MCB 3010 Microbiology | 4 |
| | 15 |

Summer Semester

| | |
|-------------------------------------------------------|---|
| STA 2023 Statistics | 3 |
| AMH 2091 Introduction to African American History or | |
| AFA 3104 Introduction to African American Experiences | 3 |
| | 6 |

Junior YearFall Semester

| | |
|------------------------------------|----|
| PCB 3063 Genetics | 4 |
| Biology Elective | 3 |
| ZOO3653 Developmental Anatomy | 3 |
| PHY 2048 General Physics I Lecture | 4 |
| PHY 2048L General Physics I Lab | 1 |
| | 15 |

Spring Semester

| | |
|-------------------------------------------------|----|
| BOT 3303/2313 Plant Anatomy or Plant Morphology | 3 |
| Biology Elective | 4 |
| Free Elective (above 2000 level) | 3 |
| PHY 2049 General Physics II Lecture | 4 |
| PHY 2049L General Physics II Lab | 1 |
| | 15 |

Senior YearFall Semester

| | |
|---------------------------------|---|
| BSC 4930 Professional Seminar | 1 |
| BCH 4033 Biochemistry I Lecture | 3 |
| BCH 4033L Biochemistry I Lab | 1 |
| PCB 4023 Molecular Cell Biology | 4 |

| | |
|----------------------------------|----|
| Free Elective (above 2000 level) | 3 |
| | 12 |

Spring Semester

| | |
|----------------------------------------|----|
| PCB 3723 Vertebrate Physiology Lecture | 3 |
| PCB 3723L Vertebrate Physiology | 1 |
| BCH 4034 Biochemistry II Lecture | 3 |
| BCH 4034L Biochemistry II Lab | 1 |
| Free Elective (above 2000 level) | 3 |
| | 11 |

Total Semester Hours120**Bachelor of Science in Biology
(Concentration in Organismal, Ecological and
Environmental Biology)****Freshman Year**Sem. Hrs.Fall Semester

| | |
|------------------------------------------------------|----------|
| BSC 1010 General Biology I Lecture | 3 |
| BSC 1010L General Biology Lab I | 1 |
| MAC 1105 or MAC 1147 College Algebra or Pre-Calculus | 3 or 4 |
| ENC 1101 Freshman Communication Skills I | 3 |
| CHM 1045 General Chemistry I Lecture | 3 |
| CHM 1045L General Chemistry I Lab | 1 |
| BSC 3926 Professional Development for Biology | 1 |
| | 15 or 16 |

Spring Semester

| | |
|------------------------------------------------|----------|
| 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 or 2311 Trig. Functions or Calculus I | 3 or 4 |
| | 14 or 15 |

Sophomore YearFall Semester

| | |
|--------------------------------------|----|
| PCB 2033 Ecology | 3 |
| Humanities Elective | 3 |
| CHM 3210 Organic Chemistry I Lecture | 3 |
| CHM 3210L Organic Chemistry I Lab | 1 |
| Social Science Elective | 3 |
| MAC 2311 Calculus I | 4 |
| | 17 |

Spring Semester

| | |
|---------------------------------------|----|
| ZOO 3713 Comparative Anatomy | 4 |
| CHM 3211 Organic Chemistry II Lecture | 3 |
| CHM 3211L Organic Chemistry II Lab | 1 |
| Humanities | 3 |
| MCB 3010 Microbiology | 4 |
| | 15 |

Summer Semester

| | |
|-------------------------------------------------------|---|
| STA 2023 Statistics/Biostatistics | 3 |
| AMH 2091 Introduction to African American History or | |
| AFA 3104 Introduction to African American Experiences | 3 |
| | 6 |

Junior Year

Fall Semester

| | |
|----------------------------------------|----|
| PCB 3063 Genetics | 4 |
| Biology Elective | 6 |
| PHY 2048 General Physics Lecture | 4 |
| PHY 2048L General Physics Lab | 1 |
| | 15 |

Spring Semester

| | |
|----------------------------------------------|----|
| BOT 3303/2313 Plant Anatomy/Morphology | 3 |
| Biology Elective | 4 |
| PCB 4674 Evolutionary Biology | 3 |
| PHY 2049 General Physics II Lecture | 4 |
| PHY 2049L General Physics II Lab | 1 |
| | 15 |

Senior Year

Fall Semester

| | |
|-------------------------------------------|----|
| BSC 4930 Professional Seminar | 1 |
| BCH 4033 Biochemistry I Lecture | 3 |
| BCH 4033L Biochemistry I Lab | 1 |
| PCB 4023 Molecular Cell Biology | 4 |
| Free Elective (2000 level or above) | 3 |
| | 12 |

Spring Semester

| | |
|----------------------------------------------|------|
| PCB 3723 Vertebrate Physiology Lecture | 3 |
| PCB 3723 Vertebrate Physiology Lab | 1 |
| Chemistry Elective | 1 |
| Free Elective (2000 level or above) | 3 |
| | 8-12 |

Total Semester Hours120

**Bachelor of Science in Science Education
(Concentration in Biology Education)**

Freshman Year

Sem. Hrs.

Fall Semester

| | |
|-----------------------------------------------------|----|
| ENC 1101 Freshman Communication Skills I | 3 |
| MAC 1105 College Algebra | 3 |
| BSC 1010 General Biology I Lecture | 3 |
| BSC 1010 General Biology I Lab | 1 |
| CHM 1045 General Chemistry I Lecture | 3 |
| CHM 1045L General Chemistry I Lab | 1 |
| EDG 3004 Overview and Orientation to teaching | 1 |
| | 15 |

Spring Semester

| | |
|-------------------------------------------------|----|
| ENC 1102 Freshman Communication Skills II | 3 |
| MAC 1114 Trigonometric Functions | 3 |
| BSC 1011 General Biology II Lecture | 2 |
| BSC 1011 General Biology II Lab | 2 |
| CHM 1046 General Chemistry II Lecture | 3 |
| CHM 1046 General Chemistry II Lab | 1 |
| EDF 1005 Introduction to Education | 3 |
| | 17 |

Summer Semester

| | |
|------------------------------------|---|
| PSY 2012 Intro to Psychology | 3 |
| SPC 2600 Public Speaking or | |

| | |
|--------------------------------------------|---|
| SPC 1050 Speech and Language Control | 3 |
| AMH 2010 U.S. History 1492-1865 or | |
| AMH 2020 U. S. History 1865-Present | 3 |
| | 9 |

Sophomore Year

Fall Semester

| | |
|--------------------------------------------|----|
| PCB 2033 Ecology | 3 |
| CHM 3210 Organic Chemistry I Lecture | 3 |
| CHM 3210L Organic Chemistry I Lab | 1 |
| ARH 2000 Art Appreciation or | |
| MUL 2111 Intro.To Music or | |
| THE 2311 Theatre Appreciation | 3 |
| MAC 2311 Calculus I | 4 |
| EDG 2701 Teaching Diverse Population | 3 |
| | 17 |

Spring Semester

| | |
|-------------------------------------------------|----|
| MCB 3010 Microbiology | 4 |
| CHM 3211 Organic Chemistry II Lecture | 3 |
| CHM 3211L Organic Chemistry II Lab | 1 |
| PHI 2010 Intro. to Philosophy | 3 |
| EME 2040 Intro. to Educational Technology | 3 |
| AMH 2091 African American History | 3 |
| | 17 |

Junior Year

Fall Semester

| | |
|-----------------------------------------------------------|----|
| ZOO 3603 Developmental Anatomy | 3 |
| BOT 3303/2313 Plant Anatomy/Morphology | 3 |
| TSL 4324 Instructional Strategies for Teaching ESOL | 3 |
| PHY 2053 College Physics I Lecture | 3 |
| PHY 2053L College Physics I Lab | 1 |
| Or | |
| PHY 2048 General Physics I Lecture | 4 |
| PHY 2048L General Physics I Lab | 1 |
| BSC 4930 Professional Seminar | 1 |
| | 17 |

Spring Semester

| | |
|-------------------------------------------------------------|----|
| GLY 2001 Intro. to Earth-Space Science | 3 |
| PCB 3723 Vertebrate Physiology Lecture | 3 |
| PCB 3723L Vertebrate Physiology Lab | 1 |
| ESE 4930 Inst. Seminar in Secondary Ed-Theory and Law | 3 |
| PHY 2054 College Physics II Lecture or | |
| PHY 2049 General Physics II Lecture | 4 |
| SCE 3330 Teaching Science in High School | 3 |
| | 16 |

Senior Year

Fall Semester

| | |
|-----------------------------------------------------------------|----|
| ESE 3341 Theory and Practice of Teaching | 3 |
| EDF 3430 Measurement and Evaluation of Educational Growth | 3 |
| PCB 3063 Genetics | 4 |
| EDF 3135 Adolescent Psychology | 3 |
| | 13 |

Spring Semester

ESE 4943 Student Teaching6

6

Total Hours127

Course Descriptions

BSC 2093 Anatomy and Physiology (3) Prereq: BSC 1005C or BSC 1010, CHM 1030 or CHM 1045. Normal structure and physiology of the skeleton, muscle, and nervous systems. Lecture.

BSC 2093L Anatomy and Physiology I Lab (1) 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) Continuation of BSC 2093 and deals with cardio-vascular, digestive, renal, and reproductive systems (non-majors).

BSC 4833 Radiation Biology (3). Radiations emitted by atomic nuclei, radiation absorption, cell survival, immunology, protective actions, recovery from irradiation, and radiation protection.

BOT 2313C01 Plant Anatomy and Development (2) Prereq: BSC 1011. Structure and development of higher plants in relationship to functions. Lecture and lab.

BOT 3303 Plant Morphology C01 (2) Prereq: BSC 1011. Plant forms, their habitat, general features, means of reproduction, and plant evolution. Lecture/Lab.

BSC 1010C General Biology I (4) General biological principles and cell function for biology and other health science majors. Must earn a "C" Grade to advance. Lecture/labs.

BSC 1011C General Biology II (4) 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/labs.

BSC 3926 Professional Development for Biology (0) A course designed for biology majors to participate in seminars given by scientists and to engage in activities that help them grow professionally.

BSC 4101 History of Biology (2) Prereq: none. A survey of the history of biology from ancient times to modern era focusing on ancient Greece, Hellenistic and Arabic cultures, scientific societies, and development of cell biology, embryology, genetics, microbiology, physiology and evolution.

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).

BSC 4974A Cell Biology for Honors (4) Prereq: BSC 1011, BCH 4033. Macromolecular structure of cell and subcellular organelles, including nucleus, mitochondrion and chloroplast, their organization as well as function. Individual special assignments on related topics.

BSC 4974B Histology for Honors (4) Prereq: ZOO 3713C, ZOO 3653. Microscopic anatomy and ultra-structure of normal cells, tissue preparation, and staining techniques. Individual assignments of special problems.

BSC 4974C Marine Biology for Honors (4) Prereq: PCB 2033C. Study of marine ecosystem zones, physio-chemical factors, interrelationships of plants, animals and environment, estuaries, marshes, and coral reefs. Individual assignments on related topics.

BSC 4974D Principles of Genetics for Honors (4) Prereq: BSC 1011C. Basic principles which control transmission of hereditary characters and factors which cause mutation. Individual assignments on related topics.

BSC 4974E Vertebrate Physiology for Honors Prereq: PCB 3743. Organ systems of mammals, with emphasis on human systems; digestion, endocrines and reproduction, and special sensory systems.

APB 3501 Pathophysiology (3) Prereq: APB 3220, PCB 3743. Physiology of cells, organs, and systems of human body as related to pathological conditions.

BSC 1005C Biological Science (4) Study of basic biological principles. Topics include cell structure, genetics, diversity of organisms, physiology and ecology. Lectures/laboratory for non-majors.

MCB 3005C01 Microbiology (4) An introductory microbiology course for nursing and others majors. Lecture and lab.

MCB 3010C01 Microbiology (3) Prereq: BSC 1011 and CHM 1046. Biology of microorganisms and viruses including taxonomy and pathogenic relationships. Lecture and lab.

OCB 4042 C01 Introduction to Marine Biology (3) Prereq: PCB 2033C. Topics of marine ecosystem such as primary production, energy relations, physiochemical factors, taxonomic groups, deep estuaries, lagoons, and marshes are covered. Field trips supplementary.

PCB 2033C01 Introduction to Ecology (3) Prereq: BSC 1011C. 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 3063C01 Principles of Genetics (3) Prereq: BSC 1011C. 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 3723C Vertebrate Physiology (3) Prereq: BSC 1010C, BSC 1011C, CHM 1045C, CHM 1046C, CHM 3210C, CHM 3211C, and PHY 3053C, PHY 3054 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 Cell Biology C01 (3) Prereq: BSC 1011C and BCH 4033. Fractionation, structure and function of subcellular organelles. Macromolecular organization of the cell, information transfer and protein synthesis. Lecture/laboratory.

PCB 4024C01 Molecular Biology (3) Prereq: BSC 1011, BCH 4033. Structure of DNA in organisms, duplication, protein synthesis, analysis of DNA, and genetic engineering. Lecture/laboratory.

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 4201 Cell Physiology (4) Prereq: PCB 4023 Cell Biology. Cells in diverse environments, energy metabolism of cells: cellular reactions, kinetics, redox potentials, release of energy, oxygen consumption, photosynthesis, biosynthesis, and regulation of cellular metabolism.

PCB 4233 Immunology (3) Prereq: MCB 3020. Introduction to the immune system, Ag/Ab reactions, development of vaccines and the applications.

PCB 4315 Marine Ecology (4) Prereq: PCB 2033C Ecology. Ocean environment and subdivisions, salinity and temperature, plankton, nekton, productivity, shore zone, neitic and oceanic regions, deep sea environment, importance of oceans to earth and man, and submarine vents.

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 3173 Biostatistics. 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 3063 Genetics. 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 2203L Invertebrate Zoology Lab (1) A lab course that surveys taxonomy and structure of invertebrate.

ZOO 2303C Vertebrate Zoology (2) Prereq: BSC 1011. Taxonomy, morphology, functional anatomy, behavior, adaptations, migrations, dor-

mancy, reproduction, development, growth, zoogeography and populations of vertebrate animals. Lecture.

ZOO 2303L Vertebrate Zoology Lab (1) A course designed to explain structure and taxonomy of vertebrate animals.

ZOO 2203L Invertebrate Zoology (2) Prereq: BSC 1011. Advanced study of taxonomy, physiology, life history, and ecology of invertebrates. Porifera through the protochordata covered. Lecture.

ZOO 3653C01 Development Anatomy (Embryology) (2) Prereq: BSC 1011C. Comparative development of vertebrate embryos with special emphasis on chick and pig; developmental genetics and cellular differentiation. Lecture/Lab.

ZOO 3713C01 Comparative Vertebrate Anatomy (4) Prereq: BSC 1011, ZOO 3653. Comparative study of organ systems of vertebrates. Laboratory dissections of selected types. Lecture/Lab.

ZOO 3753C01 Histology C01 (3) Prereq: Zoo 3653, ZOO 3713. Microscopic anatomy and ultra structure of normal cells, tissues and organs. Tissue preparation and staining techniques. Lecture and lab.

ZOO 4233 Parasitology (2) Prereq: ZOO 3713, ZOO 3653. 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.

DEPARTMENT OF CHEMISTRY

Students may choose any of the four (4) Bachelor of Science degree programs as a major course of study. The Bachelor of Science in Science Education program (major in chemistry education) is designed to train students for careers in secondary education; the Bachelor of Science track with certification by the American Chemical Society is designed to prepare students for immediate industrial employment or graduate training. The Bachelor of Science pre-medicine/pre-dentistry track is designed for students who plan careers in medicine or dentistry or veterinary science; the Bachelor of Science biochemistry major prepare students for careers in medicine, dentistry or biotechnology.

No chemistry course with a grade below "C" will be acceptable 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 five (5) semester hours of chemistry courses approved by the department.

Faculty

Professors: Dhanarajan, Zachariah C.; Turner, Ralph W.; Ikediobi, Christopher, O.; Ugochukwu, Ngozi

Associate Professors: Bouyer, James; Edington, Maurice; Edwards, Jesse; Weininger, Marc S.

Assistant Professor: Mateeva, Nelly; Musa, Musiliyu; Onyeozili, Edith

Faculty: Lyles-Eggleston, Margaret; Mochona, Bereket;

Instructor: Ayuk-Takem, Lambert

Bachelor of Science Degree in Chemistry (with Teacher Certification)

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------------|-----------|
| ENC 1101 & 1102 Freshman Communicative Skills I, II | .6 |
| CHM 1045 & 1046 General Chemistry I, II w/Lab | .8 |
| CHM 1901, 1902 Freshman Special Topics I, II | .2 |
| MAC 2311 and 2312 Calculus I and II | .8 |
| BSC 1010 General Biology w/Lab | .4 |
| EDG 3004 Overview and Orientation w/FC | .1 |
| PSY 2012 Introduction to Psychology | .3 |
| | <u>32</u> |

Sophomore Year

| | |
|---------------------------------------------------|-----------|
| CHM 3120 Analytical Chemistry w/Lab | .4 |
| CHM 2210 and 2211 Organic Chemistry I, II w/Lab | .8 |
| AMH 2091 Introduction to African American History | .3 |
| Math Elective (w/Geometry) | .4 |
| Humanities Elective | .3 |
| GLY 2001 Introduction to Earth/Space Science | .3 |
| EME 2040 Introduction to Educational Technology | .3 |
| EDG 2701 Teach Diverse Populations w/FC | .3 |
| EDF 1005 Introduction to Education w/FC | .3 |
| | <u>34</u> |

Junior Year

| | |
|--------------------------------------------------|-----------|
| BCH 4033 Biochemistry I w/Lab | .4 |
| PHY 2048 and 2049 General Physics I and II w/Lab | .10 |
| CHM 4410 Physical Chemistry I w/Lab | .4 |
| PHI 2010 Introduction to Philosophy | .3 |
| SPC 2600 Public Speaking | .3 |
| EDP 3135 Adolescent Psychology | .3 |
| EDF 3430 Measurement & Evaluation | .3 |
| ESE 3341 Theory & Practice w/FC | .3 |
| | <u>33</u> |

Senior Year

| | |
|--------------------------------------------------|------------|
| CHM 3610 Intermediate Inorganic Chemistry | .3 |
| CHM 4930 Chemistry Seminar | .1 |
| ESE 4930 Instructional Seminar in Sec. Education | .3 |
| TSL 4324 ESOL Strategies for Instruction | .3 |
| SCE 3330 Teaching Science in High Schools w/FC | .3 |
| ESE 4943 Student Teaching | .6 |
| RED 3333 Teaching Reading in Content Areas | .3 |
| | <u>22</u> |
| Total Semester Hours | 121 |

Bachelor of Science Degree in Chemistry (American Chemical Society Certification)

| Freshman Year | Sem. Hrs. |
|----------------------------------------------------|-----------|
| CHM 1045, 1046 General Chemistry I, II | .6 |
| CHM 1045L, 1046L General Chemistry I, II Lab | .2 |
| MAC 2311, 2312 Calculus I, II | .8 |
| BSC 1010, 1011 Biological Science w/Lab | .8 |
| ENC 1101, 1102 Freshman Communicative Skills I, II | .6 |
| CHM 1901, 1902 Freshman Special Topics I, II | .2 |
| | <u>32</u> |

Sophomore Year

| | |
|-----------------------------------------------|-----------|
| CHM 2210, 2211 Organic Chemistry I, II | .6 |
| CHM 2210L, 2211L Organic Chemistry I, II Lab | .2 |
| CHM 3120 Analytical Chemistry | .2 |
| CHM 3120L Analytical Chemistry Lab | .2 |
| CHM 3610 Intermediate Inorganic Chemistry | .3 |
| MAC 3313 Calculus III | .5 |
| PHY 2048, 2049 General Physics I, II w/Labs | .10 |
| Approved Humanities Elective | .3 |
| CHM 2903, 2904 Sophomore Special Topics I, II | .2 |
| | <u>35</u> |

Junior Year

| | |
|---------------------------------------------------|---|
| AMH 2091 Introduction to African-American History | 3 |
| CHM 4410, 4411 Physical Chemistry I, II | 6 |
| CHM 4410L, 4411L Physical Chemistry I, II Lab | 2 |
| BCH 4033, 4034 Biochemistry I, II | 6 |
| BCH 4033L, 4034L Biochemistry I, II Lab | 2 |
| CHM 4220 Advanced Organic Chemistry | 3 |
| CHM 3905, 3906 Junior Special Topics I, II | 2 |
| Approved Humanities Elective | 3 |
| Approved Social Science Elective | 3 |

30

Senior Year

| | |
|-----------------------------------------------------------------------|---|
| CHM 3610 Intermediate Inorganic Chemistry | 3 |
| CHM 4130 Instrumental Analysis | 3 |
| CHM 4130L Instrumental Analysis Lab | 1 |
| BCH 4042 Proteins | 3 |
| CHM 4900 Short Courses in Chemistry | 3 |
| CHM 4930 Chemistry Seminar | 1 |
| Approved Chemistry Elective | 3 |
| Approved Computer Science Elective | 3 |
| Electives in Math, Biology, Chemistry, Physics or Computer Technology | 3 |

23

Total Semester Hours120**Bachelor of Science Degree in Chemistry (Pre-Medicine/Pre-Dentistry Option)****Freshman Year**

Sem. Hrs.

| | |
|----------------------------------------------------|---|
| CHM 1045, 1046 General Chemistry I, II | 6 |
| CHM 1045L, 1046L General Chemistry I, II Lab | 2 |
| CHM 1901, 1902 Freshman Special Topics I, II | 2 |
| BSC 1010, 1011 General Biology I, II w/Labs | 8 |
| ENC 1101, 1102 Freshman Communicative Skills I, II | 6 |
| MAC 2311, 2312 Calculus I, II | 8 |

32

Sophomore Year

| | |
|-----------------------------------------------|---|
| CHM 2210, 2211 Organic Chemistry I, II | 6 |
| CHM 2210L, 2211L Organic Chemistry I, II Lab | 2 |
| PHY 2048, 2049 General Physics I, II | 8 |
| PHY 2048L, 2049L General Physics Labs | 2 |
| CHM 2903, 2904 Sophomore Special Topics I, II | 2 |
| Approved Humanities Elective | 3 |
| Approved Biology Electives | 8 |

31

Junior Year

| | |
|-------------------------------------------------------|---|
| BCH 4033, 4034 Biochemistry I, II | 6 |
| BCH 4033L, 4034L Biochemistry I, II Lab | 2 |
| CHM 4400, 4401 Physical Chemistry/ Life Science I, II | 6 |
| CHM 3610 Intermediate Inorganic Chemistry | 3 |
| CHM 4013L Phys. Char./Biomolecules | 2 |
| Approved Biology Electives | 4 |
| MAC 3313 Calculus III | 5 |
| CHM 3905, 3906 Junior Special Topics I, II | 2 |

30

Senior Year

| | |
|--------------------------------------|---|
| CHM 4130 Instrumental Analysis w/Lab | 4 |
| CHM 4930 Chemistry Seminar | 1 |
| CHM 3120 Analytical Chemistry w/Lab | 4 |
| AMH 2091 African American History | 3 |
| Approved Social Science Elective | 3 |
| Approved Humanities Elective | 3 |
| BCH 4042 Proteins | 3 |
| BCH 4044 Nucleic Acids | 3 |
| Approved Computer Science Elective | 3 |

27

Total Semester Hours120**Bachelor of Science Degree in Chemistry (Biochemistry Option)****Freshman Year**

Sem. Hrs.

| | |
|----------------------------------------------------|---|
| CHM 1045, 1046 General Chemistry I, II | 6 |
| CHM 1045L, 1046L General Chemistry I, II Lab | 2 |
| CHM 1901, 1902 Freshman Special Topics I, II | 2 |
| BSC 1010 1011 General Biology I, II w/Labs | 8 |
| ENC 1101, 1102 Freshman Communication Skills I, II | 6 |
| MAC 2311, 2312 Calculus I, II | 8 |
| Approved Humanities Elective | 3 |

35

Sophomore Year

Sem. Hrs

| | |
|-----------------------------------------------|---|
| CHM 2210, 2211 Organic Chemistry I, II | 6 |
| CHM 2210L, 2211L Organic Chemistry I, II Lab | 2 |
| MAC 3313 Calculus III | 5 |
| PHY 2048, 2049 General Physics I, II | 8 |
| PHY 2048L, 2049L General Physics I, II Lab | 2 |
| Approved Biology Electives | 8 |
| CHM 2093, 2904 Sophomore Special Topics I, II | 2 |

33

Junior Year

Sem. Hrs

| | |
|----------------------------------------------|---|
| BCH 4033, 4034 Biochemistry I, II | 6 |
| BCH 4033L, 4034L Biochemistry I, II Lab | 2 |
| CHM 4400, 4401 Phys. Chem/Life Science I, II | 6 |
| CHM 3610 Intermediate Inorganic Chemistry | 3 |
| CHM 4013L Phys. Char./Biomolecules | 2 |
| Approved Biology Electives | 4 |
| CHM 3905, 3906 Junior Special Topics I, II | 2 |

25

Senior Year

Sem. Hrs.

| | |
|--------------------------------------|---|
| CHM 4130 Instrumental Analysis w/Lab | 4 |
| CHM 4930 Chemistry Seminar | 1 |
| CHM 3120 Analytical Chemistry w/Lab | 4 |
| AMH 2091 African American History | 3 |
| Approved Social Science Elective | 3 |
| Approved Humanities Elective | 3 |
| BCH 4042 Proteins | 3 |
| BCH 4044 Nucleic Acids | 3 |
| Approved Computer Science Elective | 3 |

27

Total Semester Hours120

Course Descriptions

BCH 4042 Proteins (3) Prereq: CHM 3120 and BSC 1011. A detailed study of the structure, classification, and kinetics of enzymes; molecular mechanism of enzyme action; and medical and industrial application of enzymes. Laboratory involves isolation, purification, and kinetic studies of enzymes.

BCH 4033 Biochemistry I (3) Prereq: CHM 2211. Chemistry of Biomolecules: proteins, carbohydrates, and lipids. A basic study of membranes, enzymes, enzyme kinetics, vitamins, intermediary metabolism, and bioenergetics.

BCH 4033L Biochemistry I Lab (1) Introduction to biochemical techniques. Experiments include pH determination, buffer preparation, organelle separation, protein quantitation, chromatography, and electrophoresis.

BCH 4034 Biochemistry II (3) Prereq: BCH 4033. A brief study of radioisotopes, photosynthesis, and molecular transmission of genetic information. The study includes biochemistry of nucleic acids, replication, transcription, processing, and translation; protein synthesis; immunochemistry; and genetic engineering.

BCH 4034L Biochemistry II Lab (1) Involves handling bacterial cultures, isolation of plasmid DNA, effect of methylation on restriction analysis, restriction mapping, bacterial transformation, bacterial recombination and PCR.

BCH 4044 Nucleic Acids (3) A basic study of nucleic acids; Composition, structure, properties; replication, repair and recombination of DNA; Regulation of gene expression and gene therapy.

CHM 1000 Chemistry Orientation (1) Prereq: None. This course will provide you with an overview of the field of chemistry, with an emphasis on professional development, career options, graduate/professional school opportunities and presentation skills.

CHM 1020 Fundamentals of Chemistry (3) Prereq: For students not prepared for CHM 1045 as determined by departmental qualifying exam. 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 1030 Introductory Chemistry for Non-Science Majors (3) Prereq: Passing grade on departmental examination. 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) 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 1030 with passing grade. 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 1015 with passing grade or passing grade on departmental qualifying exam. 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) Coreq: 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. 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) Coreq: CHM 1046. Laboratory course to accompany CHM 1046. 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) Catalog Data: 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) Catalog Data: 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 with passing grade. 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 2210L with passing grade. A continuation of CHM 3210L with emphasis on aromatic syntheses and spectroscopic identification of compounds by IR, NMR, polarimetry, and refractometry; requires written laboratory reports.

CHM 2903* Special Topics I Catalog Data: Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies. (Sophomore)

CHM 2904* Special Topics II Catalog Data: Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies. (Sophomore)

CHM 3120 Quantitative Analysis (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 Quantitative Analysis Laboratory (2) Prereq: CHM 1046 with a passing grade. Titrimetric, gravimetric, photometric, and potentiometric analyses. Emphasis is placed on accuracy and precision in carrying out experimental procedures.

CHM 3121 Advanced Analytical Chemistry (3) Prereq: CHM 2211 with a passing grade. A development of topics covered in CHM 3120 followed by an introduction to electroanalytical methods, mass spectrometry, analytical separation methods, and thermal analysis techniques.

CHM 3121L Advanced Analytical Chemistry Laboratory (1) Prereq: CHM 2211L and CHM 3120 with passing grade. Advanced titrimetric, gravimetric, photometric, and potentiometric analyses of ores and pharmaceutical samples. Introduction to voltammetric and chromatographic analysis methods.

CHM 3905* Special Topics I Catalog Data: Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies. (Junior)

CHM 3906* Special Topics II Catalog Data: Structured activities designed to develop strong personal skills, technical knowledge, enhance problem-solving, professional skills related to chemistry, critical thinking, and test-taking strategies. (Junior)

CHM 4013L Physical Characterization of Biomolecules (2) Introduction to the methods used to examine the physical basis of biomolecules and acquaint students with the instruments used studies.

CHM 4130 Instrumental Analysis (3) Prereq: CHM 3120, CHM 3121 and PHY 2048 or equivalent with passing grades. 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 3121. Experiments designed to familiarize student 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 4410-4411 and 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 4230 Qualitative Organic Analysis (4) Prereq: CHM 4220, CHM 4130 and CHM 4411 with a passing grade. Use of chemical and instrumental methods of analysis to identify organic compounds both as pure substances and as mixtures. Chemical techniques involve the use of reagents to detect various fundamental groups. Instrumental methods include NMR, IR, UV, GLC, and HPLC.

CHM 4400 Physical Chemistry for Life Science I (3) 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) Introduction to quantum mechanics, spectroscopy and kinetics, and their importance in understanding biomolecular structure and function.

CHM 4410 Physical Chemistry (3) Prereq: MAC 2312 and PHY 2048 or PHY 2053 with passing grade. Quantitative, theoretical approach to basic physicochemical problems with special emphasis on solids, liquids, gases, chemical thermodynamics, equilibria, bioenergetics, solutions, spectroscopy, and kinetics.

CHM 4410L Physical Chemistry I Laboratory (1) Prereq: MAC 2312 and PHY 2048 and PHY 2053 with passing grade. 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 4422 Advanced Physical Chemistry Prereq: CHM 4411 and 4411L with passing grades. Kinetics, quantum mechanics, and statistical mechanics are covered on an advanced undergraduate level.

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 4501 Biophysical Chemistry (3) Prereq: MAC 3313 and PHY 3053 with grade of "C" or above. Quantitative, Physicochemical approach to problems in physical chemistry with special emphasis on Biological Systems.

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 4905 Directed Individual Study (1-4) Prereq: Consent of the department. Each student will pursue a systematic investigation of a topic

or project of his/her interest under the supervision of a faculty member. A written report is required at the end of the investigation or study.

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.

DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES

The Department of Computer and Information Sciences offers two Bachelor of Science degrees and a minor in Computer Information Sciences (CIS). 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. Students are encouraged to participate in internships and cooperative education experiences. Finally, students may select elective courses which, in conjunction with required courses, prepare them for graduate study in CIS related fields. A brief description of each Bachelor of Science degree program follows.

Computer Information Systems Major (Business Option): This major is designed for students who plan to apply their computing knowledge in business environments as applications programmers and systems analysts. This major is also designed for students who plan to seek advanced degrees in business administration, management, or management information systems.

Computer Information Science Major (Science Option): 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.

The remainder of this section provides an overview of the CIS core curriculum, the detailed curriculum for each Bachelor of Science degree, and a listing of CIS major elective courses. It also provides descriptions of possible minors; the curriculum for the CIS minor; and, finally, descriptions of all courses taught by the CIS Department.

Faculty

Professors: Harmon, Marion

Associate Professors: Allen, Clement; Evans, Deidre; Granville, Bobby; Jones, Edward; Riggs, Ken

Assistant Professors: Black, Jason; Chi, Hongmei; Prasad, Bhanu

Instructors: Chatmon, Christy; Nowicki, Christian; Robinson, Thomas

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 this semester with no refund of tuition or fees.

Computer Information Systems Curriculum

| Freshman Year | Sem. Hrs. |
|-------------------------------------------------------------------|-----------|
| AMH 2020 U.S. History - 1865 to Present | 3 |
| ENC 1101 Freshman Communication Skills I (or ENC 1121) | 3 |
| PSC 1121 Physical Science w/ Lab | 4 |
| MAC 2311 Calculus I | 4 |
| <hr style="width: 100%;"/> | |
| AFA 3104 The Afro-American Experience | 3 |
| ENC 1102 Freshman Communication Skills II (or ENC 1122) | 3 |

COP 3014 Fundamentals of Programming3
 COP 3014L Fundamentals of Programming Lab1
 CGS 2120 Introduction to Micro Applications w/Programming3
General Elective3
 16

Sophomore Year

ECO 2013 Principles of Economics I3
 COT 3100 Discrete Structures I3
 SPC 2600 Public Speaking3
 Humanities Elective3
General Elective3
 15

BSC 1005 Biological Science with Lab4
 CDA 3101 Computer Concepts and Organization3
 COP 3530 Program, File and Data Structures3
 ECO 2023 Principles of Economics II3
 *Humanities Elective (Upper)3
16

Junior Year

ACG 2021 Financial Accounting Principles3
 CIS 3040 Information Systems in Organizations3
 OST 3337 Business Report Writing3
MAN 3021 Principles of Management3
 12

ACG 2071 Managerial Accounting Principles3
 COP 3710 Database Management Systems3
 COP3610 Operating Systems3
 MAR 3023 Principles of Marketing3
General Electives3
 15

Summer Term

*General Electives (Internship recommended)6

Senior Year

CIS 4301 Information Systems Design and Development3
 COP 3060 Concepts in Advanced Application Development3
 STA 2023 Intro. to Probability and Statistics3
 CIS 3920 Professional Development III1
*Major Elective3
 13

CIS 4910 Information Systems Development Project3
 CDA 4503 Data Communication and Organizational Networks3
 *General Electives3
*Major Electives6
 12

Total Semester Hours120

*Approved upper level electives.

Computer Information Science Curriculum

Freshman Year

Sem. Hrs.

BSC 1005 Biological Science w/ Lab4
 ENC 1101 Freshman Communication Skills I (or ENC 1121)3

COP 3014 Fundamentals of Programming3
 COP 3014L Fundamentals of Programming Lab1
 SPC 2600 Public Speaking3
MAC 2311 Calculus I4
 17

AMH 3572 Afro-American History Since 18653
 ENC 1102 Freshman Communication Skills II (or ENC 1122)3
 COP 3014 Fundamentals of Programming3
 COP 3014L Fundamentals of Programming Lab1
 CIS 1920 Professional Development I1
MAC 2312 Calculus II4
 15

Sophomore Year

ECO 2013 Principles of Economics I3
 COT 3100 Discrete Structures I3
 MAC 3313 Calculus III5
 Humanities Elective3
14

COP 3530 Program, File and Data Structures3
 COT 3101 Discrete Structures II3
 ECO 2023 Principles of Economics II3
 Humanities Elective (upper level)3
*General Elective3
 15

Junior Year

CDA 3101 Computer Concepts and Organization3
 CIS 3040 Information Systems in Organizations3
 COT 4210 Foundations of Computer Science3
 MAD 3401 Numerical Analysis3
 PHY 2048 General Physics I4
PHY 2048 General Physics I Lab1
 17

CDA 4102 Computer Architecture3
 CDA 4503 Data Communication and Organizational Networks3
 COP 3710 Database Management System3
 OST 3337 Business Report Writing3
 PHY 2049 General Physics II4
PHY 2049 General Physics II Lab1
 17

Senior Year

COP 3060 Concepts in Advance Application Development3
 CIS 3920 Professional Development III1
 CIS 4301 Information Systems Design and Development3
 COP 4020 Programming Language3
*Major Elective3
 13

CIS 4910 Information Systems Development Project3
 COP 3610 Operating Systems3
 STA 2023 Introduction to Probability and Statistics3
*Major Elective3
 12

Total Semester Hours120

* Approved Upper level electives

Approved Major Electives for Computer Information Systems Majors

The courses listed below will be credited toward the required 9 semester hours of upper level major electives in the Business Option.

| | |
|-----------------------------------------------|---|
| CAP 4600 Artificial Intelligence | 3 |
| CAP 4680 Expert Systems | 3 |
| CEN 4072 Software Testing | 3 |
| CIS 4360 Introduction to Computer Security | 3 |
| CIS 4361 Applied Security | 3 |
| CIS 4362 Network Security | 3 |
| COP 4720 Advanced Database Management Systems | 3 |
| COP 3610 Operating Systems | 3 |
| COP 4020 Programming Languages | 3 |
| COP 4720 Advanced Database Management Systems | 3 |
| COT 3101 Discrete Structures II | 3 |
| COT 4210 Foundations of Computer Science | 3 |
| COT 4400 Design and Analysis of Algorithms | 3 |
| ISM 4400 Decision Support Systems | 3 |

Approved Major Electives for Computer Information Science Majors

The courses listed below will be credited toward the required 6 semester hours of upper level major electives in the science option.

| | |
|-----------------------------------------------|---|
| CAP 4600 Artificial Intelligence | 3 |
| CAP 4680 Expert Systems | 3 |
| CEN 4072 Software Testing | 3 |
| CIS 4360 Introduction to Computer Security | 3 |
| CIS 4361 Applied Security | 3 |
| CIS 4362 Network Security | 3 |
| COP 4720 Advanced Database Management Systems | 3 |
| COT 4400 Design and Analysis of Algorithms | 3 |
| ISM 4400 Decision Support Systems | 3 |

Internships and Cooperative Education

Internships and cooperative education assignments provide valuable "real world" work experiences. Professional Development courses (CIS 1920 and CIS 3920) help prepare students for these work experiences. Students gain credit for internships by enrolling in CIS 4942 and cooperative education by enrolling in 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 internship 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 for CIS Majors

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 Business Option may minor in Health Information Management. Students in the Science Option may minor in Mathematics by taking 18 hours of mathematics courses at the 3000 and 4000 level; a minor in Physics is also possible with this option. Students may also minor in Computer Education. This minor involves an additional twenty-one 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.

Requirements for a Minor in CIS

Pursuit of a minor in Computer Information Sciences requires the approval of the department chair and completion of the following courses:

| | |
|-------------------------------------------------------|---|
| COT 3100 Discrete Structures I | 3 |
| COP 3014 Fundamentals of Programming | 3 |
| COP 3014L Fundamentals of Programming Lab | 1 |
| COP 3530 Program, File and Data Structures | 3 |
| CIS 3040 Information Systems in Organizations | 3 |
| COP 3710 Database Management Systems | 3 |
| COP 3060 Concepts in Advanced Application Development | 3 |
| CIS 4301 Information Systems Design and Development | 3 |

Course Descriptions

Computer Applications

CAP 4600 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.

CAP 4680 Expert Systems (3) Prereq: COP 3710. Logic models, knowledge representation, developmental tools, and knowledge requisition.

Computer Design and Architecture

CDA 3101 Computer Concepts and Organization (3) Prereq: COT 3100, COP 3014 and COP 3014L. 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 3101. Instruction sets, CPU design, arithmetic algorithms, I/O communication techniques, memory hierarchy, memory management, RISC architectures, pipeline and vector processing.

CDA 4503 Data Communications and Organizational Networks (3) Prereq: COP 3530 and CDA 3101. Communication systems components, networks, LANs, common carrier services, network architectures, and distributed information systems.

Computer Engineering

CEN 4072 Software Testing (3) Prereq: COP 3530. The purpose of this course is to build the skills necessary to perform software testing at the function, class and application level. Students will be taught concepts of black-box and white-box testing, and will apply these concepts to small programs and components. Students will also be taught evaluative techniques such as coverage and mutation testing.

Computer General Studies

CGS 1160 Introduction to Microcomputer Applications (3) Prereq: MAC 1104. Survey of the field of computing. Discusses historical development of hardware and software. Experience using selected microcomputer applications.

CGS 2120 Introduction to Microcomputer Applications with Programming (3) Prereq: MAC 1104 and CIS major. Survey of the field of computing. Discusses historical development of hardware and software. Selected microcomputer applications explored. Introduction to programming in a high-level language.

CGS 3034 computer Technology and Social Issues (3) Prereq: CGS 1061. Study of social behavior enabled by technology. Examples include use of email, text messaging, and social websites. This course explores the benefits and pitfalls of social computing and identifies opportunities to exploit social computing in the workplace, microcomputer applications explored.

CGS 3066 Web Programming and Design (3) Prereq: CGS 1061. Learn how to create your own web pages. Introduction to basic HTML. Introduction to free tools for creating web pages.

Computer Information Systems

CIS 1920 Professional Development I (1), 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 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 4942 Information Systems Internship (1-12) Prereq: CIS 1920 or CIS 3920. Structured work assignment for CIS majors in an information systems or systems software development unit of a corporation or governmental agency. Requires seminar participation, reports, and evaluations.

CIS 4949 Cooperative Education Assignment (1-12). Structured work assignment for 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 3530. 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 3920 Professional Development III (1) Prereq: CIS 1920. Structured activities and work-shops designed to assist junior and senior CIS majors in enhancing knowledge, skills, and etiquette re-quired for success as computer information systems professions and to facilitate their entry into industry and government or graduate school.

CIS 4301 Information Systems Design and Development (3) Prereq: CIS 3040 and COP 3710. Develop-ment life cycle. Management and planning of systems development projects. Emphasis on information requirements analysis, logical specification, logical design, and detailed design. Case studies are util-ized. Should be taken in semester just prior to taking CIS 4910.

CIS 4360 Introduction to Computer Security (3). The major issues and threats in computer security are introduced. Privacy and integrity of data, together with the availability of computer resources need to be guaranteed. Topics include: physical security, communication security, information flow control, database security, operating system security, and computer viruses.

CIS 4361 Applied Security (3). This course will introduce the student to issues of information security. We will address the fundamental theories of security policy, vulnerability and protection. The material will relate to current issues that affect day to day computing.

CIS 4362 Network Security (3). This course will address issues of network security from authentication to non-repudiation. Fundamental theories of network security including public and private key cryptographic techniques. Topics include network defenses such as firewalls and intrusion detection systems, Public Key Infrastructures, and other security enabling technologies.

CIS 4910 Information Systems Development Project (3) Prereq: CIS 4301 and COP 3060. The capstone of the CIS program. A team project requiring development or enhancement of a computer system usually designed in CIS 4301.

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.

Computer Programming

COP 3014 Fundamentals of Programming (3) Prereq: MAC 2311. An introduction to computer programming. Utilizes 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 3014L Fundamentals of Programming Lab (1) Prereq: MAC 2311. Introduction to the operating system and programming environment required to develop programs in the language utilized in COP 3014. Requires completion of lab assignments designed to develop programming

and debugging skills.

COP 3530 Program, File, and Data Structures (3) Prereq: COP 3014 and COP 3014L. 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 2120 COBOL Programming (3). Analysis of business applications; files, records, fields, and databases; structured program development in COBOL; control breaks; and batch processing.

COP 2221 C Programming (3) Prereq: 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 3060 Concepts in Advanced Application Development (3) Prereq: COP 3530. 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 3300 Statistical Computation and Analysis (3) Prereq: CGS 1061 and STA 2023. Introduction to statistical software packages and application to problems in social science, hypothesis testing, etc.

COP 3610 Operating Systems (3) Prereq: COP 3530 and CDA 3101. Operating systems con-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 3530. Database concepts and en-vironment, database development process, data modeling (entity-relationship, object-oriented, and rela-tional) and logical database design, and SQL.

COP 4020 Programming Languages (3) Prereq: COP 3530 and CDA 3101. Central concepts of programming languages involving paradigms, syntax, semantics, pragmatics, and implementation and the application of these concepts to a variety of languages.

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.

Computer Theory

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 proofs, 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 3100 and COP 3530. Theoretical foundations of computer science including regular expressions; regular, context-free, and context sen-sitive grammars; finite and pushdown automata; Turing machines; and unsolvability.

COT 4400 Design and Analysis of Algorithms (3) Prereq: COT 3101 and COP 3530. Problem solving strategies, principles of algorithm design, metrics for evaluating designs, space and time com-plexity, 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.

DEPARTMENT OF ECONOMICS

The primary objective of the Department of Economics 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.

Faculty

Professors: Daniels, Rudolph; Oguledo, Iwuagwu V.

Assistant Professor: Johnson, Nathaniel; Okoye, Ifeakandu; Williams, DeEdgra

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 the Economics Department Office, Room 427, Tucker Hall).

Bachelor of Arts in Economics

| Freshman Year | Sem. Hrs. |
|-------------------------------------------------------------------------------------------------|-----------|
| ENC 1101, 1102 Freshmen Communicative Skills I, II or ENC 1121, 1122 Honors | .6 |
| MAC 1105 or 1114 or MGF 1106 or 1107 Mathematics | .3 |
| MAC 1147 Pre-Calculus | .4 |
| 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 | .4 |
| HUM 2211, 2230 Historical Survey I, II (or other approved "Topical Humanities" courses)** | .6 |
| SPC 1050 or SPC 2600 Foundations of Speech or Public Speaking | .3 |
| | 30 |

Sophomore Year

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 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 |
| MAC 2311 Calculus I | .4 |
| 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-Honors (or other approved computer course) | .3 |
| ECO 3921 Professional Development | .2 |
| | 30 |

Junior Year

| | |
|-----------------------------------------------|----|
| 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 |
| | 30 |

Senior Year

| | |
|-----------------------------------------------|------------|
| 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 |
| | 30 |
| Total Semester Hours | 120 |

All classes other than Natural Sciences 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 Must Be At 3000 Level or Higher.
- *3. ECO 3101 and ECO 3203 must be completed prior to taking ECO 4704, ECP 4703 and ECO 4713.
- *4. STA 2023 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 Department of Visual Arts, Humanities and Theater, Room 413 Tucker Hall.

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 BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES).

Bachelor of Science in Economics

| 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 | .4 |
| HUM 2211, 2230 Historical Survey I, II (or other approved "Topical Humanities" courses)** | .6 |
| SPC 1050 or SPC 2600 Foundation of Speech or Public Speaking | .3 |
| | 29 |

Sophomore Year

ECO 2013, 2023 Principles of Economics I and II * 16
 AMH 2010 or 2020 American History3
 AMH 2091 Introduction to African American History or
 AFA 3104 African-American Experience3
 MAC 2311 Calculus I4
 SYG 2000 or SYG 3010 Introduction to Sociology or Social Problems.
 Social Science Elective (or one non-history course from approved Social
 Science list) 3
 CGS 1061, or CGS 2120, or CGS 2162, Micro-Computer Applications,
 Micro-Computers w/Programming, Micro-Computers w/Programming-
 Honors (or other approved computer course) 3
 STA 2023 Introduction to Probability and Statistics I or QMB 3600 ...3
 ECO 3921 Professional Development2
 27

Junior Year

ECO 3101, 3203 Microeconomics, Macroeconomics6
 ECO 4223 Money and Banking3
 ECO 4303 History Of Economic Thought3
 ACG 2021 Financial Accounting Prin. or ACG 2022 Financial
 Accounting3
 ACG 2071 Managerial Accounting Prin. or ACG 3301 Managerial
 Accounting3
 ECO 3421 Econometrics *23
 Minor Electives *56
 ECO 4504 Public Finance.....3
 ENC 3320 Advanced Composition3
 33

Senior Year

ECO 4704 International Trade *33
 ECP 4403 Economics of Industrial Organization3
 MAC 2312 Calculus II4
 Minor Electives *512
 ECO 4401 Mathematical Economics *43
 ECS 4013 Economics of Less Developed Countries3
 ECO 4713 International Finance *33
 31

Total Semester Hours120

All classes other than Natural Sciences 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.

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PLIANCE WILL RESULT IN BEING ADMINISTRATIVELY WITHDRAWN FROM CLASS(ES).

Bachelor of Science in Economics: Minor Business

Freshman Year Sem. Hrs.
 ENC 1101, 1102 Freshman Communicative Skills I, II, or
 ENC 1121, 1122 Honors6
 MAC 1105, 1114 or 1147 or MGF 1106 or 1107 Mathematics6
 BSC 1005 Biological Science and BSC 1005 Lab or ISC 1006 or ISC 1007
 Wide World Science I or II4
 PSC 1121, AAST 1002 or PHY 3464 Physical Science, Astronomy or
 Physical Basis of Music4
 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
 29

Sophomore Year

ECO 2013, 2023 Principles of Economics I and II * 16
 AMH 2010 or 2020 American History3
 AMH 2091 Introduction to African American History or
 AFA 3104 African-American Experience3
 MAC 2311 Calculus I4
 STA 2023 Introduction to Probability and Statistics I
 or QMB 36003
 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 or
 ACG 2022 Financial Accounting3
 ACG 2071 Managerial Accounting Principles or
 ACG 3301 Managerial Accounting3
 ECO 3921 Professional Development2
 30

Junior Year

ECO 3101, 3203 Microeconomics, Macroeconomics6
 ECO 4223 Money and Banking3
 ECO 4303 History of Economic Thought3
 ECO 3932 Economics of Managerial Finance or FIN 3403 *23
 CGS 1061, or CGS 2120, or CGS 2162 Micro-Computer Applications,
 Micro-Computers w/Programming, or Micro-Computers w/Programming-
 Honors (or other approved computer course)3
 ECP 3203 Labor Economics3
 ECO 4504 Public Finance3
 ECP 4143 Black Economic Development3
 ECO 4943 Internship Economics4
 31

Senior Year

ECO 4704 International Trade *33
 ECP 4703 Managerial Economics *33
 MAR 3023 Principles of Marketing3
 BUL 4130 Legal Environment of Business3
 ECO 3421 Econometrics *43
 ECO 4713 International Finance *33
 ECO 4401 Mathematical Economics *53
 ECP 4403 Economics of Industrial Organization3

| | |
|----------------------------------------------------------|------------|
| ECS 4013 Economics of Less Developed Countries | 3 |
| ECO 4253 Monetary and Fiscal Policy *2 | 3 |
| | 30 |
| Total Semester Hours | 120 |

All classes other than Natural Sciences 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 and ECO 2013 and ECO 2023 must be completed prior to taking FIN 3403 or 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 Department of Visual Arts, Humanities and Theater, Room 413 Tucker Hall.

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Course Descriptions

ECO 2013 Principles of Economics (3) Prereq: 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) Prereq: 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) Prereq: ECO 2023. Microeconomic framework of economy; supply, demand, price, output, resource allocation, and policy issue.

ECO 3203 Macroeconomic Theory (3) Prereq: ECO 2013. Macroeconomic framework of economy; prices, output, employment and public policy.

ECO 3421 Introduction to Econometrics (3) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: ECO 2013, ECO 2023. A study of the origin and development of economic theories and ideas.

ECO 4401 Mathematical Economics (3) Prereq: 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) Prereq: ECO 2013, ECO 2023, ECO 3203, ECO 3101. Study of trade theory, commercial policy and international trade institutions.

ECO 4713 International Finance (3) Prereq: 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 is emphasized.

ECO 4905 Directed Individual Study (1-6) Prereq: Permission of instructor and department chairperson. Independent research in economics by senior students with appropriate supervision.

ECO 4910 Senior Thesis (3) Prereq: ECO 2023, ECO 3101, ECO 3421, STA 2023. Research oriented course designed to teach elementary research methods in Economics. Data presentation and analysis is emphasized.

ECO 4921 Senior Seminar Professional Development I (1) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: ECO 4213 or permission of the instructor. An in-depth study of labor law and legislation and its effect on collective bargaining.

ECP 4231 Labor Law II Prereq: ECO 4213 and ECP 4230. (3) A study of labor law and legislation affecting public sector bargaining.

ECP 4232 Collective Bargaining (4) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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) Prereq: 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.

DEPARTMENT OF ENGLISH

The Department of English offers programs leading to the bachelor of arts degree in English or English Education. It also offers minor concentrations in literature and writing, as well as general education courses in speech.

Faculty

Professors Emeriti: Blake, Johnie C.; Preu, Dana

Professors: Campell, Rick; Davis, Mary K.; Dawson, Emma W.; Evans, Adeline; Hemmingway, Beulah S.; Irvine, Carolyn; Kemp, Yakini; Rauls, Margie; Speisman, Barbara; Williams, Willie T.

Associate Professors: Boston, Genyne; Cohen, DeSilver C.; Houston, Joe Ann; Sawh, Ruth R.; Stallworth, Frances H.; Thomas, Leesther; Yon, Veronica

Assistant Professors: King-Pedroso, Natalie; Spencer, Maor, Faye; Taha, Taha A.; West-White, Clarissa

Instructors: Abrams, Melanie; Brown, Ann G.; Bryant, Ceron; Riley, Nandi; Surrency, Jeneen; White, Melanie; Williams, Alexander; Youmans, Patricia

Admission Requirements

A student who wishes to declare English as a major will be accepted if he or she has earned a minimum "B" average in the freshman communicative skills courses, ENC 1101 and ENC 1102 and a 2.0 cumulative GPA. A prospective English major who does not have a minimum "B" average in freshman communicative skills is required to petition for admission to the major by writing an entrance essay for the departmental admissions' committee. Based upon that body's recommendation, the student may or may not be admitted. The committee also reserves the right to recommend that a student register and pass ENC 2300, Improving Writing with a minimum grade of "B" in the course. Moreover, all English majors are required to take LIT 2110 as an elective and, in accordance with Rule 6C3-4.09, they must earn a minimum grade of "C". An English major is required to become an active member 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 any course with the X101 or X102 prefix as prerequisites for enrolling in any course offered by the department at the 2000 level or above. Students must be classified as juniors (60 semester hours) as a prerequisite for enrolling in courses at the 3000 or 4000 levels.

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 2.50. In addition, students must complete the following courses.

Supporting courses are history (EUH 3501, AMH 2091); French or Spanish (12 hrs.); philosophy (PHI 2010); psychology (PSY 2012); anthropology (ANT 2000); speech (SPC 1050); and computer information systems (CGS 1160, EME 4400).

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.

Requirements for English Majors

HUM 2213 and 2230 are no longer needed to satisfy the university humanities requirement.

Course Requirements for English Education Major

To qualify for certification to teach in the high schools in the State of Florida, a student majoring in English must have accumulated a minimum of sixty (60) semester hours and must be formally admitted to the teacher education program before enrolling in the course sequence. Each student is expected to enroll in certain professional education courses - in the following sequences - as recommended by the program in Secondary Education Foundations:

- EDF 1005 Introduction to Education
- EDG 3004 Orientation to Teaching
- DEP 3004 Human Growth and Development
- EDF 3430 Measurement and Evaluation
- ESE 3341 Theory and Practice in the Secondary School
- RED 3333 Reading in the Secondary School
- EME 2040 Introduction to Education Technology
- EDG 2701 Teaching in Diverse Populations
- ESE 4930 Professional Seminar
- LAE 4360 Teaching in Middle/High School
- TSL 3371 ESOL Theory/Practice
- TSL 4345 Methods for Teaching ESOL
- ESE 4943 Student Teaching

The Minor Requirements for English Majors

The English major who completes requirements for the B.A. degree with certification will have enough hours for a minor in education. However, a student who does not seek teacher certification must select a minor field of study in an area of concentration, such as humanities, drama, foreign language, history, art, music, philosophy, journalism, or another area approved by the advisor and the chairperson.

Minor in Literature

Prerequisites - LIT 2110 or 2120; ENC 2300 is recommended if the grades earned in freshman communication skills courses are below "B". Additionally, the following twenty-one (21) hours are required:

| | |
|----------------------------------------------|-----------|
| ENL 3013 English Literature | 3 |
| AML 2010 or 3122 American Literature | 3 |
| LIT 4083 Contemporary Literature | 3 |
| LIN 4680 Advanced Grammar | 3 |
| AML 4604 Afro-American Legacy or | |
| AML 4610 Afro-American Novel or | |
| AML 4934 Seminar in Afro American Literature | 3 |
| ENL 4331 or 4332 Shakespeare I or II | 3 |
| ENC 3320 Advanced Composition | 3 |
| | 21 |

Minor in Writing

Prerequisites-LIT 2110 or 2120; ENC 2300 is recommended if the grades earned in freshman communicative skills courses are below "B". Additionally, the following twenty-one (21) hours are required:

| | |
|--------------------------------------|-----------|
| | Sem. Hrs. |
| ENL 3013 or 3033 English Literature | 3 |
| AML 2010 or 3122 American Literature | 3 |

| | |
|----------------------------------------------|----|
| LIN 4680 Advanced Grammar | 3 |
| ENC 3320 Advanced Composition | 3 |
| LIN 4060 History of the English Language | 3 |
| ENC 3243 Technical Writing | 3 |
| AML 4604 Afro-American Legacy or | |
| AML 4610 Afro-American Novel or | |
| AML 4934 Seminar in Afro American Literature | 3 |
| | 21 |

Assistance for CLEP and CLASP 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, such as ENC 3320, Advanced Composition.

Moreover, for native and foreign speakers, the department provides intensive classes (such as ENC 1090) which are designed to assist students in enhancing their writing experiences and preparing to take the essay and language skills sections of the College Level Academic Skills Program (CLASP) test.

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 Education

| | |
|----------------------------------------------------------------------|-----------|
| Freshman Year | Sem. Hrs. |
| ENC 1101, 1102 Freshman Communicative Skills I, II | 6 |
| MAC 1105, MGF 1106, Math for Liberal Arts Majors I and II | 4 |
| FRE/SPN 1100, 1101 Elementary French/Spanish I, II | 4 |
| FRE/SPN 1120, 1121 French/Spanish I Lab | 4 |
| PSC 1121 Physical Science/Lab (or any course with CHM or BCH prefix) | 4 |
| BSC 1005C Biological Science | 3 |
| SPC 1050 Foundations of Speech or SPC 2600 Public Speaking | 3 |
| ANT 2000 Introduction to Anthropology or | |
| SYG 2000 Introduction to Sociology | 3 |
| EDF 1005 Introduction to Education | 3 |
| | 36 |

Sophomore Year

| | |
|-------------------------------------------------|----|
| AML 2010 American Literature I | 3 |
| PHI 2010 Introduction to Philosophy | 3 |
| FRE/SPN 2220/2221 Intermediate French/Spanish I | 4 |
| DEP 3004 Human Growth and Development | 3 |
| ENC 3320 Advanced Composition | 3 |
| LIT 2110 Introduction to Literature I | 3 |
| AMH 2091 African American History or | |
| AFA 3104 The African American Experience | 3 |
| MTG 2206 College Geometry | 3 |
| EME 2040 Introduction to Educational Technology | 3 |
| EDG 2701 Teaching Diverse Populations | 3 |
| | 31 |

Junior Year

| | |
|---------------------------------------------------------------------------------------------|----|
| AML 3122 American Literature I | 3 |
| ENL 3013, 3034 English Literature I, II | 6 |
| AML 4604 or 4610 or 4934 Afro-American Novel/Legacy/ African American Literature Seminar | 3 |
| ENL 4331 or 4332 Shakespeare I or II | 3 |
| RED 3333 Reading in the Secondary School | 3 |
| ESE 4930 Instructional Seminar in Secondary Education | 3 |
| ESE 3341 Theory and Practice of Teaching in Secondary Schools | 3 |
| EDG 3004 Orientation to Teaching | 1 |
| ENG 3048 Theories and Techniques of Literature | 3 |
| | 28 |

Senior Year

| | |
|-------------------------------------------------|------------|
| LIN 4680 Advanced Grammar | 3 |
| LIN 4060 History of the English Language | 3 |
| LIT 3333 Multicultural Literature for Adoles. | 3 |
| EDF 3430 Measurement and Evaluation | 3 |
| LAE 4360 Teaching English in Middle/High School | 3 |
| ESE 4943 Student Teaching Secondary School | 6 |
| TSL 3371 ESOL Theory I Practice | 3 |
| TSL 4345 Methods for Teaching ESOL | 3 |
| | 27 |
| TOTAL HOURS: | 122 |

Bachelor of Arts Degree in English

| | |
|-------------------------------------------------------------------------|-----------|
| Freshman Year | Sem. Hrs. |
| ENC 1101, 1102 Freshman Communicative Skills I, II | 6 |
| MAC 1105, MAC 1106, Math for Liberal Arts Majors I and II | 6 |
| FRE/SPN 1100, 1101 Elementary French/Spanish I, II | 8 |
| PSC 1121 Physical Science/Lab (or any course with CHM or BCH prefix) | 4 |
| BSC 1005C Biological Science/Lab | 4 |
| SPC 1050 Foundations of Speech | 3 |
| | 31 |

Sophomore Year

| | |
|-----------------------------------------------------|----|
| Humanities Elective | 3 |
| FRE/SPN 2200 Intermediate French/Spanish I | 4 |
| THE 3000 Introduction to Theatre | 3 |
| ENC 3320 Advanced Composition | 3 |
| LIT 2110 Introduction to Literature I | 3 |
| PHI 2010 Introduction to Philosophy or Elective | 3 |
| CGS 1160 Introduction to Microcomputer Applications | 3 |
| PSY 2012 Introduction to Psychology or | |
| ANT 2000 Introduction to Anthropology or | |
| SYG Introduction to Sociology | 3 |
| AMH 2091 African American History | 3 |
| Elective | 3 |
| | 31 |

Junior Year

| | |
|---------------------------------------------------------------------------------|----|
| AML 2010, 3122 American Literature I, II | 6 |
| ENL 3013, 3033 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 Elective | 3 |
| ENG 3048 Theories and Techniques of Literary Studies | 3 |
| Minor | 6 |
| | 30 |

Senior Year

| | |
|--------------------------------------------------------------------------|------------|
| LIT 4083 or AML 4101 Contemporary Literature/ American Novel | 3 |
| LIN 4060 History of the English Language | 3 |
| LIN 4680 Advanced Grammar | 3 |
| Electives (Student should consider minor or other literature courses) | 8 |
| Minor | 11 |
| | 28 |
| TOTAL HOURS: | 120 |

Course Descriptions

AML 2010, 3122 American Literature I, II (3,3) Prereq: ENC 3320 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 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 Afro-American Novel (3) Prereq: ENC 3320 The most significant black American novelists from William Wells Brown to Alice Walker.

AML 4934 Seminar in African American Literature (3) Prereq: ENC 3320 Current topics organized around selected writers or themes which

reflect the political and artistic values of Afro-American culture.

AML 4604/4605 Legacy of African American Literature (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 Afro-American Novel (3) Includes Charles Chesnutt, James Weldon, Jean Toomer, Zora Neale Hurston, Richard Wright, Ralph Ellison, James Baldwin, Toni Morrison, 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-naturalist 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.

AML 5935 Seminar in Afro-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 our 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 1090 CLAST Essay Writing (1) Special emphasis on syntax and semantics in order to assist students in passing the CLAST essay subtest.

ENC 1101, 1102 Freshman Communicative Skills I, II (3,3) Provides students with basic communicative skills, including dictionary and library usage and analysis and development of paragraphs, themes, research papers and business communications. 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 expository prose. For non-English majors and English majors who require additional training before taking ENC 3320.

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) Prereq: B average ENC 1101, 1102. Techniques of logical structure and critical evaluation of prose genre.

ENC 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 literary criticism from Dryden to T.S. Eliot.

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. Writers include Tennyson, Browning, Carlyle, Arnold, Huxley, Rossetti.

ENL 4311 Chaucer (3) Selections from The Canterbury Tales and Troilus and Criseyde.

ENL 4331, 4332 Shakespeare (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.

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 it relates 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 3333 Multicultural Literature for Adolescents (3) Fosters on 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 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 British and American literature since 1914 as well as literature from diverse ethnic cultures by Hispanic, Native American, Chinese, Puerto-Rican, Japanese, Chicano, and African-American.

LIT 4383 Women in Literature (3) An introduction to the study of women as adults, particularly in the 19th and 20th centuries.

LIT 5327 Folklore, Myth, Legend (3) A study of folk literature from classical times to the present.

SPC 1050 Foundation of Speech (3) Introduction to communicative processes as applied to various speech situations: speech models, intrapersonal and interpersonal communication, such as thinking, Laboratory activities are required.

SPC 2600 Public Speaking (An honors section is available) (3) Theory and practice in public speaking, emphasizing speeches of/information, persuasion, and special occasions; listening to and developing, organizing, and delivering speeches. Speech laboratory activities are required.

SPC 3051 Speech and Language Control (3) Designed to meet the speech and language needs of students in the areas of articulation, vocal control, standard American usage, and fluency. Speech laboratory activities are required.

SPC 4051 Phonetics: Pronunciations of American English (3) Instruction in the application of the International Phonetic Alphabets to Standard American English words and sentences, and to the major dialects of American English. Speech Laboratory activities are required.

DEPARTMENT OF FOREIGN LANGUAGES

The Department of Foreign Languages offers programs leading to the Bachelor of Arts degree in French and in Spanish. It also offers a minor concentration in French and in Spanish. Students completing the program find employment in the global economic marketplace. The programs also prepare students for graduate study and professional schools.

Faculty

Associate Professors: Diallo, Mary; McIntosh, Yvonne; Norman, James Earl and Trujillo, Evelyn

Assistant Professors: Ramos, Johanna

Lab Director: Cardwell, Juanita

Major Requirements:

A student pursuing the B.A. degree in French or in Spanish is required to complete thirty (30) semester hours of course work in French or in Spanish beyond the intermediate level (2200). Students enrolled in major or minor programs of study must maintain a minimum grade point average of 2.25.

Minor Requirements:

Students wishing to minor in French or in Spanish must complete a minimum of eighteen (18) hours above the 2200 level unless otherwise stipulated by their major department. A prospective minor is advised to consult the department chairman before enrolling in any upper level SPN/FRE 3000 or 4000 course.

Curriculum Guides

Bachelor of Arts Degree in French

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------------------------------|-----------|
| ENC 1101, 1102 Freshman Communicative Skills I, II | .6 |
| MAC 1105, MGF 1106 College Algebra/Liberal Arts Math | .6 |
| FRE 1120, 1121 Elementary French I, II or Honors French 1120/1121 Lab | .8 |
| PSC 1121 Physical Science/Lab (or AST 1002 or PHY Prefix) | .4 |
| BSC 1005 Biological Science/Lab | .4 |
| SLS 1101 Orientation | .0 |
| | 28 |

| Sophomore Year | Sem. Hrs. |
|---------------------------------------------------------------------------|-----------|
| Humanities electives | .6 |
| FRE 2220/2221 Intermediate French/Lab | .8 |
| ANT 2000 Introduction to Anthropology or SYG 2000 or PSY 2011 | .3 |
| AMH 2091 African American History or AFA 3104 African American Experience | .3 |
| CGS 1060 Computers for General Studies | .3 |
| Electives | .9 |
| | 29 |

| Junior Year | Sem. Hrs. |
|----------------------------------------|-----------|
| FRW 3100 Survey I | .3 |
| FRE 3350 Readings in French Literature | .3 |
| FRW 3750 African Literature I | .3 |
| FRW 3101 Survey II | .3 |

| | |
|----------------------------------------------------------|-----|
| FRE 3500 French Civilization or FRE 3440 Business French | .3 |
| FRE 3410 Advanced Conversation | .3 |
| FRW 3420 Medieval and Renaissance Literature | .3 |
| Electives | .12 |
| | 33 |

| Senior Year | Sem. Hrs. |
|---------------------------------------------------------------|-----------|
| FRW 3751 African Literature II | .3 |
| FRW 3433 Seventeenth and Eighteenth Century French Literature | .3 |
| FRW 4930 Special Studies in French | .3 |
| FRW 3460 Nineteenth Century | .3 |
| FRW 3480 Twentieth Century | .3 |
| FRE 3780 Phonetics | .3 |
| FRE 4400 French Conversation and Composition | .3 |
| Electives | .9 |
| | 30 |

Bachelor of Arts Degree in Spanish

| Freshman Year | Sem. Hrs. |
|-------------------------------------------------------------------------|-----------|
| ENC 1101, 1102 Freshman Communicative Skills I, II | .6 |
| MAC 1105, MGF 1106 College Algebra/Liberal Arts Math | .6 |
| SPN 1120, 1121 Elementary Spanish I, II or Honors Spanish 1120/1121 Lab | .8 |
| PSC 1121 Physical Science/Lab (or AST 1002 or PHY Prefix) | .4 |
| BSC 1005 Biological Science/Lab | .4 |
| SLS 1101 Orientation | .0 |
| | 28 |

| Sophomore Year | Sem. Hrs. |
|---------------------------------------------------------------------------|-----------|
| Humanities electives | .6 |
| SPN 2220/2221 Intermediate Spanish/Lab | .8 |
| SPN 2240 Advanced Spanish Conversation | .3 |
| ANT 2000 Introduction to Anthropology or SYG 2000 or PSY 2011 | .3 |
| AMH 2091 African American History or AFA 3104 African American Experience | .3 |
| CGS 1060 Computers for General Studies | .3 |
| Electives | .3 |
| | 29 |

| Junior Year | Sem. Hrs. |
|-------------------------------------------------------|-----------|
| SPN 3420 Advanced Spanish Grammar and Syntax | .3 |
| SPW 3100 Survey of Spanish Literature I | .3 |
| SPW 3130 Survey of Spanish American Literature I | .3 |
| SPN 3520 Span. Amer. Civ. And Culture | .3 |
| SPT 3509 Intro. to Translation: Practicum or Elective | .3 |
| SPT 3800 Intro. to Translation Theory or Elective | .3 |
| Electives | .12 |
| | 30 |

| Senior Year | Sem. Hrs. |
|---------------------------------------------------|-----------|
| SPW 3101 Survey of Spanish Literature II | .3 |
| SPW 3131 Survey of Spanish American Literature II | .3 |
| SPW 4310 Masterpieces of Hispanic Drama | .3 |
| SPW 4271 Masterpieces of Hispanic Fiction | .3 |

| | |
|-------------------------------------------------------------|---|
| SPW 4342 Masterpieces of Hispanic Poetry | 3 |
| SPW 4771 Black Themes in Afro-Hispanic Literature | 3 |
| SPW 4604 Cervantes | 3 |
| SPN 4840 History of the Spanish Language | 3 |
| SPN 4780 Linguistic Structure of Spanish Language | 3 |
| Electives | 6 |

33

Course Descriptions

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 1100 or equivalent. Introduction to 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 writing. Lecture/Laboratory.

FRE 2221 Intermediate French II (3,1) Prereq: FRE 2200 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 writing. Lecture/Laboratory.

FRE 3700 Introduction to Linguistics (3) Introductory study of general linguistics and the major branches of linguistic analysis in relation to the French language.

FRE 3350 Readings in French Literature (3) A study of selected French literature texts (en français facile) designed to introduce students to major French authors and build vocabulary and critical skills.

FRE 3500 French Civilization (3) Prereq: FRE 2201 or equivalent. A survey of French civilization. Authentic texts will be used to highlight aspects of French history, art, government, education, and media to promote cross-cultural understanding.

FRE 3410 Advanced Conversation (3) Prereq: FRE 3780 or approval of instructor. A continuation of French Conversation. The course is designed to perfect oral proficiency in French conversation and communication.

FRE 3420 Advanced French Grammar and Syntax (3). Prereq: FRE 2201 or equivalent. A thorough review of French grammar and syntax as well as initiating the student in writing complex structures in French.

FRE 3780 Phonetics (3) Prereq: FRE 2201 or equivalent. Study of phonetics as an aid to pronunciation. Emphasis is on phonetic transcription, correct pronunciation, and parosody.

FRE 4400 French Conversation and Composition (3) Prereq: FRE 2201 or equivalent. A systematic review of grammar, techniques of composition and style, and the development of correct and effective expression in French.

FRW 3100 Survey of French Literature I (3) Prereq: FRE 2201 or equivalent. Study of representative works and excerpts which reflect major trends in French literature from the Middle Ages to the 17th Century.

FRW 3101 Survey of French Literature II (3) Prereq: FRW 3100. Study of representative texts which reflect major trends in French literature from the 18th Century to the present.

FRW 3433 Seventeenth & Eighteenth Century French Literature (3) Study of representative literary texts which reflect Classicism as a literary movement as well as the Age of Enlightenment.

FRW 3460 Nineteenth Century French Literature (3) Study of the works of major authors including Lamartine, Hugo, Balzac, Zola, and Stendhal as representative of Romanticism, Realism, and Naturalism.

FRW 3480 Twentieth Century French Literature (3) Study of the works of major literary movements such as Surrealism, Existentialism, Theatre of the Absurd, and Nouveau Roman.

FRW 3750 African Literature (3) Introduction to francophone African literature and the socio-historical conditions favoring its early growth and

development through 1950.

FRW 3751 African Literature II (3) Francophone African Literature from the 1960's to the Present, including literary responses to societal issues.

FRW 4930 Special Studies in French (1-4) Specialized studies in the French language and/or literature. This includes panorama of literature, civilization and culture, composition and oral expression.

SPN 1120 Elementary Spanish I (3,1) Introduction to the study of the Spanish language and culture; basic grammar, listening, speaking, reading, and writing. Lecture/Laboratory.

SPN 1121 Elementary Spanish II (3,1) Prereq: SPN 1100 or equivalent. Continuation of the study of the Spanish language and culture; intermediate grammar and further development of basic skills. Lecture/Laboratory.

SPN 2220 Intermediate Spanish I (3,1) Prereq: SPN 1101 or equivalent. Continuation of the study of the Spanish language and culture; intermediate grammar and further development of basic skills. Lecture/Laboratory.

SPN 2221 Intermediate Spanish II (3,1) Prereq: SPN 2200 or equivalent. Continuation of the study of the Spanish language and culture; intermediate grammar and further development of basic skills. Lecture/Laboratory.

SPN 2240 Advanced Spanish Conversation (3) Prereq: SPN 2201, equivalent, or permission of instructor. Intensive practice in the spoken and written language on topics selected from literature, art, psychology, music, business, and the sciences.

SPN 3420 Advanced Spanish Grammar and Syntax (3) Prereq: SPN 2201 or equivalent. Advanced practice in the grammatical structure of the language, including and intensive review of syntax and usage.

SPN 3500 Spanish Civilization and Culture I (3) Prereq: SPN 2201, equivalent, or permission of instructor. A study of the history, geography, art, attitudes, and customs of the Spanish people from the Middle Ages to the Golden Century.

SPN 3520 Spanish American Civilization (3) Study of the history, geography, art, attitudes and customs of Spanish Americans from pre-Columbian civilization through the 20th Century.

SPN 3525 Spanish Civilization and Culture II (3) Prereq: SPN 2201, equivalent, or permission of the instructor. A continuation of SPN 3500. A study of the history, geography, art, attitudes, and customs of the Spanish people from the Golden Century to the Spanish Civil War.

SPN 4780 Linguistic Structure of the Spanish Language (3) Prereq: SPN 3420. A study of modern Spanish morphology and syntax and intensive practice in articulation.

SPN 4840 History of the Spanish Language (3) Prereq: SPN 3420. Study of the formation of internal and external forces contributing to the development of the language.

SPN 4905 Directed Individual Study (1-4) Prereq: Permission of instructor. Individually supervised reading and/or research on a topic or project agreed upon by student and supervisor. This course is intended for advanced students. Credit hours and research topic are to arranged prior to registration.

SPN 4930 Special Studies in Spanish (1-4) Specialized studies in Spanish language and/or literature. This includes: Panorama of Literature Civilization & Culture Composition & Oral Expression.

SPT 3800 Introduction to Translation (3) Prereq: Permission of the instructor. An intensive application of translation theory.

SPT 3890 Introduction to Translation: Practicum (3) Prereq: Permission of the instructor. An intensive application of translation theory.

SPW 3100 Survey of Spanish Literature I (3) Prereq: SPN 2201, equivalent, or permission of instructor. Spanish literature studied within the frame work of the arts and humanities from the beginning of Romance poetry through the Golden Age.

SPW 3101 Survey of Spanish Literature II (3) Prereq: SPN 2201, equivalent, or permission of instructor. A continuation of SPW 3100 from beginning of the Bourbon reign through contemporary movements.

SPW 3131 Survey of Spanish/American Literature II (3) Prereq: SPN 2201, equivalent, or permission of instructor. Spanish American literature from modernism through contemporary movements.

SPW 3130 Survey of Spanish/American Literature I (3) Prereq: SPN 2201, equivalent, or permission of instructor. A study of the literature of Spanish America from the pre-Columbian era to modernism.

SPW 4271 Masterpieces of Hispanic Fiction (3) Prereq: SPN 2240. Study of novels and short stories by Borges, Carpentier, Cortazar, Gallegos, Garcia Marquez, Quiroga, Vargas-Llosa, and Icaza.

SPW 4310 Masterpieces of Hispanic Drama (3) Prereq: SPN 2240. Works of outstanding Hispanic authors from the Golden Age to the present.

SPW 4342 Masterpieces of Hispanic Poetry (3) Prereq: SPN 3420. Study of outstanding Hispanic authors from the Golden Age to the present.

SPW 4362 Literature of the Conquest (3) Prereq: SPN 2240. Exploration of the idea of the New World from conquest to independence, as revealed in the prose and poetry written from the sixteenth through the eighteenth century.

SPW 4604 Cervantes (3) Prereq: SPN 3420. A study of the classic work, Don Quijote de la Mancha.

SPW 4771 Black Themes in Afro-Hispanic Literature (3) Prereq: SPN 3420. Study of the major works by Nicolas Guillen, Alejo Carpentier, Manuel Zapata Oliveilla, Nicomedes Santa Cruz, Quince Duncan, Adalberto Ortiz, and Nelson Estupinan-Bass.

DEPARTMENT OF HISTORY, POLITICAL SCIENCE, 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

Professors: Brown, Titus; Eidahl, Kyle; Inamete, Ufot; Jackson, Jr., David H.; Simmonds, Keith

Associate Professors: Cohen, Sylvester; Gaston, Juanita; Malik, Rashid; Paul, Gary; Wright, Larry L.

Professor Emeriti: Neyland, Leedell

HISTORY

The program in History is committed to the development of a versatile course of study that is 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 lan-

guage, 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. See your 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.

Bachelor of Arts in History

| Freshman Year | Sem. Hrs. |
|--------------------------------------------------------------|-----------|
| ENC 1101, 1102 Communication Skills I, II | .6 |
| MGF 1106 or MGF 1107; and MAC 1105 or MAD 2120 | .6 |
| HUM Elective Humanities Elective (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 or | |
| ANT 2000 Intro. to Anthropology | .3 |
| PSY 2012 Introduction to Psychology | .3 |
| AMH 2091 Introduction to African-American History or | |
| AFA 3104 African American Experience | .3 |
| | 31 |

Sophomore Year

| | |
|-------------------------------------------------------------|----|
| AMH 2020 U.S. History 1865-Present | .3 |
| CGS 1160 or CAP 3505 Computer Applications | .3 |
| BSC 1005 Biology w/Lab | .4 |
| PSC 1121 Intro. to Physical Science w/Lab or | |
| AST 1002 Astronomy w/Lab | .4 |
| 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 |
| | 29 |

Junior Year

| | |
|------------------------------------------------|----|
| Foreign Language (in a single language) | .8 |
| 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 Requirement | .9 |
| | 29 |

Senior Year

| | |
|-------------------------------------------------------------|----|
| AFH 4100 History of Africa from Origins to 1800 or AFH 4200 | .3 |
| POS 4703 Scopes & Methods | .3 |
| AMH 4202 20th Century America | .3 |
| AMH 4420 History of Florida | .3 |
| ASH 4300 Far East History or AFH 4200 | .3 |
| EUH Elective European History Elective | .3 |
| Foreign Language (in a single language) | .4 |

Minor Requirements9
31

Bachelor of Science in History

Freshman Year Sem. Hrs.
AMH 2010 U.S. History 1492 – 18653
AMH 2091 or AFA 3104 African American History3
ENC 1101, 1102 Communication Skills I, II6
WOH 1012 World History to 15003
HUM Elective Humanities elective (HUM, ARH, REL, PHI, or PHH) ..3
MGF 1106 or MGF 1107; MAC 1105 or MAD 21206
POS 1921 Introduction to Professional Development1
PSY 2012 Introduction to Psychology3
SYG 2000 or ANT 2000, Introduction to Sociology or Anthropology ..3
31

Sophomore Year

AMH 2020 U.S. History 1865-Present3
BSC 1005 Biology & Lab4
CGS 1160 or CAP 3505 Computer Applications3
GEA 2000 Geography (GEO or GEA Elective See Advisor)3
GEO 3421 Cultural Geography or GEA 36003
LIT 2110 Literature3
PHI 1100 or PHI 2101 Critical Thinking/Introduction to Logic3
PSC 1121 Introduction to Physical Science & Lab or
AST 1002 Astronomy & Lab4
WOH 1022 World History 1500 - Present3
29

Junior Year

AMH 3571 or AMH 3572 African American History3
ASH 4300 Far East History or AFH 42003
ECO 2013 & 2023 Principles of Economics, I, II6
ENC 2300 or 3320 Improved Writing3
HIS 3104 Nature of History3
HIS 3150 Historiography3
Minor Course Requirement9
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Senior Year

AFH 4100 History of Africa to 18003
POS 4703 Scopes & Methods3
AMH 4202 20th Century America3
AMH 4420 History of Florida3
EUH Elective European History Elective (3000-4000 Level)3
HIS 1921 Intro. to Professional Development (History)3
History Elective3
Minor Course Requirement9
30

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.

Bachelor of Science in African-American Studies

Freshman Year Sem. Hrs.
AMH 2010 U.S. History to 18653
AMH 2091 Intro. to African American History3
ENC 1101, 1102 Communication Skills I, II6
HUM Elective Humanities elective (HUM, ARH, REL, PHI, or PHH) ..3
MGF 1106 or MGF 1107; and MAC 1105 or MAD 21206
POS 1921 Introduction to Professional Development1
PSY 2012 Introduction to Psychology3
SYG 2000 Introduction to Sociology3
31

Sophomore Year

WOH 1022 History of Civilization3
BSC 1005 Biology Sciences & Lab4
CGS 1160 or CAP 3505 Computer Applications3
ECO 2013 Principles of Economics I3
ENC 2300 or 3320 Improved Writing3
GEA 2000 or GEO 3421 Geography3
GEA 3600 Geography of Africa3
POS 2041 American National Government3
PSC 1121 Introduction to Physical Science & Lab
or AST 1002 or PHY 34644
29

Junior Year

AMH 2020 U.S. History3
AFH 4100 History of Africa I3
AMH 3571 African American History to 18653
AMH 3572 African American History 1865-Present3
HIS 3150 Historiography or POS 4703 Scope & Methods3
LIT 4336 African American Novel3
PUP 3313 Blacks in the Political Process3
Minor Course Requirement9
30

Senior Year

AFA 4936 Seminar in African American Studies3
AFA or AMH Elective (3000-4000) African American Studies or
AMH elective6
AFH 4200 History of Africa II3
Minor Course requirement9

POS 4923 Advanced Professional development3
 SOP 3724 Psychology of Race & Prejudice3
 SYD 4730 Soc. of the Black Experience3
 30

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, 4) political science with a concentration in urban studies & economic development, and 5) political science with a concentration in international relations 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 and Minor – A major in political science consist 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 for political science except for the requirement of minor-ing in eighteen (18) hours of public administration instead of another academic field.

Other students wishing to minor in political science, public administration, pre-law, urban studies & 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.

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) . . . | 6 |
| MGF 1106 or MGF 1107 Liberal Arts Math I, II or | 6 |
| MAC 1105 or MAD 2122 | 3 |
| POS 1921 Introduction to Professional Development | 1 |
| PSY 2012 Introduction to Psychology | 3 |
| SYG 2000 Introduction to Sociology | 3 |
| 31 | |

Sophomore Year

| | |
|---------------------------------------------------------|---|
| BSC 1005 Biology Sciences & Lab | 4 |
| 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 |

| | |
|-----------------------------------------------------------|---|
| PSC 1121 Introduction to Physical Science & Lab | 4 |
| 29 | |

Junior Year

| | |
|---------------------------------------------------------------|---|
| CGS 1160 or CAP 3505 Computer Applications | 3 |
| Foreign Language Requirement (in a single language) | 8 |
| GEO 2370 or 3421 or GEA 2000 Georgraphy | 3 |
| Minor Course Requirements | 6 |
| PAD 3003 Introduction to Public Administration | 3 |
| PAD 4223 Budgetary and Fiscal Management | 3 |
| POS 3603 Constitutional Law | 3 |
| POS 4703 Scope & Methods | 3 |
| 32 | |

Senior Year

| | |
|------------------------------------------------------|----|
| Foreign Language Requirement | 4 |
| Minor Course Requirements | 12 |
| POS 4910 Senior Research Seminar | 3 |
| POS 4936 Seminar In Political Science | 3 |
| POS Elective Political Science Elective | 3 |
| POT 4064 Contemporary Political Ideologies | 3 |
| 28 | |

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 or 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 |
| 28 | |

Sophomore Year

| | |
|-----------------------------------------------------------|---|
| AMH 2010 or 2020 U.S. History | 3 |
| BSC 1005 Biology Sciences & Lab | 4 |
| 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 |
| PSC 1121 Introduction to Physical Science & Lab | 4 |
| 32 | |

Junior Year

| | |
|----------------------------------------------------------|---|
| CGS 1160 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 Georgraphy | 3 |
| Minor Course Requirements | 6 |
| PHI 2101 Intro to Logic | 3 |
| PAD 3003 Introduction to Public Administration | 3 |
| POS 3603 Constitutional Law | 3 |
| POS 4703 Scope and Methods | 3 |
| 30 | |

Senior Year

| | |
|--------------------------------------------|----|
| Minor Course Requirements | 12 |
| 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 |
| POS Elective Political Science Elective | 3 |
| POT 4064 Contemporary Political Ideologies | 3 |
| <u>30</u> | |

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Bachelor of Science in Political Science with Public Administration Concentration**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 or MGF 1107 Liberal Arts Math I, II or | |
| MAC 1105 College Algebra or MAD 2120 | 3 |
| POS 1921 Introduction to Professional Development | 1 |
| PSY 2012 Introduction to Psychology | 3 |
| SYG 2000 Introduction to Sociology | 3 |
| <u>28</u> | |

28

Sophomore Year

| | |
|-------------------------------------------------|---|
| AMH 2010 or 2020 U.S. History | 3 |
| BSC 1005 Biology Sciences & Lab | 4 |
| 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 |
| PSC 1121 Introduction to Physical Science & Lab | 4 |
| <u>32</u> | |

32

Junior Year

| | |
|---------------------------------------------|---|
| CGS 1160 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 |
| <u>30</u> | |

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Senior Year

| | |
|-----------------------------------------------------|---|
| ENC 2300 or 3320 Improved Writing | 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 |

| | |
|--------------------------------------------|---|
| POS Elective Political Science Elective | 3 |
| POT 4064 Contemporary Political Ideologies | 3 |
| PUP 4947 Public Affairs Internship | 3 |
| <u>30</u> | |

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Bachelor of Science in Political Science with Pre-Law Concentration

Pre-law is an approved minor for students in Political Science and other majors in the College of Arts and Sciences. 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 or MGF 1107 Liberal Arts Math I, II or | |
| MAC 1105 College Algebra or MAD 2120 | 3 |
| POS 1921 Introduction to Professional Development | 1 |
| PSY 2012 Introduction to Psychology | 3 |
| SYG 2000 Introduction to Sociology | 3 |
| <u>28</u> | |

28

Sophomore Year

| | |
|-------------------------------------------------|---|
| AMH 2010 or 2020 U.S. History | 3 |
| BSC 1005 Biology Sciences & Lab | 4 |
| 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 |
| PSC 1121 Introduction to Physical Science & Lab | 4 |
| <u>32</u> | |

32

Junior Year

| | |
|-----------------------------------------------------|---|
| CGS 1160 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 |
| POS 3679 or 4695 Mock Trial or Law and the Consumer | 3 |
| POS 3773 Introduction to Jurisprudence | 3 |
| POS 4703 Scope & Methods | 3 |
| <u>30</u> | |

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Senior Year

| | |
|---------------------------------------------------------------------|---|
| PAD 4223 Budgetary & Fiscal Management | 3 |
| POS 3684 or 4694 Nature and Function of Legal System | 3 |
| POS 3691, 4694, or 4696 Contemporary Legal Problems, Legal Problems | |

| | |
|------------------------------------------------|----|
| of Poor, or Equal Opportunity Law | .3 |
| POS 4910 Senior Research Seminar | .3 |
| POS 4923 Advanced Professional Development | .3 |
| POS 4936 Seminar in Political Science | .3 |
| POS Elective Political Science Elective | .3 |
| POT 4064 Contemporary Political Ideologies | .3 |
| Pre-Law Elect. PLA 4103, CCJ 3200, or POS 4678 | .3 |
| <u>PUP 4947 Public Affairs Internship</u> | .3 |

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Courses accepted for the Pre-Law minor [select 18 hours (six courses)]:

| | |
|---------------------------------------------|----|
| 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 |
| POS 4922 Prof. Dev. & Verbal Reasoning | .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 Urban Studies and Economic Development Concentration

Urban Studies and Economic Development is an approved minor for students in Political Science and other majors in the College of Arts and Sciences. 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 | 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) | .6 |
| MGF 1106 or MGF 1107 or | |
| MAC 1105 College Algebra or MAD 2120 | .3 |
| POS 1921 Introduction to Professional Development | .1 |
| PSY 2012 Introduction to Psychology | .3 |
| <u>SYG 2000 Introduction to Sociology</u> | .3 |

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Sophomore Year

| | |
|-----------------------------------------------|----|
| BSC 1005 Biology Sciences & Lab | .4 |
| CGS 1160 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 |
| <u>PSC 1121 Introduction to Physical Science & Lab</u> | .4 |

32

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 |
| <u>POS 4910 Senior Research Seminar</u> | .3 |

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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 | .3 |
| POS 4923 Advanced Professional Development | .3 |
| POS 4936 Seminar in Political Science | .3 |
| POS Elective Political Science Elective | .3 |
| POT 4064 Contemporary Political Ideologies | .3 |
| <u>PUP 4947 Public Affairs Internship (Minor)</u> | .3 |

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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 |
| <u>Elective, ECP 3203, GEO 3354, POS 4154</u> | .3 |

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Bachelor of Science in Political Science with International Relations Concentration

International Relations is an approved minor for students in Political Science and other majors in the College of Arts and Sciences. Six (6) courses are required to be selected from the list below. A grade of "C" or better must be earned in all classes. Courses required for the major cannot be used to fulfill minor requirements.

Bachelor of Science in Political Science (International Relations Minor)

| 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) | .6 |

MGF 1106 & MGF 1107, Liberal Arts Math I, II6
 POS 1921 Introduction to Professional Development1
 PSY 2012 Introduction to Psychology3
 SYG 2000 Introduction to Sociology3
 31

Sophomore Year

BSC 1005 Biology Sciences & Lab4
 CGS 1160 or CAP 3505 Computer Applications3
 ECO 2013 & 2023 Principles of Economics I, II6
 LIT 2110 Literature3
 PHI 2010 Introduction to Philosophy3
 POS 2001 Introduction to Political Science3
 POS 2041 American National Government3
 POS 2112 State & Local Government3
 PSC 1121 Introduction to Physical Science & Lab4
 32

Junior Year

CPO 2002 Comparative Government3
 CPO 4202 Politics & Government of Africa or elective (Minor)3
 GEO 2370 or 3421 or GEA 2000 Geography3
 PAD 3003 Introduction to Public Administration3
 PAD 4223 Budget and Fiscal Management3
 PHI 2101 Intro to Logic3
 CPO 3204 Contemporary Africa (Minor)3
 POS 3603 Constitutional Law3
 POS 4703 Scope and Methods3
 POS 4910 Senior Research Seminar3
 30

Senior Year

INR 3002 International Relations (Minor Elective)3
 INR 4403 International Law (Minor Elective)3
 INR 4102 American Foreign Policy (Minor)3
 ENC 2300 or 3320 Improved Writing3
 POS 4923 Advanced Professional Development3
 POS 4936 Seminar in Political Science3
 POS Elective Political Science Elective3
 POT 4064 Contemporary Political Ideologies3
 ECO 4713 International Finance (Minor)3
 27

Courses accepted for the International Relations minor:

CPO 3002 Comparative Government (Required)3
 CPO 3204 Contemporary Africa3
 INR 3002 International Relations3
 INR 4403 International Law3
 INR 4102 American Foreign Policy3
 ECO 4713 International Finance3
 21

Instead of taking only the minor courses listed above, students may also choose up to six (6) semester hours from any of the following courses as part of their interdisciplinary minor in International Affairs.

AFH 4100 History of Africa or AFH 42003
 ANT 3340 Caribbean Cultural Patterns3

ANT 3212 Peoples of the World3
 ANT 3702 International Development3
 ANT 3711 Cross-Cultural Resolution3
 CPO 4202 Politics & Government of Africa3
 INR 4334 National Security Policy3
 GEO 3421 Cultural Geography3
 SYD 4020 Population Problems3
 21

Social Science Education

The Bachelor of Science degree in Social Science Education offers an interdisciplinary program designed to prepare students for teaching careers in public or parochial schools. Students enrolled in the Bachelor of Science degree program have the option of concentrating in History or Political Science and upon graduation will receive full state certification. If these students choose not to go into the field of education their training will afford them other opportunities in the public sector, the various for-profit and non-profit agencies and graduate programs.

Major requirements (History Concentration):

All students concentrating in History will complete a minimum of thirty (30) semester hours in the major. All majors must have at least a 2.50 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. All education majors must pass the CLAST Examination or the General Knowledge portion of the Florida Teacher Certification Examination. See your advisor for course sequences in: mathematics, social science, humanities, statistics, and computers.

Freshman Year

| | |
|-------------------------------------------------------------|-----------|
| | Sem. Hrs. |
| AMH 2010 U.S. History to 1865 | 3 |
| AMH 2020 U.S. History Since 1865 | 3 |
| AMH 2091 or AFA 3104 African American History or Experience | 3 |
| BSC 1005 Biological Sciences & Lab | 4 |
| ENC 1101 & 1102 Freshman Communication Skills I, II | 6 |
| MAC 1114 Trigonometric Functions | 3 |
| MGF 1105 College Algebra | 3 |
| PHI 2010 Introduction to Philosophy | 3 |
| | 28 |

Sophomore Year

EDF 1005 Introduction to Education3
 EDG 2701 Teaching Diverse Populations3
 GEA 2000 World Regional Geography3
 POS 2041 American National Government3
 PSC 1121 or AST 1002 or PHY 34644
 PSY 2012 Introduction to Psychology3
 WOH 1012 & 1022 World History6
 25

Summer

CPO 2002 Comparative Government3
 ECO 2013 Principals of Economics I3
 GEO 3421 Cultural Geography3
 LIT 2110 Introduction to Literature3
 POS 2112 State and Local Government3
 15

Junior Year

AMH 3571 or 3572 African American History3

| | |
|--------------------------------------------------------------------|----|
| AMH 4202 20th Century U.S. History | 3 |
| AMH 4420 History of Florida or AFH 4100 | 3 |
| EDF 3120 or 3135 or DEP 2004 or EDP 2002 (Psychology in Education) | 3 |
| EDF 3430 Measure and Evaluation of Educational Growth | 3 |
| EDG 3004 Overview and Orientation to Teaching | 1 |
| EME 2040 Introduction to Education Technology | 3 |
| ESE 4930 Instructional Seminar in Secondary Education | 3 |
| HIS 3104 Nature of History | 3 |
| HIS 3150 Historiography | 3 |
| RED 3333 Teaching Reading in the Content Area | 3 |
| | 34 |

Senior Year

| | |
|----------------------------------------|-------|
| AFH 4200 or ASH 4300 History of Africa | 3 |
| EUH Elective European History Elective | 3 |
| SSE 3360 Teaching Social Studies | 3 |
| TSL 4324 ESOL Survey Strategies | 3 |
| ESE 4943 Student Teaching | 6-12 |
| | 18-24 |

Major requirements (Political Science Concentration):

All students concentrating in Political Science will complete a minimum of thirty (30) semester hours in the major. All majors must have at least a 2.50 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. All education majors must pass the CLAST Examination or the General Knowledge portion of the Florida Teacher Certification Examination. See your advisor for course sequences in: mathematics, social science, humanities, statistics, and computers.

Freshman Year

| | |
|-------------------------------------------------------------|-----------|
| | Sem. Hrs. |
| AMH 2010 U.S. History to 1865 and AMH 2020 | 6 |
| AMH 2091 or AFA 3104 African American History or Experience | 3 |
| BSC 1005 Biological Sciences & Lab | 4 |
| ENC 1101 & 1102 Freshman Communication Skills I, II | 6 |
| LIT 2110 Literature | 3 |
| MAC 1114 Trigonometric Functions | 3 |
| MGF 1105 College Algebra | 3 |
| PHI 2010 Introduction to Philosophy | 3 |
| | 31 |

Sophomore Year

| | |
|--------------------------------------------|----|
| EDF 1005 Introduction to Education | 3 |
| EDG 2701 Teaching Diverse Populations | 3 |
| GEA 2000 World Regional Geography | 3 |
| POS 2001 Introduction to Political Science | 3 |
| POS 2041 American National Government | 3 |
| POS 2112 State and Local Government | 3 |
| PSC 1121 or AST 1002 or PHY 3464 | 4 |
| WOH 1012 World History, Part I | 3 |
| | 25 |

Summer

| | |
|------------------------------------------------|---|
| POS 4703 Scopes & Methods | 3 |
| EME 2040 Introduction to Education Technology | 3 |
| GEO 3421 or GEA 3600 Geography | 3 |
| PAD 3003 Introduction to Public Administration | 3 |

| | |
|---------------------------------|----|
| WOH 1022 World History, Part II | 3 |
| | 15 |

Junior Year

| | |
|------------------------------------------------------------------|----|
| AMH 4420 History of Florida | 3 |
| CPO 2002 Comparative Government | 3 |
| EDF 3120 or 3135 or DEP 2004 or EDP 2002 Psychology in Education | 3 |
| EDF 3430 Measure and Evaluation of Educational Growth | 3 |
| EDG 3004 Overview and Orientation to Teaching | 1 |
| ESE 4930 Instructional Seminar in Secondary Education | 3 |
| POS 3603 Constitutional Law | 3 |
| POS 4910 Senior Research Seminar | 3 |
| POS Elect. Political Science Elective | 3 |
| RED 3333 Teaching Reading in the Content Area | 3 |
| TSL 4324 ESOL Survey Strategies | 3 |
| | 31 |

Senior Year

| | |
|--------------------------------------------|-------|
| AFH 4100 or 4200 History of Africa | 3 |
| ECO 2013 Principles of Economics | 3 |
| POS 4936 Seminar in Political Science | 3 |
| POT 4064 Contemporary Political Ideologies | 3 |
| SSE 3360 Teaching Social Studies | 3 |
| ESE 4943 Student Teaching | 6 |
| | 21-27 |

Course Descriptions

AFA 4936 Seminar in Afro-American Studies (3) Prereq: AMH 3571, 3572; AFH 4100, 4200; ECP 4147; GEA 3600; LIT 4336; PUP 3313; SOP 3724; SOC 4720. Individual research. Afro-American Studies majors only. Permission required.

AFH 4100 History of Africa from Origins to 1800 (3) Pre-colonial, sub-Saharan African History, with emphasis on the rise of nation states, African culture, and contributions to world history.

AFH 4200 History of Africa in 19th and 20th Centuries (3) Treats the effects of slave trade in Africa, and its contacts with European countries, Imperialism, Nationalism, and the struggles for independence.

AMH 2010 U.S. History: 1492 to 1865 (3) From colonial times through Revolutionary Era, Middle Period, and Age of Jackson to coming of Civil War.

AMH 2020 U.S. History: 1865 to Present (3) From Reconstruction through eras of industrialization, progressivism, two World Wars to present.

AFA 3104 The African American Experience utilizes an interdisciplinary approach to the study of major texts, events, political and historical movements of African Americans since the beginning of the slave trade.

AMH 3402 The Old South to 1865 (3) Prereq: AMH 2010. Exploration of development of slavery, agrarianism, and sectionalism through Civil War.

AMH 3403 The New South: 1865 to Present (3) Prereq: AMH 2010 or 3402. Study of the South from beginning of Reconstruction to present with emphasis on impact of industrialization, urbanization and Civil Rights movement.

AMH 3540 American Military (3) Examines development of American military strategy and tactics, both in theory and practice, integrating concept of strategy as political, economic, diplomatic and psychological means for attaining war aims with actual application of strategic thought in war.

AMH 3560 Women in American History (3) Historical inquiry into role and significance of women in structuring of American society.

AMH 3571 Afro-American History to 1865 (3) Prereq: AMH 2010. African-Americans in colonization of America, its settlement and its growth from colonial era to 1865.

AMH 3572 Afro-American History Since 1865 (3) Prereq: Contributions of Afro-Americans from Reconstruction to present.

AMH 4311 U.S. Social History: From Colonial Times to Civil War (3) Prereq: AMH 2010. Analysis of social growth and development with emphasis placed on role of minorities and women.

AMH 4313 U.S. Social History: From Civil War to Present (3) Prereq: AMH 4312 or 2025. Analysis of social growth and development by concentrating on theme of cultural diversity in modern America.

AMH 4373 American Business History (3) Prereq: AMH 2010 or 2025. Analysis on historical growth and development of American economy, with emphasis placed on period since industrialization.

AMH 4420 History of Florida (3) A survey of Florida's historical development from Spanish colonial possession to leading southeastern state, with attention to its economic, social and cultural diversity.

AMH 4511 History of American Diplomacy Since 1898 (3) Prereq: AMH 2025. Traces episodes of American diplomacy from Spanish American War, through imperialism, wars and foreign affairs involving the United States, Cold War, revolution in American diplomacy, dissent and the impact of diplomacy on American politics, intellectual life, and society at large.

AMH 4550 Constitutional History (3) Prereq: AMH 2010 or 2025. History and development of U.S. Constitution from colonial period to present. Emphasis on principle, practices, reactions of the people and changing interpretations.

AMH 4573 Black Americans in Twentieth Century (3) Prereq: AMH 2010, 2025. Focuses on critical problems of Black Americans from Washington-DuBois controversy, through segregation, rise of racial organizations and Civil Rights Era.

ASH 4300 The Far East in History (3) Opening up of Far East by Western powers, and its development in 19th and 20th centuries.

CPO 3002 Comparative Government (3) Prereq: POS 2041. Compares government and politics of United States with that of four major European powers with emphasis on their contribution to American system and the U.S. contribution to other governments.

CPO 3204 Contemporary Africa (3) Prereq: POS 2041. Governments and politics of Africa south of Sahara. Emphasis on cultural, political, economic and ideological development.

CPO 4202 Politics and Government of African States (3) Prereq: Senior Standing. Politics and government of states of Africa. Emphasis on political, administrative, and economic and foreign policy developments of contemporary Africa.

EUH 3100 Ancient History (3) Prereq: WOH 1012. Surveys history of ancient world from ca. 2500 B.C. to period of German invasions ca. 375 A.D. Emphasis placed on analyzing social forces of economic, political, and religious natures that governed society during that period as well as effects of education, technology, and welfare.

EUH 3120 Medieval History (3) Prereq: WOH 1012. Study of European development from collapse of Roman Empire, giving special attention to barbarian invasions and their results, rise of the church, formation of national states, and economic and cultural revival.

EUH 3201 European History (3) Prereq: WOH 1022. Analysis of Reformation Period, Age of Exploration, Age of Revolutions, Imperialism, World War, and Post-War Europe.

EUH 3205 Europe, 1750 to the Present (3) Prereq: WOH 1022. Analysis of Age of Revolutions, Imperialism, World Wars, and Post-War Europe.

EUH 3501 History of England, 1485-1714 (3) Growth and decline of the Tudor and Stuart Monarchies, overseas colonization, and social, economic, and cultural developments.

EUH 4573 Modern Russian History: 1862 to the Present (3) From Bolshevik take-over to international emergency of Soviet Regime.

GEO 2000 World Geography (3) Cultural subdivisions of earth studied by regional approach; geographic locations and environmental nature of countries related to human activities.

GEO 3222 Geography of United States (3) Physical, cultural, and historical geography of United States; population and economic patterns.

GEO 3600 Geography of Africa (3) Physical, cultural, and historical geography of Sub-Saharan Africa; population and economic patterns.

GEO 5615 Advanced Geography of Africa (3) Physical, cultural, and historical geography of African continent; cultural change and modernization; political change; strong emphasis on individual research.

GEO 1010 Principles of Geography (3) Major emphasis on physical nature of earth and formative processes; weather and climate; fundamentals of maps; how distribution or variations in earth's features are related to man's activities.

GEO 3250 Climatology (3) Prereq: GEO 1010. Role of individual elements of climate on world weather and climate patterns; detailed study of weather processes; analytic speculation on past and future world climatic patterns.

GEO 3354 Environment and Human Ecology (3) Prereq: GEO 1370. In-depth study of relationships of overpopulation, hunger, resource shortages, environmental deterioration.

GEO 3370 Conservation (3) Man's interaction with environment and its effects; necessity for wise use of natural resources, and effects of unwise use.

GEO 3421 Cultural Geography (3) A systematic approach to the spatial distribution of cultural features, processes, and relationships. Emphasis is on the contemporary cultural landscape and the environment.

GEO 3502 Economic Geography (3) Economic activities as related to resource distribution, environmental conditions, and technological developments; emphasis on spatial patterns of agriculture, resources, manufacturing, and commerce.

HIS 3150 Historiography (3) Prereq: HIS 3104. Laboratory experience in historical methodology that focuses upon preparation of formal research paper through directed individual study. Area majors only or by approval of History Department.

HIS 3104 The Nature of History (3) Introduction to philosophy, methodology, and terminology of history. History department approval required.

HIS 4153 Oral History Studies (3) Study of methods and techniques of collecting, editing, and utilization of oral history as research method and teaching tool. Emphasis on interviewing, evaluation of information, and use of visual aids and preservation.

HIS 4906 Directed Individual Study (3) Prereq: HIS 3150. Individual study and research under department supervision. Open only to advanced history majors with minimum 3.00 average in history and English.

INR 3002 International Relations (3) Prereq: POS 2041. International community as factor in human, economic, and relations between nations. Agencies and organizations of international cooperation studied with attention to factors influencing international harmony.

INR 4403 International Law (3) Prereq: INR 3002. Law of nations as developed by custom and agreement and as exhibited in decisions of international tribunals. Special attention given current topics relating to development of laws of nations.

INR 4334 National Security Policy (3) This course is a survey of the internal and external aspects of the National Security policy of the United States. Emphasis is placed on policy making procedures of the president and the state department, and the impact of the policy on security agencies for foreign nations and the people.

INR 4102 American Foreign Policy (3) Identification and analysis of fundamentals of U.S. foreign policy, foreign policy-making process, effects of presidential personality, governmental and non-governmental agencies, and forces on formation and functioning of foreign policy.

LAH 4130 Latin American (3) Spanish & Portuguese colonial period & development of each Republic from Independence to present.

PAD 3003 Public Administration (3) Prereq: POS 2041. Basic problems of public administration formulation of public policy, including recent case studies and various theories of policy making and bureaucracy.

PAD 3603 Administrative Law (4) Prereq: PAD 3003. Elements of administrative law, powers, procedures, and liabilities of administrative agencies and officers. Governmental activities in regulation of agriculture, industry, and labor. Emphasis on case studies.

PAD 4024 Administrative Theory and Problems (3) Prereq: PAD 3003. Substance and implications of major concepts of how organizations are developed and managed, particularly public bureaucracies, ranging from origins of normative theory to more recent contributions of behavioral sciences.

PAD 4223 Budgetary and Fiscal Management (3) Prereq: PAD 3003. Settings, practices and problems of modern fiscal management. Primary focus on budgetary concepts and techniques. Budget use as instrument of analysis, planning, and control at all government levels.

PAD 4404 Public Policy and Management (3) Prereq: PAD 3003. Approaches to decision-making in government and administration; decision-making and policy formulation within administrative agencies and within larger context of overall political process.

PAD 4834 Developmental and Comparative Administration (3) Prereq: Junior or senior standing. Economic, social, environmental, and political problems of development of administration and comparative examination of bureaucratic functioning in various cultures utilizing urban, regional, and national models.

POS 2001 Introduction to Political Science (3) Basic concepts, principles, and practices used in political science. Recommended for sophomores majoring in this area.

POS 2041 American National Government (3) Survey of government structure and functions, theory, and practices. Emphasizes constitutional principles, civil liberties, electoral, legislative, and judicial processes, bureaucratic structure, and fiscal management.

POS 2112 American State and Local Government (3) Prereq: POS 2041 or consent of instructor. Comparison and analysis of government organizations and operations, intergovernmental relations, political participation, politics, policies, and fiscal management.

POS 3142 Municipal Government (3) Prereq: POS 2112. Survey of modern urban government; urban social and political problems, relations with other governmental units, and governmental organization and operation. Some field work required.

POS 3163 Local and Community Politics (3) Discussion and analysis of methods of investigation used in local and community politics. Problems of investigation include voting habits and methods and techniques of political action.

POS 3273 Political Campaigns and Elections (3) Survey and analysis of American (local, state, and national) political campaigns and elections; special attention on techniques of campaigning and role of issues, images, the media, and financing.

POS 3413 The American Presidency (3) Analysis of role of American presidency in political process. Emphasis on presidency as institution, on behavior patterns, and on policy decisions of American presidents.

POS 3443 Organize Function of Political Parties (3) Prereq: POS 2041. Nature, structure, and functions of American two-party system, giving attention to their electoral roles and importance, political leadership, organization, nomination, campaigns, finance, and party programs.

POS 3603 American Constitutional Law (3) Prereq: POS 2041. Development of Constitution through judicial interpretation and review. Examines jurisdiction of courts, impact of justices, relationship of state and national government, and basic relationship of individual to both levels of government.

POS 3624 Individual Rights, Civil Liberties, and the Constitution (3) Prereq: POS 2041. Cases and concepts of civil rights and liberties are examined with respect to relevant constitutional provisions. Special emphasis on the role of the Supreme Court as determiner of public policy.

POS 3673 Introduction to Jurisprudence (3) Prereq: Sophomore standing. Problems and concepts of legal philosophy, emphasizing relationship of legal ideas to moral, political, and sociological theories.

POS 3684 Nature and Functions of the American Legal System (3) Prereq: POS 3673 or consent of instructor. Examination and evaluation of law as one of the liberal arts; its nature and function in resolving disputes and providing continuity and consistency to social life.

POS 3691 Contemporary Legal Problems (3) Prereq: POS 3682 or consent of instructor. Analysis of selected contemporary legal problems arising from criminal justice, law and order, law enforcement, and social and political changes.

POS 4063 Intergovernmental Relations (3) Interaction among federal, state, and local levels of government, with emphasis on both policy and administration.

POS 4154 Problems of Urban and Metropolitan Government (3) Prereq: POS 3142. Functional, organizational, and political problems of urban and metropolitan areas; effective political control within urban core; administrative responsiveness and accountability; politics of conflict and

accommodation. Some field work required.

POS 4207 Research Seminar in Political Behavior (4) Prereq: POS 3163 or POS 4703. Formation and expression of political attitudes; emphasis on research techniques as they relate to political participation and influence, political socialization, conflict, recruitment, leadership, etc.

POS 4424 Legislative and Legislation (3) Examination of nature, character, and procedures of legislative bodies. Theories and problems of representation are studied, as well as relationship between different branches of government.

POS 4474 Public Administration and Social Change (3) Prereq: PAD 3003. Impact and influence of social change on administrative process at various levels of government; the administrator as an agent of organizational change and its consequences. Cases analyzed.

POS 4694 Equal Opportunity Law (3) An in-depth study of employment and antidiscrimination laws directed at protecting and preserving the employment and entrepreneur rights of minorities and females.

POS 4695 Law and the Consumer (3) A study and analysis of those state, local, and federal laws and policies directed at protecting the consumer.

POS 4696 Legal Problem of Poor (3) This course examines the legal system which tends to have a negative impact on the poor and less affluent segment of our population. The course introduces theory of justice and analyzes the distributive nature of public policy in liberal democracy.

POS 4697 Environmental Law (3) This course examines the legal framework that relates to the protection of the quality of the environment in terms of adequate protection of air and water quality, the management of hazardous waste materials and the impact of land use. The policies and regulatory roles of local, state and federal government will form much of the course.

POS 4703 Scope and Methods of Political Science (3) Prereq: Junior or senior standing. An inquiry into the nature and objectives of political science and the extent to which the scientific method is appropriate for the study of the political phenomenon; methods of political inquiry.

POS 4900 Readings in Political Science (3) Restricted to junior and senior majors. Can be repeated once. Directed reading of selected topics in different areas of political science and public management (administration), with required consultation and papers.

POS 4905 Directed Individual Study (Var. 3-6) Prereq: Senior standing. Undergraduate senior student, with advisor's recommendation, pursues, through supervised, independent study, courses in area when specified courses are not offered or available for student during academic period.

POS 4936 Seminar in Political Science (3) Prereq: Senior standing. Various approaches to the study of politics, emphasizing the major themes and concepts, as well as the strength and weaknesses, of each approach in comparison with the others.

POT 4004 History of Political Theory (3) Prereq: POS 2001. Survey of major political thinkers from Plato to present. Emphasis on just political order, as well as ideas of authority and freedom, civic responsibility, and duty.

POT 4064 Contemporary Political Ideologies (3) Major political ideas of our times: liberalism and democracy, socialism and communism, fascism, and authoritarianism.

POT 4204 American Political Thought (3) Prereq: POS 2041, POT 4064. Major thinkers and movements from Colonial period to present. Analysis of ideas and concepts which underlie development of the American system of government.

POT 4343 Contemporary Black Political Thought (3) An analysis of contemporary political thinking that has informed the actions and initiatives of African-Americans in the political arena. Conceptualizations in the area of political economy, religion, and culture that relate to political life will also be examined.

PUP 3313 Blacks and the Political Process (3) Prereq: Consent of instructor. Political socialization and roles played by blacks through the protest movements, political parties, and other avenues of political process.

PUP 4104 Introduction to Government Planning (3) Prereq: Junior or senior standing. Concepts, fundamentals, and methods of planning; significance and relationship of planning of public administration and public policy.

PUP 4947 Public Affairs Internship (Var. 3-6) Supervised field work

in bureaucratic, legislative, and legal agency, interest group, political party, or other public affairs-oriented organization for majors. Periodic conference-seminars and papers relating academic and internship experiences required.

WOH 1012 History of Civilization to 1500 (3) Survey of world history from prehistoric times to the beginning of modern times.

WOH 1022 History of Civilization Since 1500 (3) Survey of world history from modern times to the present.

DEPARTMENT OF MATHEMATICS

Degree Program – The Department of Mathematics offers a Bachelor of Science degree in Mathematics and a Bachelor of Science degree in Mathematics Education. Students completing the first program will be prepared for employment in the government sector, private sector, or graduate study 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 student 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. Finally, the completion of the Bachelor of Science in Mathematics Education will provide the student with teacher certification for secondary schools. 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 and (15) fifteen hours in mathematics at the 3000 level or above, including MAS 3105 Linear Algebra and MAA 4211 Advanced Calculus.

Faculty

Professors: Foster, Charles

Associate Professors: Blayneh, Kbenesh; Guerrieri, Bruno; Issos, James; Jones, Andrew; Stephens, Desmond; Stephens, Sonya; Williams, Henry; Williams, Roselyn

Assistant Professors: Lane, Rebekah; Lauric, Vasile; Thuo, Gikiri

Instructors: Andrews, Richard; McNealy, Roscoe

Bachelor of Science Degree in Mathematics Education

Freshman Year Sem. Hrs.

Fall Semester

| | |
|-----------------------------------------------|-----------|
| MAC 2311 | .4 |
| ENC 1101 Freshman Communication Skills I | .3 |
| AMH 2010 African-American History or AMH 2025 | .3 |
| MAD 2120 Finite Mathematics | .3 |
| <u>BSC 1005/L Biological Sciences w/Lab</u> | <u>.4</u> |
| | 17 |

Spring Semester

| | |
|--------------------------------------------|-----------|
| MAC 2312 Calculus II | .4 |
| ENC 1102 Freshman Communication Skills II | .3 |
| MAE 1920 Professional Development I | .1 |
| AMH 3751 African American History 1865 | .3 |
| <u>PSC 1121/L Physical Science and Lab</u> | <u>.4</u> |
| | 15 |

Sophomore year

Fall Semester

| | |
|------------------------------------------|-----------|
| MAC 2313 Calculus III | .5 |
| STA 2023 Probability and Statistics I | .3 |
| EME 2040 Intro to Educational Technology | .3 |
| PHI 201 Intro to Philosophy | .3 |
| <u>SPC 2600 Public Speaking</u> | <u>.3</u> |
| | 17 |

Spring Semester

| | |
|----------------------------------------------------|-----------|
| MHF 4202 Foundations of Mathematics | .3 |
| EDG 2701 Teaching Diverse Populations | .3 |
| PSY 2012 General Psychology | .3 |
| DEP 2004 Human Growth and Development | .3 |
| MAE 2920 Professional Development II | .1 |
| <u>GLY 2001 Intro to Earth & Space Science</u> | <u>.3</u> |
| | 16 |

Junior Year

Fall Semester

| | |
|----------------------------------------------------|-----------|
| MAS 3105 Linear Algebra | .3 |
| MAP 3302 Differential Equations or | |
| MAP 4103 Mathematical Modeling | .3 |
| EDG 3004 Overview & Orient. to Education | .3 |
| EDF 1005 Intro to Education | .1 |
| ESE 3341 Theor. & Pract. of Teach. Sec. Sch | .3 |
| <u>EDF 3430 Measure & Eval of Educ. Growth</u> | <u>.3</u> |
| | 16 |

Spring Semester

| | |
|----------------------------------------------|-----------|
| MAS 4301 Abstract Algebra I | .3 |
| SYG 2000 Sociology | .3 |
| EDG 4708 Multi-Cultural Education | .3 |
| RED 3333 Teach. Read. in Secondary Schools | .3 |
| <u>MAE 3920 Professional Development III</u> | <u>.3</u> |
| | 15 |

Summer Semester

| | |
|------------------------------------------------------|----|
| MAE 4360 Teaching Math in Middle & Secondary Schools | .3 |
|------------------------------------------------------|----|

Senior Year

Fall Semester

| | |
|-------------------------------------------|-----------|
| MTG 4212 Modern Pure Geometry (Fall only) | .3 |
| MAS 4203 Number Theory | .3 |
| TSL 4324 Instruct. Survey for Teach. ESOL | .3 |
| ESE 4930 Seminar in Special Topics | .3 |
| <u>Fine Arts Elective</u> | <u>.3</u> |
| | 15 |

Spring Semester

| | |
|------------------------------------------------|-----|
| ESE 4943 Student Teaching in Secondary Schools | .12 |
|------------------------------------------------|-----|

Bachelor of Science Degree in Mathematics

Freshman Year Sem. Hrs.

Fall Semester

| | |
|------------------------------------------|----|
| MAC 2311 Calculus I | .4 |
| ENC 1101 Freshman Communication Skills I | .3 |

| | |
|-----------------------------------------|-----------|
| AMH 2091 African American History | .3 |
| Humanities Elective | .3 |
| Social Science Elective | .3 |
| | <u>16</u> |

Spring Semester

| | |
|-------------------------------------------------|-----------|
| MAC 2312 Calculus II | .4 |
| ENC 1102 Freshman Communication Skills II | .3 |
| COP 2221C Programming | .3 |
| SPC 2600 Public Speaking | .3 |
| Humanities Elective | .3 |
| | <u>16</u> |

Sophomore YearFall Semester

| | |
|----------------------------------------|-----------|
| MAC 2313 Calculus III | .5 |
| STA 3034 Mathematical Statistics | .3 |
| MAS 3105 Linear Algebra | .3 |
| Approved Science Sequence* | .5 |
| | <u>16</u> |

Spring Semester

| | |
|-------------------------------------------|-----------|
| MHF 4202 Foundations of Mathematics | .3 |
| MAP 2302 Differential Equations | .3 |
| Elective | .3 |
| Approved Science Sequence* | .5 |
| | <u>14</u> |

Junior YearFall Semester

| | |
|-----------------------------------|-----------|
| MAD 3401 Numerical Analysis | .3 |
| MTG 4302 Topology | .3 |
| Electives | .9 |
| | <u>15</u> |

Spring Semester

| | |
|----------------------------------|-----------|
| MAA 4301 Abstract Algebra | .3 |
| MAA 4402 Complex Variables | .3 |
| Electives | .9 |
| | <u>15</u> |

Senior YearFall Semester

| | |
|------------------------------------------|-----------|
| MAA 4211 Advanced Calculus I | .3 |
| Traditional Mathematics Elective** | .3 |
| Electives | .9 |
| | <u>15</u> |

Spring Semester

| | |
|------------------------------------------|-----------|
| MAA 4212 Advanced Calculus II | .3 |
| MAT 4937 Senior Seminar | .3 |
| Traditional Mathematics Elective** | .3 |
| Electives | .9 |
| | <u>18</u> |

* 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).

** List of Mathematical Sciences electives: MAP 4103 Mathematical Modeling, MTG 4212 Modern Pure Geometry, MAS 4203 Number Theory, MAD Combinatorial Analysis.

**Bachelor of Science Degree in Mathematics
Major in Mathematical Sciences**

Freshman Year Sem. Hrs.

Fall Semester

| | |
|----------------------------------------------|-----------|
| ENC 1101 Freshman Communication Skills | .3 |
| AHM 2091 African American History | .3 |
| MAC 2311 Calculus I | .4 |
| Humanities | .3 |
| Social Science Elective | .3 |
| | <u>16</u> |

Spring Semester

| | |
|----------------------------------------------|-----------|
| ENC 1102 Freshman Communication Skills | .3 |
| COP 2221 C Programming | .3 |
| MAC 2312 Calculus II | .4 |
| SPC 2600 Public Speaking | .3 |
| Humanities Elective | .3 |
| | <u>16</u> |

Sophomore YearFall Semester

| | |
|----------------------------------------|-----------|
| MAC 2313 Calculus III | .5 |
| STA 3034 Mathematical Statistics | .3 |
| MAS 3105 Linear Algebra | .3 |
| Approved Science Sequence* | .4 |
| | <u>15</u> |

Spring Semester

| | |
|-------------------------------------------|-----------|
| MHF 4202 Foundations of Mathematics | .3 |
| MAP 2302 Differential Equation | .3 |
| Elective | .3 |
| Approve Science Sequence* | .4 |
| | <u>13</u> |

Junior YearFall Semester

| | |
|-----------------------------------|-----------|
| MAD 3401 Numerical Analysis | .3 |
| Elective | .12 |
| | <u>15</u> |

Spring Semester

| | |
|----------------------------------|-----------|
| MAA 4301 Abstract Algebra | .3 |
| MAA 4402 Complex Variables | .3 |
| Electives | .9 |
| | <u>15</u> |

Senior YearFall Semester

| | |
|------------------------------------|-----------|
| MAA 4211 Advanced Calculus I | .3 |
| Electives | .12 |
| | <u>15</u> |

Spring Semester

| | |
|---------------------------------------|----|
| MAT 4937 Senior Seminar | .3 |
| Mathematical Science Elective** | .3 |

| | |
|-----------------|----|
| Electives | 9 |
| | 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).

**List of Mathematical Sciences electives: MAP 4103 Mathematical Modeling, MAA 4212 Advanced Calculus II

**Bachelor of Science Degree in Mathematics
Major in Actuarial Science**

Freshman Year Sem. Hrs.

| | |
|------------------------------------------------|----------|
| <u>Fall Semester</u> | |
| MAC 2311 Calculus I | 4 |
| ENC 1101 Freshman Communication Skills I | 3 |
| BSC 1005/L General Biology I and Lab | 4 |
| <u>AMH 2091 African American History</u> | <u>3</u> |
| | 14 |

| | |
|--------------------------------------------------|----------|
| <u>Spring Semester</u> | |
| MAC 2312 Calculus II | 4 |
| ENC 1102 Freshman Communication Skills II | 3 |
| BSC 1010/L General Biology II and Lab | 4 |
| MAN 2812 Intro to Business Systems | 3 |
| <u>STA 2023 Probability and Statistics</u> | <u>3</u> |
| | 17 |

Sophomore Year

| | |
|-------------------------------------------|----------|
| <u>Fall Semester</u> | |
| MAC 2313 Calculus III | 5 |
| GEB 1931 Professional Development I | 2 |
| STA 3034 Mathematical Statistics | 3 |
| MAT 4906 Pro-Seminar | 3 |
| <u>Humanities Elective</u> | <u>3</u> |
| | 16 |

| | |
|--------------------------------------------|----------|
| <u>Spring Semester</u> | |
| MAS 3105 Linear Algebra | 3 |
| GEB 1932 Professional Development II | 2 |
| MAT 4906 Pro-Seminar | 3 |
| Social Science Elective | 3 |
| <u>Humanities Elective</u> | <u>3</u> |
| | 14 |

Junior Year

| | |
|-------------------------------------------|----------|
| <u>Fall Semester</u> | |
| SPC 2600 Public Speaking | 3 |
| ECO 2013 Principles of Economics I | 3 |
| ACG 2021 Financial Accounting | 3 |
| MAP 2302 Differential Equations | 3 |
| <u>Approved Actuarial Electives</u> | <u>6</u> |
| | 18 |

| | |
|-------------------------------------------|----------|
| <u>Spring Semester</u> | |
| ECO 2023 Principles of Economics II | 3 |
| ACG 2301 Managerial Accounting | 3 |
| FIN 3403 Corporate Finance | 3 |
| COP 2221 Programming in C Language | 3 |
| <u>Approved Actuarial Elective</u> | <u>3</u> |
| | 15 |

Senior Year

| | |
|------------------------------------------|----------|
| <u>Fall Semester</u> | |
| MAP 4103 Mathematical Modeling | 3 |
| MAN 3025 Principles of Management | 3 |
| RMI 3011 Risk Management | 3 |
| <u>Approved Actuarial Elective</u> | <u>4</u> |
| | 13 |

| | |
|-------------------------------------------|----------|
| <u>Spring Semester</u> | |
| MAR 3023 Principles of Marketing | 3 |
| MAD 3401 Numerical Analysis | 3 |
| <u>Approved Actuarial Electives</u> | <u>7</u> |
| | 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, Hospital’s Rules 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, their properties and graphs, conic sections, binomial Theorem 6. 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, 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, approximate integration and 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 value 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.

MAE 4360 Methods of Teaching Middle and Secondary Mathematics (4) Prereq: MAC 2313. Major topics: Curriculum materials and methods used in teaching in middle and secondary schools.

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, solution by series, Laplace transform, 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 3305 Engineering Mathematics I (3) Prereq: MAC 2313. Major topics: linear algebra, determinants, matrices, eigenvalues, and eigenvectors. Ordinary differential equations, including systems of first-order equations.

MAP 3306 Engineering Mathematics II (3) Prereq: MAP 3305. Major topics: vector calculus, solution of partial differential equations by separation of variables, Sturm-Louisville problems, Fourier series, complex numbers, Cartesian tensors.

MAP 3341 Partial Differential Equations (3) Prereq: MAC 2313. 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 1118 Selected Topics in College Mathematics (1) Major topics: symbolic logic and analysis of valid reasoning; informal geometry, elementary probability and statistics; algebra review (individualized). This course is designed primarily for CLAST preparation of students who have not taken MGF 1108 or MAD 2120 or MGF 1107.

MGF 1106 Liberal Arts Math I (3) Major topics: systematic counting, probability, statistics, history of mathematics, sets, geometry, logic.

MGF 1107 Liberal Arts Mathematics II (3) Major topics: financial mathematics, linear and exponential growth, numbers and number sys-

tems, 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, non-parametric 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 Gaussian 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.

MAS 5328 Group Theory in the Physical Sciences (3).

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 focus 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 MUSIC

The Department of Music has a primary role in the preparation of choral and instrumental musicians for elementary, secondary, and college teaching positions. Students may also receive preparation in Jazz Studies. 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.

Faculty

Professors: James, Shaylor, L; White, Julian E.

Associate Professors: Chipman, Shelby; Horn, Geoffrey; Parsons, Longineu; Sarjeant, Lindsey B.

Assistant Professors: Hall, Brian; Holloway, Diron; Kilgore, Alethea; Roberts, Griffin; Robinson, John; Simons, Anthony; Sobkowska, Joanna; White, Dennine

Adjunct Professor: Capps, William

Bachelor of Science in Music Education with Concentration in Wind, Piano and Percussion

| Freshman Year | Sem. Hrs. |
|-------------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| MUS 1010 Student Recitals | .0 |
| MUN 1110 Marching Band | .1 |
| MV_ 13XX Principal Applied Instrument | .2 |
| MUT 1121 Materials and Skills of Music I | .3 |
| MVK 1111 Class Piano I (non-piano majors) | .1 |
| ENC 1101 Freshman Comm. Skills I | .3 |
| MGF 1106 Liberal Arts Math I | .3 |
| RED 3333 Reading | .3 |

| | |
|--------------------------------------------|----------|
| AMH 2010 U.S. History 1492-1865 or | |
| AMH 2020 U.S. History 1865 - Present | .3 |
| | 18 or 19 |

Spring Semester

| | |
|----------------------------------------------------|----------|
| MUS 1010 Student Recitals | .0 |
| MUN 1130 Symphonic Band | .1 |
| MV_ 13XX Principal Applied Instrument | .2 |
| MUT 1122 Materials and Skills of Music II | .3 |
| MVK 1111 Class Piano II (non-piano majors) | .1 |
| ENC 1102 Freshman Comm. Skills II | .3 |
| MGF 1107 Liberal Arts Math II | .3 |
| *EDF 1005 Introduction to Education (Summer) | .3 |
| | 18 or 19 |

Sophomore Year

Fall Semester

| | |
|--------------------------------------------------|----|
| MUS 1010 Student Recitals | .0 |
| MUN 1110 Marching Band | .1 |
| MV_ 232_ Principal Applied Instrument | .2 |
| MUT 2126 Materials and Skills of Music III | .3 |
| BSC 1005 Biological Science | .3 |
| BSC 1005L Biological Science Lab | .1 |
| MVV 2111 Fundamentals of Voice | .2 |
| MUE 2460 Brass Techniques I | .2 |
| *EDG 2701 Teaching Diverse Population | .3 |
| | 17 |

Spring Semester

| | |
|--------------------------------------------------------|----|
| MUS 1010 Student Recitals | .0 |
| MUN 1130 Symphonic Band | .1 |
| MV_ 232_ Principal Applied Instrument | .2 |
| MUT 2127 Materials and Skills of Music IV | .3 |
| PSC 1121 Introduction to Physical Science | .4 |
| MUE 1440 String Techniques | .1 |
| MUE 3461 Brass Techniques II | .2 |
| MUE 2470 Percussion Techniques | .2 |
| PSC 1121 Physical Science or | |
| AST 1002 Astronomy | .4 |
| *EME 2040 Introduction to Educational Technology | .3 |
| | 18 |

Junior Year

Fall Semester

| | |
|------------------------------------------------|----|
| MUS 1010 Student Recitals | .0 |
| MUN 3110 Marching Band | .1 |
| MV_ 333_ Principal Applied Instrument | .2 |
| MUE 2450 Woodwind Techniques I | .2 |
| MUH 3211 History of Music I | .3 |
| AFA 3104 The African American Experience | .3 |
| MUE 3311 Public School Music I | .3 |
| MUN 3510 Accompanying I (Piano Major) | .1 |
| | 15 |

Spring Semester

| | |
|---------------------------------|----|
| MUS 1010 Student Recitals | .0 |
| MUN 3130 Symphonic Band | .1 |

| | |
|---------------------------------------------------|----------|
| MV_ 333_ Principal Applied Instrument | 2 |
| MUE 3451 Woodwind Techniques II | 2 |
| MUH 3212 History of Music I I | 3 |
| MUE 4480 Instrumental Methods Technology & Mat. I | 3 |
| MUE 4094 Public School Music II | 3 |
| MUE 4104 Conducting I | 2 |
| MUN 3510 Accompanying II (Piano Major) | 1 |
| | 16 or 17 |

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.

Senior Year

Fall Semester

| | |
|---------------------------------------------------------|----|
| MUS 1010 Student Recitals | 0 |
| MUN 1110 Marching Band | 1 |
| MV_ 434_ Principal Applied Instruments (Senior Recital) | 2 |
| MUG 4102 Conducting II | 2 |
| MUE 4332 Instrumental Methods Tech. & Mat. II | 2 |
| EDF 3430 Measurement and Evaluation | 3 |
| ESE 3341 Theory and Practice Teaching Secondary Schools | 3 |
| ESE 4930 Instructional Seminar in Secondary Education | 3 |
| TSL 4324 ESOL Survey of Strategies for Learning | 3 |
| | 19 |

Spring Semester

| | |
|---------------------------|---------|
| ESE 4943 Student Teaching | 6 or 12 |
|---------------------------|---------|

| | |
|--------------------|-------------------------------------------------|
| GRAND TOTAL | Piano Majors 128 or 134 |
| | All Other Instrumental Majors 125 or 131 |

Bachelor of Science in Music Education with Concentration in Voice or Piano

Freshman Year

Sem. Hrs.

Fall Semester

| | |
|------------------------------------------|----|
| ENC 1101 Freshman Communication Skills I | 3 |
| MGF 1106 Liberal Arts I | 3 |
| AMH 2010 U.S. History (1492 - 1865) or | |
| AMH 2020 U.S. History (1865 - Present) | 3 |
| MUS 1010 Student Recitals | 0 |
| MUN 1310 Concert Choir | 1 |
| MVV 1311 Applied Voice | 2 |
| MUT 1121 Materials and Skills of Music I | 3 |
| MVK 1111 Class Piano I | 1 |
| *EDG 3004 Overview & Orientation | 1 |
| | 17 |

Spring Semester

| | |
|-------------------------------------------|----|
| ENC 1102 Freshman Communication Skills II | 3 |
| MGF 1107 Liberal Arts II | 3 |
| MUS 1010 Student Recitals | 0 |
| MUN 1310 Concert Choir | 1 |
| MVV 1311 Applied Voice | 2 |
| MUT 1122 Materials and Skills of Music II | 3 |
| MVK 1111 Class Piano II | 1 |
| *EDG 2701 Teaching Diverse | 3 |
| *DEP 3004 Human Growth & Development | 3 |
| | 19 |

Sophomore Year

Sem. Hrs.

Fall Semester

| | |
|--------------------------------------------|----|
| BSC 1005 Biological Science | 3 |
| BSC 1005L Biological Science Lab | 1 |
| EDF 1005 Introduction to Education | 3 |
| MUS 1010 Student Recitals | 0 |
| MUN 1310 Concert Choir | 1 |
| MVV 2321 Applied Voice | 2 |
| MUT 2126 Materials and Skills of Music III | 3 |
| MVK 2121 Class Piano III | 1 |
| MUH 3211 Music History I | 3 |
| | 17 |

Spring Semester

| | |
|--------------------------------------------------|----|
| PSC 1121 Introduction to Phy. Science | 4 |
| MUS 1010 Student Recitals | 0 |
| MUN 1310 Concert Choir | 1 |
| MVV 2321 Applied Voice | 2 |
| MUT 2127 Materials and Skills of Music IV | 3 |
| MVK 2121 Class Piano IV | 1 |
| MUE 1440 String Techniques | 1 |
| MUE 2412 Intro. to Wind & Percussion Instruments | 2 |
| *MUH 3212 Music History II | 3 |
| | 17 |

Junior Year

Sem. Hrs.

Fall Semester

| | |
|-----------------------------------------|----|
| EDF Measurement & Evaluation | 3 |
| MUS 1010 Student Recitals | 0 |
| MUN 3310 Concert Choir | 1 |
| MVV 3331 Applied Voice | 2 |
| MUN 3510 Accompanying I | 1 |
| MUE 3311 Public School Music I | 3 |
| EME 2040 Introduction to Ed. Technology | 3 |
| RED 3333 Teaching Reading | 3 |
| | 16 |

Spring Semester

| | |
|------------------------------------------------------|---|
| MUS 1010 Student Recitals | 0 |
| MUN 3310 Concert Choir | 1 |
| MVV 3331 Applied Voice | 2 |
| MUG 3201 Choral Conducting | 3 |
| MUG 4104 Conducting I | 2 |
| AMH 2091 Introduction to African American History or | |
| AFA 3104 African American Experience | 3 |

| | |
|---------------------------------|-----------|
| MUN 3513 Accompanying II | 1 |
| MUE 4094 Public School Music II | 3 |
| | <u>14</u> |

Senior Year Sem. Hrs.

Fall Semester

| | |
|-------------------------------------------------|-----------|
| EDE 4930 Professional Seminar | 3 |
| TSL 4324 ESOL Survey of Strategies for Learning | 3 |
| MUS 1010 Student Recitals | 0 |
| MUN 3310 Concert Choir | 1 |
| MVV 4341 Applied Voice (Sr. Recital) or | |
| MVK 4341 Applied Piano | 2 |
| | |
| MUE 4331 Choral Techniques | 3 |
| | <u>12</u> |

Spring Semester

| | |
|---------------------------|-------------------|
| EDF 4943 Student Teaching | 6 or 12 |
| GRAND TOTAL | 118 or 124 |

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.

Requirements for a Minor

Students minoring in music must complete twenty-one (21) semester hours.

| | |
|---------------------------------------------------|-----------|
| | Sem. Hrs. |
| MUS 1010 Student Recitals (3 semesters) | 0 |
| MVK 1111 Class Piano | 1 |
| MVK 1111 Class Piano | 1 |
| Applied Instrument | 4 |
| MUT 1121 Materials and Skills of Music I | 3 |
| MUH 3212 History of Music II | 3 |
| MUE 2412, 3450, 2470, 3461 | |
| (choose two outside applied areas) | 4 |
| MUG 4104 Conducting I | 2 |
| MUE 4331 Choral Techniques or | |
| MUE 4332 Instrumental Methods, Materials & Skills | 2 |
| MV__ 13XX Applied Music | 2 |
| MV__ 13XX Applied Music | 2 |
| MUN 3310, 1130, 3130, 3710, 3440 | |
| (choose one music organization) | 1 |
| | <u>25</u> |

Bachelor of Science in Jazz Studies

The Bachelor of Science degree in Jazz Studies is a Liberal Arts degree designed to prepare students for successful careers as professional musicians or jazz educators. This provides students with the basic skills, techniques, pedagogical concepts and perspectives needed to ensure success in the area, of Jazz Studies and Commercial Music. The program is open to all instrumental and choral students who meet minimum institution requirements for admission. An education sequence is offered to students wishing to pursue teacher certification.

The bachelor of science degree in Jazz Studies and Commercial Music is a 120 semester hour program. Thirty six (36) hours of General Education Courses and 25 hours of music prerequisites are required.

Freshman Year Sem. Hrs.

Fall Semester

| | |
|-------------------------------------------|-----------|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 1710 Jazz Lab Band | 1 |
| MV_ 1311 Applied Music | 2 |
| MVK 1111 Class Piano I (non-piano majors) | 1 |
| MUT 1121 Materials & Skills I | 3 |
| MGF 1106 Liberal Arts Math I | 3 |
| ENC 1101 Freshman Communication Skills I | 3 |
| PSY 2012 Intro. to Psychology or | |
| AMH 2020 U.S. History 1865 to Present | 3 |
| | <u>16</u> |

Spring Semester

| | |
|--------------------------------------------|-----------|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 1710 Jazz Lab Band | 1 |
| MV_ 1311 Applied Music | 2 |
| MVK 1111 Class Piano II (non-piano majors) | 1 |
| MUT 1121 Materials & Skills II | 3 |
| ENC 1102 Freshman Communication Skills II | 3 |
| MGF 1107 Liberal Arts Math II | 3 |
| PSC 1121 Physical Science | 4 |
| | <u>17</u> |

Sophomore Year Sem. Hrs.

Fall Semester

| | |
|---------------------------------------------|-----------|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 1710 Jazz Lab Band/Combo | 1 |
| MV_ 1311 Applied Music | 2 |
| MVK 2121 Class Piano III (non-piano majors) | 1 |
| MUT 2126 Materials & Skills III | 3 |
| MUT 2641 Jazz Improvisation I | 2 |
| Humanities Elective | 3 |
| PHI 2010 Introduction to Philosophy | 3 |
| | <u>15</u> |

Spring Semester

| | |
|---------------------------------------------|-----------|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 1710 Jazz Lab Band/Combo | 1 |
| MV_ 2312 Applied Music | 2 |
| MVK 2122 Class Piano IV (non-pianno majors) | 1 |
| MUT 3361 Jazz Theory | 3 |
| MUT 3462 Jazz Improvisation II | 2 |
| MUE 2460 Jazz Fundamentals | 1 |
| BSC 1005 Biological Science | 3 |
| BSC 1005 Biological Science Lab | 1 |
| | <u>14</u> |

Junior Year Sem. Hrs.

Fall Semester

| | |
|-------------------------------------|---|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 3710 Jazz Lab Band/Combo | 1 |
| MV_ 3311 Applied Music | 2 |
| MUT 3343 Jazz Improvisation III | 2 |
| MUH 3116 Jazz History I | 3 |

| | |
|-------------------------------------|----|
| MUH 3211 Music History I | 3 |
| MUS 3620 Acoustical/Elect. In Music | 3 |
| MVV 2111 Fundamental of Voice | 1 |
| MUT 3312 Jazz Arranging I | 2 |
| | 17 |

Spring Semester

| | |
|---------------------------------------------|----|
| MUS 1010 Student Recital/Jazz Forum | 0 |
| MUN 3710 Jazz Lab Band/Combo | 1 |
| MV- 3312 Applied Music | 2 |
| MUH 3312 Music History II | 3 |
| MUT 3311 Principles of Scoring | 2 |
| MUE 3610 Film Scoring | 3 |
| AMH 2091 Intro. African American History or | |
| AFA 3104 The African American Experience | 3 |
| | 14 |

Senior Year

Sem. Hrs.

Fall Semester

| | |
|-----------------------------------|---|
| MUS 1010 Student Recital | 0 |
| MUN 3710 Jazz Lab Band | 1 |
| MV_ 4311 Applied Music | 2 |
| MUM 3701 Business of Music | 3 |
| MUT 3663 Jazz Styles & Analysis I | 3 |

| | |
|-----------------------|----|
| Humanities Elective | 3 |
| MUG 4101 Conducting I | 2 |
| | 14 |

Spring Semester

| | |
|----------------------------------------------|----|
| MUS 1010 Student Recital | 0 |
| MUN 3710 Jazz Lab Band/Combo | 1 |
| MV_ 4312 Applied Instrument (Senior Recital) | 2 |
| MUE 1440 String Techniques | 1 |
| MUN 3130 Symphonic Band | 1 |
| MUN (Ensemble Elective for Piano Majors) | |
| MUT 4354 Jazz Arranging II | 2 |
| MUT 4664 Jazz Styles & Analysis II | 3 |
| MUE 4481 Jazz Pedagogy | 3 |
| | 13 |

GRAND TOTAL 120

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.

MUN 2422 Clarinet Choir - 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 1310 and 3310 Concert Choir - 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 2430 Trumpet Choir - 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 3421 Flute Choir - 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 3430 Brass Ensemble - a select performing organization, open

by audition to brasswind players. Presents concert off and on campus.

MUN 1391 and 3340 Gospel Choir - 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 1110 and 3110 Marching Band - 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 3130 Symphonic Band - 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 3710 Jazz Lab Band - Admission by audition. Performs an annual concert series and participates in festivals and on tours. Opportunities for original composition, arranging and improvisation.

MUN 1440 and 3440 Percussion Ensemble - a select performing organization, open by audition to outstanding percussionists. Presents concerts on and off campus.

MUN 1442 Woodwind Ensemble - A select performing organization, open by audition to outstanding woodwind students.

Course Descriptions

MUC 3610 Film Scoring (3) Hands on experience composing music for television on motion picture film motion.

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.

MUS 4600 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 organizations.

MUG 3201 Choral Conducting (3) Experience in conducting choral groups, score reading; study of attack, release, dynamics, intonation, and interpretation of problems.

MUE 3210 Public School Music (2) 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 (2) 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 (2-2) Instruments of woodwind sections in orchestra and band; principles governing embouchure, fingering, and tone production.

MUE 2460, 3461 Brass Techniques I II (2-2) 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 4331 Choral Techniques (2) 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.

MUG 4104, 4102 Conducting I, II (2,2) Prereq: Junior standing. Techniques of conducting critical examination of scores with reference to rehearsal and interpretation of problems. Concurrent enrollment in Symphonic Band required.

MUH 3116 Jazz History (3) Historical survey of origin and develop-

ment 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.

MUL 2111, 2112 Introduction to Music (3, 3) Non-music majors; introduction to music history and literature.

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, 1130, 1310, 1440, 1710 Music Organization (1) Ensembles described under Music Organizations. May be repeated for a maximum of 4 credit hours.

MUN 3510 Accompanying (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.

MUS 1010 Student Recitals (0) Weekly 50-minute performance lab course.

MUS 3540 Acoustics and Electronic in Music (3) Lab course emphasizing MIDI technology, recording equipment, digital and analog technology, and composing music within the studio environment.

MUS 4905 Directed Individual Study (1-3) Prereq: 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.

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) Prereq: MUT 1121. Diatonic triads, 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 3311 Principles of Scoring (2) Introduction of fundamental scoring and arranging techniques for marching and symphonic and score analysis techniques.

MUT 2126 Materials and Skills of Music III (3) Prereq: 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) Prereq: 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 3353 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 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 3663, 4664 Jazz Styles and Analysis I, II (2,2) Analytical study of jazz music in terms of form, design and texture.

MUT 3361 Jazz Fundamentals (3) Basic techniques and principles of all theoretical applications of jazz, including rehearsal and adjudication fundamentals.

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 1130 Jazz Piano (3) An intensive course designed to learn the basic skills of jazz piano playing and pedagogical concepts.

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 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 1311 Applied Piano (2) Piano technique development through selected studies: Bach two and three part inventions, Mozart and Haydn sonatas, works from Romantic and Contemporary periods. May be repeated for maximum credit of 4 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 hours.

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.

MWV 3331, 3332, 3333, 3334, 3335 Applied Woodwinds (2)
Establishment of Repertoire, extensive literature, etudes.

MWV 4341, 4342, 4343, 4344, 4345 Applied Woodwinds (2)
Preparation for senior recital program.

DEPARTMENT OF PHYSICS

In physics, three baccalaureate degree programs are offered: (1) bachelor of science in physics, (2) bachelor of science in physics (applied physics track), and (3) bachelor of science in science education (with major in physics education). The bachelor of science in physics degree prepares students to pursue advanced degrees in physics and engineering or to immediately work in science research and development. The bachelor of science in physics (track in applied physics) degree prepares students to pursue a more diversified career in many science-related areas such as computers, environment, management, government agencies, and research laboratories. The bachelor of science in science education (major in physics education) prepares a student to teach physics in the grades K-12.

Requirements for a 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 exclude PHY 2048 and PHY 2049 - General Physics I and II).

Faculty

Emeritus Professor: Greenfield, Mark B.

Professors: Etemadi, Babak; Johnson III, Joseph A.; Kennedy, Robin J.; Mochena, Mogus; Saha, Bidhan C.; Treadwell, Elliott A.; Weatherford, Charles A.; Williams, Ronald L.

Associate Professors: Appartaim, Richard; Belay, Kalayu; Encinosa, Mario R.; Johnson, Lewis E.; Mezonlin, Ephrem; Niculescu, Halina; O'Neal, Ray H.; Stampe, Patricia A.

Assistant Professors: Jack, Mark A.; Williams, Kyron

Physics Curriculum Guides Bachelor of Science In Physics Degree (Track in Applied Physics)

The applied physics track prepares students to pursue careers in the applied science areas such as computers, environment, management, government agencies, and research laboratories.

| Freshman Year | Sem. Hrs. |
|------------------------------------------------------------------------------|-----------|
| ENC1101, 1102 Freshman Communicative Skills I,II | .6 |
| MAC 3311, 3312 Calculus I, II | .8 |
| Humanities Electives | .6 |
| AMH 2091 African American History or AFA 3104 African American Experience | .3 |
| Elective: Social Science, Mathematics, Computer Science | .8 |
| | 31 |

| Sophomore Year | Sem. Hrs. |
|-----------------------------------------------------------|-----------|
| PHY 2048, 2049 General Physics I, II | .10 |
| 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 |
| | 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 |
| | 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, Engineering, and Technology | .6 |
| | 25 |
| Total | 120 |

*Highly recommended physics electives.

Physics Curriculum Guide Bachelor of Science in Physics Degree

The bachelor of science in Physics program prepares students for careers in physics, engineering and technology.

| Freshman Year | Sem. Hrs. |
|------------------------------------------------------------------------------|-----------|
| ENC1101, 1102 Freshman Communicative Skills, I,II | .6 |
| MAC 3311, 3312 Calculus I, II | .8 |
| PHI 1100 Critical Inquiry | .3 |
| AMH 2091 African American History or AFA 3104 African American Experience | .3 |
| AMH 2010 U.S. History or AMH 2020 U.S. History | .3 |
| Elective: Humanities | .6 |
| | 29 |

| Sophomore Year | Sem. Hrs. |
|----------------------------------------------------------|-----------|
| PHY 2048, 2049 General Physics I, II | .10 |
| 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 |
| | 31 |

| 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 or PHZ 3302 Radiation Physics | .4 |
| MAS 3105 Linear Algebra | .3 |
| PHY 3424C Modern Optics | .4 |

| | |
|-----------------------------------------------------------------|------------|
| PHY 4931, 4932 Physics Seminar I, I | .2 |
| Electives: Social Science or Mathematics | .6 |
| | <u>32</u> |
| 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* or PHZ 4303 Nuclear Physics* | .3 |
| PHY 4936 Special Problems (Variable 1-4) | .3 |
| Electives: Natural Sciences, Mathematics or Computer Science | .5 |
| | <u>28</u> |
| Total | 120 |

*Highly recommended physics electives.

Physics Curriculum Guide Bachelor of Science Education (Physics Education)

The bachelor of science in Science Education prepares students to obtain teacher certification and to teach physics and related science courses in grades K-12.

| | |
|---------------------------------------------------|-----------|
| Freshman Year | Sem. Hrs. |
| ENC1101, 1102 Freshman Communication Skills, I,II | .6 |
| PHI 1110 Critical Inquiry | .3 |
| MAC 3311, 3312 Calculus I, II | .8 |
| Humanities Electives | .6 |
| AMH 2091 African American History or | |
| AFA 3104 African American Experience | .3 |
| AMH 2010 U.S. History or AMH 2020 U.S. History | .3 |
| EDF 1005 Introduction to Education | .3 |
| | <u>32</u> |

| | |
|--------------------------------------------|-----------|
| Sophomore Year | Sem. Hrs. |
| PHY 2048, 2049 General Physics I, II | .10 |
| PHZ 3113 Mathematical Methods of Physics I | .3 |
| MAP 3302 Differential Equations | .3 |
| CHM 1045, 1046 General Chemistry I, II | .8 |
| EDG 2701 Teaching Diverse Populations | .3 |
| COP 2221 Programming in "C" Language | .3 |
| | <u>30</u> |

| | |
|------------------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| PHY 3101 Modern Physics | .3 |
| PHY 3101L Modern Physics Lab | .1 |
| PHY 4221, PHY 4222 Mechanics I, II | .6 |
| PHY 4802L Advanced Lab | .2 |
| EDP 3002 Educational Psychology | .3 |
| DEB3004 Human Growth and Development | .3 |
| EDF3604 Introduction to American Education | .3 |
| RED 3333 Reading in the Secondary School | .3 |
| ESE 3341 Theory and Practice in the Secondary School | .3 |
| EME 2040 Introduction to Educational Technology | .3 |
| | <u>30</u> |

| | |
|--------------------------------------------------------------|------------|
| Senior Year | Sem. Hrs. |
| PHY 4323, 4324 Electromagnetism I, II | .6 |
| PHY 4604 Quantum Mechanics I | .3 |
| EDF 3430 Measurement and Evaluation of Educational Growth | .3 |
| SCE 3330 Teaching Science in the High School | .3 |
| EDG 4931 Seminar in Special Topics | .3 |
| ESE 4943 Student Teaching in the High School (Variable 6-12) | .10 |
| EME 4400 Computer Application in Education | .3 |
| | <u>31</u> |
| Total | 120 |

*Highly recommended physics electives.

Course Descriptions

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 1023 Phenomena of Physics (2) Prereq: Curiosity and interest in science phenomena. Demonstration and discussion of some of the most important discoveries of the past in physics.

PHY 1038 Physics of the Environment (4) Applications of basic physics principles to study natural resources on the earth, efficiency of energy conversions processes, alternative energy sources, causes and control of pollution.

PHY 2048, 2049 General Physics I, II (4,4) Coreq: MAC 3311. 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 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, 2054 College Physics I, II (3,3) Prereq: MAC 1133. Introductory physics without calculus for technology, 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 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 2464 The Physical Basis of Music (4) A physical science course for those interested in learning fundamental principles behind string, wind, and percussion instruments, the musical scales, the voice, the ear. Physical and physiological quantities related to music will be discussed and compared. This course is designed to satisfy the physical science requirement of those who would prefer a course with this emphasis to a more general course.

PHY 2464L Physical Basis of Music Laboratory (0) Physical experiments in music and sound for students of PHY 2464.

PHY 3101 Modern Physics (3) Prereq: 2049 or PHY 2054. Special theory of relativity, particle aspects of electromagnetic radiation, physical optics, application of old quantum theory, Schrodinger equation, and the hydrogen atom.

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 thermodynamical systems.

PHY 4221 Mechanics I (3) Prereq: PHZ 3113. Static equilibrium, motion of a particle under central forces, motions of a system 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 Electromagnetics-I (3) Prereq: PHZ 3114. Electrostatics, electrostatic fields in matter, special techniques for calculating potentials, magnetostatics and magnetostatics in matter.

PHY 4324 Electromagnetics 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 various systems.

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 (0) 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. Radiations 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.

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.

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 or ZOO 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 SOP3782, 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. Bring a completed Progression towards Graduation form and your 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 you can obtain information regarding the necessary forms, information regarding majors meetings, graduate school, and internships in psychology.

Minor requirements in Psychology – PSY2012 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: Baldwin, Joseph A (aka Kobi Kambon); Chambers, John W.

Associate Professors: Aroyewun, Oladipo; Bell, Yvonne R.; Brown, Raeford; Hamilton, Seward E.; Jackson-Lowman, Huberta

Assistant Professors: Robertson, Jermaine; Robinson, Jackie; Singleton, Gwendolyn

Visiting Professors: Golden, Amber

Bachelor of Arts Psychology

| Freshman Year | Sem. Hours |
|---------------------------------------------------|------------|
| <u>Fall Semester</u> | |
| ENC 1101 Freshman Communication Skills I | .3 |
| MAC 1105 Algebra ^a | .3 |
| FRE or SPN 1120 French or Spanish Lecture and Lab | .4 |
| BSC or ZOO any level ^a | .4 |
| | 14 |
| <u>Spring Semester</u> | |
| ENC 1102 Freshman Communication Skills I | .3 |
| STA 2023 Probability and Statistics ^b | .3 |
| FRE or SPN 1121 French or Spanish Lecture and Lab | .4 |
| PSY 2012 Introduction to Psychology ^a | .3 |
| General Elective | .3 |
| | 16 |

Sophomore Year

| | |
|---------------------------------------------------------|----|
| <u>Fall Semester</u> | |
| DEP 2004 Development or EDP 2002 Ed. Psych ^a | .3 |
| ENC 2300 or 3243 or 3320 ^c | .3 |
| FRE or SPN 2120 French or Spanish Lecture and Lab | .4 |
| AMH 2091 Introduction to African American History or | |

AFA 3104 African American Experience3
Humanities3
 16

Spring Semester

CGS 1160 Introduction to Microcomputer Applications3
 SOP 3782 Black Psychology3
 Humanities Elective3
 Social Science Elective3
 Natural Science Elective4
16

Junior Year

Fall Semester

PSY 3213 Research Design & Methods3
 PSY 3204 Psychological Statistics^b3
 General Elective3
 General Elective3
 Minor3
15

Spring Semester

EXP 3704 Experimental Psychology4
 Psychology Elective3
 Minor3
 Minor3
General Elective3
 16

Senior Year

Fall Semester

CLP 4142 Abnormal Psychology3
 Psychology Elective3
 General Elective3
 Minor3
 Minor3
15

Spring Semester

PSY 4604 History and Systems of Psychology3
 Psychology Elective3
 Psychology Elective3
 Minor3
General Elective3
 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

Sem. Hours

Fall Semester

ENC 1101 Freshman Communication Skills I3
 MAC 1105 Algebra^a3
 BSC or ZOO any level^a4
 *Humanities3
General Elective3
 16

Spring Semester

ENC 1102 Freshman Communication Skills II3
 STA 2023 Probability and Statistics^b3
 PSY 2012 Introduction to Psychology^a3
 General Elective3
CGS 1160 Introduction to Microcomputer Applications3
 15

Sophomore Year

Fall Semester

DEP 2004 Development or EDP 2002 Ed. Psych^a3

ENC 2300 or 3243 or 3320^c3
 Humanities Elective3
 AMH 2091 Introduction to African-American History or
 AFA 3104 African-American Experience3
General Elective3
 15

Spring Semester

SOP 3782 Black Psychology3
 General Elective3
 General Elective3
 Social Science Elective3
Natural Science Elective4
 16

Junior Year

Fall Semester

PSY 3213 Research Design & Methods3
 PSY 3204 Psychological Statistics^b3
 General Elective3
 General Elective3
 Minor3
15

Spring Semester

EXP 3704 Experimental Psychology^c4
 CLP 4142 Abnormal Psychology3
 Minor3
 Minor3
General Elective3
 16

Senior Year

Fall Semester

PSY 4604 History and Systems of Psychology3
 Psychology Elective3
 General Elective3
 Minor3
 Minor3
15

Spring Semester

Psychology Elective3
 Psychology Elective3
 Minor3
 General Elective3
General Elective3
 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 relations 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 standard-

ization, 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.

DEPARTMENT 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.

Admission to the program in social work is by application. Freshmen students are admitted as Pre-Social Work majors. Transfer students with 60 or more hours must have:

1. three (3) parts of the Statewide CLAST Test;
2. the general education curriculum; and
3. a minimum grade point average of 2.50.

Faculty

Chairperson: Langley, Merlin R.

Associate Professor: Aguilar, Gloria; Haile, Barbara; Jarmon, Brenda; Langley, Merlin R.; Perry, Robin

Assistant Professors: Davis, Cynthia; Jackson, H. Jean Hyche; Jackson, Wanda; McMillan, Jacquelyn

Instructor: Jackson, Wanda

Visiting Assistant Professors: Donaldson, Katisa

Bachelor of Social Work (Liberal Arts Foundation)

| Freshman Year | Sem. Hrs. |
|-------------------------------------------|-----------|
| BSC 1005 Biology | 4 |
| ENC 1101, 1102 Communication Skills I, II | .6 |
| MAC 1105 College Algebra | |
| or MGF 1106 Liberal Arts Math I | .3 |
| MGF 1107 Liberal Arts Math II | .3 |
| AMH 2010 or 2020 American History | .3 |
| POS 2041 American National Government | .3 |
| AMH 2091 Afro-American History or | |
| AFA 3104 African American Experience | .3 |

| | |
|-------------------------------------------------------------|----|
| HUM Humanities Elective | 3 |
| | 28 |
| Sophomore Year | |
| HSC 1100 Health | 3 |
| POS 2012 Introduction to Psychology | 3 |
| PSC 1121 Physical Science or AST 1002 Astronomy | 4 |
| SYG 3010 Social Problems | 3 |
| ENC 2300 Improved Writing | 3 |
| ECO 2013 Principles or ECO 3040 Consumer Economics | 3 |
| SYG 2000 Introduction to Sociology | 3 |
| Humanities Elective | 3 |
| SPC 2600 Public Speaking | 3 |
| SOW 3203 Intro. to Social Work | 3 |
| | 31 |

CLAST (Minimum of 3 parts passed) Minimum GPA 2.50, before junior class status.

Bachelor of Social Work (Professional Course Sequence)

Fall Junior Year

| | |
|--------------------------------------------------|----|
| SOW 3103 Theories Human Behavior | 3 |
| SOW 3290 Ethics & Professional Development | 4 |
| SOW 3230 Social Welfare History | 3 |
| SOW 3341 SOW Practice I | 3 |
| SOW 3801 Self Awareness | 3 |
| | 16 |

Spring Junior Year

| | |
|-------------------------------------------------|----|
| SOW 3350 Interview/Recording | 3 |
| SOW 4322 SOW Practice II | 3 |
| SOW 4403 Research Methods | 3 |
| SOW Elective | 3 |
| SOW 4104 Human Behavior Across Life Cycle | 3 |
| | 15 |

Fall Senior Year

| | |
|--------------------------------|----|
| SOW 4343 SWP III | 3 |
| SOW 4414 Res/Measurement | 3 |
| SOW Elective | 3 |
| SOW 3232 Policy Analysis | 3 |
| Free Electives | 3 |
| | 15 |

Spring Senior Year

| | |
|------------------------------------|----|
| SOW 4510 Field Experience | 12 |
| SOW 4522 Integrative Seminar | 3 |
| | 15 |

TOTAL HOURS120

Course Descriptions

SOW 3103 Theories of Human Behavior (3) A critical analysis of selected theories which differentially explain the development of the individual in society.

SOW 3203 Introduction to Social Work (3) A survey of programs and services developed as a response to human need, from both an historical and political perspective.

SOW 3230 History Social Welfare Policy (3) This course is consistent with the program's commitment to providing an understanding of the dynamics and consequences of social and economic justice, including how policies have either promoted or sought to alleviate all forms of human oppression and discrimination throughout history. This course introduces strategies for combating the causes and effects of institutionalized forms of oppression through the political process that adheres to the profession's values and ethics.

SOW 3232 Policy Analysis (3) The course examines state and federal social welfare policies and programs which have been and/or are current-

ly available to American citizens. It will also examine the relationship of social, economic, and political factors in the development of social services.

SOW 3290 Ethics & Professional Development (4) This course is designed to assist students in gaining knowledge of social work as a profession and developing the professional and practical skills necessary for entry into social work related careers. Ethical dilemmas and values are examined.

SOW 3341 Social Work Practice I (3) Introductory, generalist social work practice focused on values, attitudes, processes in client-worker relationships, assessment, interventions, and goal setting with individuals and families.

SOW 3350 Interviewing and Recording (3) Skills based course addressing practice in twelve interviewing strategies; extensive practice in process case recording.

SOW 3801 Self Awareness Lab (3) Laboratory group experience designed to help social work students gain awareness and understanding of self as a helping person.

SOW 4152 Human Sexuality (3) Examination of the entire span of sexual development including knowledge of historical, biological, psychological and sociological perspectives.

SOW 4322 Social Work Practice II (3) A practice oriented course to develop knowledge in group dynamics, group development, and leadership.

SOW 4343 Social Work Practice III (3) Introduces students to macro social work practice in the community. Examines goals of community organizing, components of community development, and roles of community organizers.

SOW 4403 Research Methods in Social Work (3) Instruction in scientific methods of basic research as a problem-solving process, including definitions of problems, interventions and outcomes in measurable terms. Also formulation and testing of hypotheses.

SOW 4414 Measurement in Social Work Practice (3) Provides basic instruction in use of conceptual and quantitative tools for description, analysis and interpretation of data.

SOW 4104 Human Behavior Across the Life Cycle (3) A Lifespan approach of human development which examines the biological, cultural, psychological, and social factors which influence human development from birth to old age.

SOW 4510 Field Experience in Social Work (Var. 3-12) Affiliation as student intern with social agency. Experience is designed to supplement and reinforce conceptual classroom learning and offer social work practice in structured agency setting, under supervision.

SOW 4522 Integrative Field Seminar (3) A seminar for students in field placement, for the integration of course materials with activities in field placement.

SOW 4602 Social Work Practice in Health Care (3) Issues related to the health care delivery system including legislation and policy development; and the role of social work in medical settings.

SOW 4613 Mental Health Services (3) Analysis of the development of community mental health services in the U.S. and the role of social workers in delivering these services.

SOW 4622 Social Work With African American Families (3) Theories, practice and research relevant to understanding African American families are examined via the socio cultural forces impacting family structures and functions.

SOW 4643 Social Work With the Aged (3) Clarification of special needs of the aged and their families, including psychodynamics of disordered behavior, services available and needed.

SOW 4651 Children and the Law (3) Course focuses on the law directly impacting the tasks performed by social workers in child welfare settings.

SOW 4654 Social Work With Children (3) The structure of services and the range of programs from prevention to protection and placement.

SOW 4657 Youth in Crises (3) Social work with young people encountering traumatic life experiences including crime and violence.

SOW 4682 AIDS: Impact on the Life Cycle (3) An overview of the AIDS epidemic including issues related to HIV testing, ARC treatment, legal and ethical implications.

SOW 4700 Social Work With Chemical Dependencies (3) The nature of drugs and alcohol addiction and the impact of the same on the lives of individuals and families.

SOW 4930 Social Work Topics (3) Variable content course permitting study of current policy issues, special target populations, new programs, etc. Topics to be covered are announced in advance of registration.

DEPARTMENT OF SOCIOLOGY AND CRIMINAL JUSTICE

Faculty

Professors: Foster, John T.; Foster, Sarah W.; Gray-Ray, Phyllis; Persaud, Narayan

Associate Professors: Moloye, Olugbemi

Assistant Professors: Agyapong, Owusu-Ansah; Dix-Richardson, Felecia; Hughes, Brenda

Professors Emeriti: Dhillon, Jogindar; Smith, Charles U.

Department Chair: Narayan Persaud, Ph.D.

Anthropology Coordinator: John T. Foster, Ph.D.

Criminal Justice Coordinator: Owusu-Ansah Agyapong, Ph.D.

Sociology Coordinator: Brenda Hughes, Ph.D.

Juvenile Justice Role Model Program, Director: Narayan,

Persaud

Program 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, 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-sociology 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 3702, CCJ 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 12 semester hours are to be taken from a single substantive area (nine semester hours) and one other course (three semester hours) from any criminal justice area (including special topics). Students may choose from the substantive areas of: (1) legal studies, (2) minority and gender studies, (3) juvenile justice, or (4) corrections. (A law enforcement substantive area option is under development.) 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 juvenile 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 include 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 of Sociology

Freshman Year

| | |
|-------------------------------------------------------------|----|
| 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 |

Sophomore Year

BSC 1005 Biological Science and BSC 1005L 4
 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
 Free Elective 4

 30

Junior Year

SYA 3010 Sociological Thought/Theory 3
 SYA 3300 Research Process I 3
 SYA 3400 Research Process II 3
 SYG 2010 Social Problems 3
 Sociology/Anthropology Electives 6
 Minor Electives 9
 Free Electives 3

 30

Senior Year

SYA 4930 Seminar in Sociology 3
 Sociology/Anthropology Electives 9
 Minor Electives 9
 Internship/Free Electives 9

 30

Total Hours for B.S. in Sociology120

Bachelor of Criminal Justice

Freshman Year

ENC 1101, 1102 or 1122 Communication Skills I, II or
 honors courses 6
 MAC 1105 College Algebra 3
 MGF 1106 Math Science or
 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 w/Lab 4
 HUM approved electives 6
 Free Elective 3

 31

Sophomore Year

AMH 2091 African American History 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 1

 29

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

 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 Criminal Justice Elective 3
 CCJ 4947 *Field Placement/Internship (optional) 12
 Minor 9

 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.

**Courses in Criminal Justice Major
 30 Semester Credit Hours (Minimum)**

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 Police Administration 3
 CCJ 4930 Contemporary 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, 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 Justice120

Minor Programs

Anthropology

ANT 2511 Emergence of Man 3
 Upper Division Anthropology Electives 15
Total hours18

Criminal Justice

CCJ 2010 Introduction to Criminal Justice 3
 Upper Division Criminal Justice Elective Courses 15
Total hours18

Sociology

SYA 3010 Sociological Thought 3
 SYA 3300 Research Process I 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 anthropological 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 resolution. 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 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 it 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 courts.

CCJ 4933 Special Topics: Juvenile Law (3) Course focuses on the law directly impacting on 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 it relates 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 approach to youth management as it relates to prevention, intervention, and diversion. Explores community initiatives to address its 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 Thought (3) Historical overview of the development of sociological thought, with emphasis on contemporary application.

SYA 3300 Research Process I (3) Applications of the scientific method to the collection and presentation of data. Computer work required.

SYA 3400 Research Process II (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 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 American.

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 that is 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 systems of education globally.

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 within the therapeutic encounter, social structure of the hospital and related health facilities, and current research challenges.

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 inter-relationships 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.

SYP 3351 Social Movements (3) This course focuses on episodes of collective behavior and social movements with special attention to large-scale social movements in the United States.

SYP 3510 Deviant Behavior (3) Social, structural, and cultural sources and forms of social problems (e.g., family, education, government, etc.) and behavioral deviation (e.g., crime, drug abuse, mental disorders, etc.).

SYP 4400 Social Change (3) Theories, processes, and implications of recent trends in social evolution.

SYP 4730 Aging in America (3) Social implications of an aging population; adjustments to aging processes and to roles and statuses of later maturity.

DEPARTMENT OF VISUAL ARTS, HUMANITIES AND THEATRE

The Department of Visual Arts, Humanities and Theatre offers degree programs in visual arts, art education, philosophy and religion, and theatre. It also offers basic survey and special topics courses in the humanities. Each program leads to either the Bachelor of Science or the Bachelor of Arts Degree.

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.; Felder, David; LaBossiere, Michael; Williams, Chester

Associate Professors: Harding, Kimberly K.; Matthews, Valencia E.; Wells, Luther D.; Williams, Derek; Wiltsher, Harris, II; Zhang, Li Ping

Assistant Professors: Council, Carolyn Y.; Love, Velma E.; Owens, A. Nevell; Peyton, Richard; Thompson, Carlton

Visual Arts and Art Education

The Visual Arts and Art Education curricula are designed to give students a knowledgeable survey of each field and expose future artists and educators to a variety of media and academic courses for the enrichment of their careers in these disciplines. Students in Visual Arts are directed in studio production through courses in design, drawing, printmaking, painting, ceramics and sculpture. A broad foundation of coursework in Art history guides students to understand the production, intellectual and aesthetic choices of artists and their work. Students in Art Education are provided with the opportunity to take basic studio courses and education courses in a discipline-based approach to teaching art, which includes an internship.

Requirements for a Major

The Visual Arts program offers degrees in Fine Arts and Art Education. The Bachelor of Arts degree requires 12 semester hours of the same foreign language (i.e., French or Spanish) while the Bachelor of Science degree does not. Fine Arts majors are required to have a formal exhibition of creative work/thesis paper with lecture presentation during their last semester in residence. It is anticipated that students will work closely with their advisors/gallery director and the chair of the exhibition and thesis committee to fulfill this requirement.

Curriculum Guide

Bachelor of Arts in Fine Arts

| Freshman Year | Sem. | Hrs. |
|----------------------------------------------------|-------|-----------|
| ENC 1101, 1102 Freshman Communicative Skills I, II | | .6 |
| MAC 1105, MGF 1106 or 1107 Liberal Arts Math I, II | | .6 |
| SPN 1100, 1101 Elementary Spanish or | | |
| FRE 1100, 1101 Elementary French | | .8 |
| ART 1201C, 1202C Design I, II | | .6 |
| ART 2300C, 2301C Drawing I, II | | .6 |
| | | 32 |

Sophomore Year

| | | |
|---------------------------------------------------------------|-------|-----------|
| Humanities Electives | | |
| (see allied courses under Humanities minor) | | .6 |
| BSC 1005 Biological Science | | .4 |
| SPN 2200 Intermediate Spanish or FRE 2200 Intermediate French | | .4 |
| ARH 2050, 2051 Art History I, II | | .6 |
| ART 2754C Ceramics I, ART 2400C Graphics I, | | |
| ART 2540C Painting I, ART 3710C, Sculpture I | | .12 |
| | | 32 |

Junior Year

| | | |
|------------------------------------------------------|-------|----|
| PSC 1121 Physical Science | | .4 |
| PSY 2012 Psychology, SYG 2000 Sociology or | | |
| ANT 2000 Anthropology | | .3 |
| AMH 2091 Introduction to African American History or | | |
| AFA 3104 African American Experience | | .3 |
| ART 2752C Ceramics II, ART 2430C Graphics II, | | |
| ART 2550C Painting II, ART 3711C Sculpture II, | | |
| ART 2130C Textile Design, ART 2100C Wood, Metal, | | |

Plastics, or ART 3155C Metal Work & Enameling6
 ART 2280C Lettering or ART 3233C Advertising Design2
 ARH 3610 American Art or ARH 4410 Modern Art3
Approved Minor Electives (see minors for art majors below)9
 30

Senior Year

ARH 4614 African-American Art or ARH 4520 African Art3
 ART 2330C Life Drawing3
 Advanced Studio Art Courses: ART 4403C Printmaking IV,
 ART 3115C Ceramics III or ART 4923C, Media Workshop: Printmaking;
 ART 4926C, Media Workshop: Electronic Imaging;
 ART 4928 C, Media Workshop: Advanced Design;
 ART 4928C, Advanced Workshop: Drawing;
 ART 4928C, Advanced Workshop: Ceramics8
 Approved Minor Electives (see minors for art majors below)9
ART 4915 Colloquium3

Total Hours120

Bachelor of Science in Fine Arts

Freshman Year

Sem. Hrs.

ENC 1101, 1102 Freshman Communicative Skills I, II6
 MAC 1105, MGF 1106 or 1107 Liberal Arts Math 1, II6
 HUM 2210 Humanities3
 AMH 2091 Introduction to African American History or
 AFA 3104 African American Experience3
 ART 1201C, 1202C Design I, II6
ART 2300C, 2301C Drawing I, II6
 30

Sophomore Year

Humanities Elective (see allied courses under
 Humanities minor)3
 BSC 1005 Biological Science4
 PSC 1121 Physical Science4
 ARH 2050, 2051 Art History I, II6
 ART 2754C Ceramics I, ART 2400C Graphics I,
 ART 2540C Painting I or ART 3710C Sculpture I12
ART 2280C Lettering or ART 3233C Advertising Design2
 32

Junior Year

PSY 2012 Psychology, SYG 2000 Sociology or
 ANT 2000 Anthropology3
 ART 2752C Ceramics II, ART 2430C Graphics II,
 ART 2550C Painting II, ART 3711C, Sculpture II6
 ART 2130C Textile Design, ART 2100C Wood, Metal, Plastics,
 or ART 3155C Metal Work & Enameling3
 ARH 3610 American Art or ARH 4410 Modern Art3
 Advanced Studio Art Courses: ART 4403C Printmaking IV,
 ART 3115C Ceramics III or ART 4905 (Independent Study in Painting,
 Sculpture, Graphics, Design, Ceramics)6
Approved Minor Electives (see minors for art majors below)9
 30

Senior Year

ARH 4614 African-American Art or ARH 4520 African Art3
 ART 2330C Life Drawing3
 Advanced Studio Art Courses: ART 4403C Printmaking IV,
 ART 3115C, Ceramics III or ART 4923C, Media Workshop: Printmaking;
 ART 4926C, Media Workshop: Electronic Imaging;
 ART 4928 C, Media Workshop: Advanced Design;
 ART 4928C, Advanced Workshop: Drawing;
 ART 4928C, Advanced Workshop: Ceramics11
 Approved Minor Electives (see minors for art majors below)9
ART 4915 Colloquium3

Total Hours120

Bachelor of Science in Art Education

Freshman Year

Sem. Hrs.

ENC 1101, 1102 Freshman Communicative Skills I, II6
 EDF 1005 Introduction to Education3
 MAC 1104, MGF 1106, Mathematics6
 Electives in Studio Art6
 ART 1201C, 1202C Design I, II6
ART 2300C, 2301C Drawing I, II6
 33

Sophomore Year

Humanities Elective
 (see allied courses under Humanities minor)6
 AMH 2091 African-American History or
 AFA 3104 African American Experience3
 BSC 1005 Biological Science4
 PSC 1121 Physical Science4
 Electives in Studio Art6
 ART 2110C Ceramics I3
 ART 2540C Painting I3
 ARH 2050, 2051 Art History I, II6
 EDG 2701 Teaching Diverse Populations3
EME 2040 Introduction to Educational Technology3
 41

Junior Year

PSY 2012 Psychology, SYG 2000 Sociology or
 ANT 2000 Anthropology3
 ARE 4355, 4640 Art Education I, II4
 ARE 3313, 3341 Public School Art Elementary and Secondary6
 ART 2400 Graphics I3
 ART 3711 Sculpture I3
 Elective in Studio Art6
 EDF 3430 Measurement and Evaluation of Educational Growth3
 EDP 3002 Educational Psychology3
TSL 4324 ESOL Survey Strategies for Secondary Schools3
 34

Senior Year

ARH 3610 American Art or ARH 4410 Modern Art3
 ESE 4930 Seminar in Secondary Education3
 ESE 3341 Theory/Practice of Teaching in Secondary Schools3
 RED 3333 Readings in Secondary School3

ESE 4943 Student Teaching6-12
 18
Total Hours126

Requirements for a Minor

Fine Arts Majors-All Fine Arts majors must declare a minor field of study outside of the visual arts area. Fine Arts majors may choose to minor in humanities.

Minor in Graphic Arts-Students interested in advertising design and related fields should take a major concentration in painting and graphics and an interdisciplinary minor in graphic arts technology. Students should select courses in consultation with the faculty in visual arts and in graphic arts technology.

Art Education Majors-Students who major in Art Education must minor in education.

Minor in Fine Arts (for Non-Art Majors)

| | |
|--------------------------------------------------|-----------|
| | Sem. Hrs. |
| ART 1201 Design I | 3 |
| ART 2300 Drawing I | 3 |
| ARH 2050, 2051 Art History I and II | 6 |
| ART 2710 Sculpture or ART 2110 Ceramics I | 3 |
| ART 2540 Painting I or ART 2400 Graphics I | 3 |
| | 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. |
| ENC 1101, 1102 Freshman Communication Skills I, II | 6 |
| MAC 1104, MGF 1202 Mathematics | 6 |
| PHI 2010 Introduction to Philosophy | 3 |
| REL 2000 Introduction to Religion | 3 |
| Social Science Elective | 3 |
| SPN 1100 and 1101 Elementary Spanish (with labs) or FRE 1100 and 1101 Elementary French (with labs) | 8 |
| | 29 |

Sophomore Year

| | |
|---------------------------------|---|
| PSC 1121 Physical Science | 4 |
|---------------------------------|---|

| | |
|-----------------------------------------------------------------|----|
| BSC 1005 Biological Sciences | 4 |
| Philosophy or Religion Electives | 6 |
| FRE or SPN 2200 Intermediate French or Spanish (with lab) | 4 |
| AMH 2091 African American History | 3 |
| Humanities Electives | 6 |
| Free Elective | 3 |
| | 30 |

Junior Year

| | |
|----------------------------------------|----|
| Free Electives | 12 |
| Philosophy or Religion Electives | 9 |
| Courses in Minor | 9 |
| | 30 |

Senior Year

| | |
|----------------------------------------|----|
| Philosophy or Religion Electives | 9 |
| Courses in Minor | 9 |
| Free Electives | 13 |
| | 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 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 and Theatre Education

The program in theatre offers pre-professional preparation by combining acting, directing, designing, and production with the literary, historical, and creative study of drama.

Requirements for a Major

The program offers two degree options: the Bachelor of Arts and the Bachelor of Science. Students may elect concentrations in either performance or theatre education. The performance 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. The teacher education concentration requires the completion of a minimum of thirty-eight (38) semester hours of theatre courses and a professional education core which includes student teaching.

Requirements for a Minor

Students who minor in theatre must complete (with approval by the Theatre Advisor) sixteen (16) semester hours of lecture 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 | |
| *ENC 1101 Freshman Communicative Skills I | 3 |

*MGF 1106 Liberal Arts Math I3
 *XXX XXXX Science Elective4
 THE 2000 Introduction to Theatre3
 TPP 2120 Improvisations for the Theatre2
 TPP 2190L Introduction to Creative Work (1 hr./sem.)1
 16

Spring Semester

*ENC 1102 Freshman Communicative Skills II3
 *MGF 1107 Liberal Arts Math II3
 *XXX XXXX Science Elective4
 TPP 1700 Voice and Diction for Theatre2
 TPP 2500 Basic Principles of Movement1
 TPA 3200L Production Lab1
 14

Sophomore Year

Fall Semester

FRE 1100 Elementary French I Lecture or
 SPN 1100 Elementary Spanish I Lecture3
 FRE 1100L Elementary French I Lab or
 SPN 1100L Elementary Spanish I Lab1
 *XXX XXXX Pre-Approved Humanities Elective3
 TPP 2110 Elements of Acting3
 THE 3112 Theatre History I3
 TPA 3200L Production Lab (1 hr./sem.)1
 AMH 2091 Introduction to African-American History or
 AFA 3104 The African-American Experience3
 17

Spring Semester

FRE 1101 Elementary French II Lecture or
 SPN 1101 Elementary Spanish II Lecture3
 FRE 1101L Elementary French II Lab or
 SPN 1101L Elementary Spanish II Lab1
 *XXX XXXX Pre-Approved Social Science Elective3
 TPA 2210 Stagecraft and Production Techniques3
 THE 3113 Theatre History II3
 TPA 3200L Production Lab (1 hr./sem.)1
 14

Junior Year

Fall Semester

FRE 2200 Intermediate French I Lecture or
 SPN 2200 Intermediate Spanish I Lecture3
 FRE 2200L Intermediate French I Lab or
 SPN 2200L Intermediate Spanish I Lab1
 THE 2300 Critical Analysis of Drama3
 TPA 3230 Introduction to Costume and Wardrobe3
 TPA 3200L Production Lab (1 hr./sem.)1
 TPP 2111 Advanced Acting3
 14

Spring Semester

THE 3235 Contemporary Black Theatre3
 TPP 3310 Fundamentals of Play Direction3
 TPA 3200L Production Lab (1 hr./sem.)1

XXX XXXX Minor Elective3
 XXX XXXX Minor Elective3
 XXX XXXX Minor Elective3
 16

Senior Year

Fall Semester

TPA 4060 Concepts of Scenic and Lighting Design3
 THE 4908 Senior Project3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Theatre Elective3
 XXX XXXX Minor Elective3
 XXX XXXX Minor Elective3
 16

Spring Semester

ORI 2000 Oral Interpretation or
 ORI 4318 Readers Theatre3
 TPA 4400 Theatre Management3
 Free Electives3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Minor Elective3
 13

Total Hours120

**Bachelor of Science in Theatre
 Major in Drama Education**

Freshman Year Sem. Hrs.

Fall Semester

*ENC 1101 Freshman Communicative Skills I3
 *MGF 1106 Math for Liberal Arts13
 PSC 1121 Introduction of Physical Science4
 TPP 2120 Improvisation for the Theatre2
 THE 2000 Introduction to Theatre3
 TPP 2190L Introduction to Creative Work1
 16

Spring Semester

*ENC 1102 Freshman Communicative Skills II3
 *MGF 1107 Math for Liberals II3
 *BSC 1005 Biological Science3
 *BSC 1005L Biological Science Lab1
 TPP 1700 Voice and Diction for Theatre2
 TPP 2500 Basic Principles of Movement1
 TPA 3200L Production Lab (1 hr./sem.)1
 EDG 3004 Overview & Orientation Field Experience1
 15

Sophomore Year

Fall Semester

EDF 3135 Adolescent Psychology3
 AMH 2091 Introduction to African American History or
 AFA 3104 The African American Experience3
 THE 3112 Theatre History I3
 EDF 1005 Introduction to Education3
 TPA 3200L Production Lab (1 hr./sem.)1
 16

Spring Semester

THE 3235 Contemporary Black Theatre3
 THE 3113 Theatre History II3
 TPA 2210 Stagecraft Production Techniques3
 TPA 3200L Production Lab (1 hr./sem.)1
 EDG 2701 Teaching Diverse Populations3
 EME 2040 Introduction to Educational Technology3
 16

Junior Year

Fall Semester

TPA 3230 Introduction to Costume and Wardrobe3
 THE 2300 Critical Analysis of Drama3
 XXX XXXX Pre-Approved Humanities Elective3
 XXX XXXX Minor Elective3
 TPA 3200L Production Lab (1 hr./sem.)1
 +ESE 3341 Theory and Practice of Teaching in Secondary Schools3
 16

Spring Semester

ORI 2000 Oral Interpretation or ORI 4310 Readers Theatre3
 TPP 3310 Fundamentals of Play Direction3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Minor Elective3
 +RED 3333 Reading in the Secondary School3
 EDF 3430 Measurement and Evaluation of Educational Growth3
 16

Senior Year

Fall Semester

TPA 4060 Concepts of Scenic and Lighting Design3
 TSL 4324 ESOL Survey Strategies3
 XXX XXXX Minor Elective6
 12

Spring Semester

TPA 4400 Theatre Management3
 THE 4760 Methods of Teaching Theatre in the High School3
 XXX XXXX Minor Elective6
 15

Fall Semester

ESE 4943 Student Teaching (Variable hrs: 6-12)6
 6

Total Hours125

Bachelor of Science in Theatre

Freshman Year

Sem. Hrs.

Fall Semester

*ENC 1101 Freshman Communicative Skills I3
 *MGF 1106 Liberal Arts Math I3
 *XXX XXXX Science Elective4
 THE 2000 Introduction to Theatre3
 TPP 2120 Improvisations for the Theatre2
 TPP 2190L Introduction to Creative Work (1 hr./sem.)1

Spring Semester

*ENC 1102 Freshman Communicative Skills II3
 *MGF 1107 Liberal Arts Math II3
 *XXX XXXX Science Elective4
 TPP 1700 Voice and Diction for Theatre2
 TPP 2500 Basic Principles of Movement1
 TPA 3200L Production Lab (1 hr./sem.)1
 30

Sophomore Year

Fall Semester

*XXX XXXX Pre-Approved Humanities Elective3
 TPP 2110 Elements of Acting3
 THE 3112 Theatre History I3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Theatre/Free Elective3
 AMH 2091 Introduction to African-American History or
 AFA 3104 The African-American Experience3
 16

Spring Semester

XXX XXXX Pre-Approved Social Science Elective3
 THE 3113 Theatre History II3
 TPA 2210 Stagecraft and Production Techniques3
 TPP 2111 Advanced Acting3
 XXX XXXX Theatre/Free Elective3
 TPA 3200L Production Lab (1 hr./sem.)1
 16

Junior Year

Fall Semester

TPA 3230 Introduction to Costume and Wardrobe3
 THE 2300 Critical Analysis of Drama3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Minor Elective3
 XXX XXXX Minor Elective3
 XXX XXXX Theatre/Free Elective3
 16

Spring Semester

TPP 3310 Fundamentals of Play Direction3
 THE 3235 Contemporary Black Theatre3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Theatre/Free Elective3
 XXX XXXX Minor Elective3
 13

Senior Year

Fall Semester

TPA 4060 Concepts of Scenic and Lighting Design3
 THE 4908 Senior Project3
 TPA 4400 Theatre Management3
 TPA 3200L Production Lab (1 hr./sem.)1
 XXX XXXX Minor Elective3
 XXX XXXX Minor Elective3
 16

Spring Semester

| | |
|--------------------------------------------------------------------|------------|
| ORI 2000 Oral Interpretation or ORI 4310 Readers Theatre | .3 |
| TPA 3200L Production Lab (1 hr./sem.) | .1 |
| XXX XXXX Theatre/Free Elective | .3 |
| XXX XXXX Theatre/Free Elective | .3 |
| XXX XXXX Minor Elective | .3 |
| 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. The following courses are required:

| | |
|-----------------------------------------|-----------|
| | Sem. Hrs. |
| HUM 2211 Historical Survey I | .3 |
| HUM 2230 Historical Survey II | .3 |
| Allied Courses: | .12 |
| | 18 |

Allied Courses which may be chosen:

Literature

| | |
|-------------------------------------------------|----|
| IT 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 2210 Introduction to the Hebrew Scriptures | .3 |
| REL 2240 Introduction to the Christian Scriptures | .3 |
| REL 3130 Religion in American Culture | .3 |
| REL 3312 Eastern World Religions | .3 |
| REL 2320 Western World Religions | .3 |
| REL 3936 Special Topics in Religion | .3 |
| REL 4440 Contemporary Religious Thought | .3 |

History

| | |
|---------------------------------------------------------|----|
| WOH 1012 History of Civilization to 1500 | .3 |
| WOH 1022 History of Civilization 1500-present | .3 |
| 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 |
| EUH 3100 Ancient History | .3 |
| EUH 3120 Medieval History | .3 |
| EUH 3501 History of England | .3 |

Architecture

| | |
|--------------------------------------------|----|
| ARC 1211 Building Arts | .3 |
| ARC 2701 Architecture History I | .3 |
| ARC 2702 Architecture History II | .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 |

Course Descriptions

ARE 3313 Public School Art: The Elementary School (3) Various art education theories relative to teaching art in the elementary school; consideration of methods and problems of teaching, lesson planning, reading and discussion, and practical arts and crafts.

ARE 3314 Art Production: Elementary School (3) Skills, materials and techniques in art appropriate for teaching children K-5 are explored.

ARE 3341 Public School Art: The Secondary School (3) For students preparing to teach art in junior and senior high schools. Consideration of methods and unique problems of teaching at these levels: reading, lecture, discussion, and practical arts and crafts experiences.

ARE 4355 Art Education I: Readings in Professional Literature (2) Literature on art education, aesthetics, perception, history of the field, child development in art. Seminar: reading and discussion.

ARE 4640 Art Education II: Professional Orientation and Critical Evaluation (2) Critical issues in the field of art education with an emphasis on evaluation procedures and research. Seminar: reading and discussion.

ARH 2000 Art Appreciation (3) A survey of the vital functions of art in a society.

ARH 2050 Art History I (3) Styles of sculpture, painting and architecture from prehistoric times through the Middle Ages.

ARH 2051 Art History II (3) Styles in art from the Renaissance to the Modern era.

ARH 3610 American Art (3) A survey of American art from the 18th to the 21st century.

ARH 4403 Modern Art (3) A survey of 19th- and 20th-century painting, sculpture and architecture.

ARH 4520 African Art (3) A survey of African art, with principle attention given to sculpture, with concern for style and regional differentiation.

ARH 4633 African-American Art (3) A survey of contributions made by artists of African descent in the United States with an emphasis on the 17th through 21st centuries.

ART 1201C Design I: Introduction to Visual Elements (3) Principles of visual organization; emphasis on basic art vocabulary, technique and application of primarily two-dimensional experiences.

ART 1203C Design II: Introduction to Visual Elements (3) Prereq: ART 1201. Principles of visual organization with an emphasis on basic art vocabulary, technique and application of two and three-dimensional experiences.

ART 2130 Textile Design (3) Introduction to design and composition as it relates to textile surface printing, costumes and fashion design.

ART 2162C Introduction to Sculptural Forms (3) Creation of three-dimensional forms using wood, metal and contemporary media.

ART 2280C Lettering (3) Principles of design applied to lettering problems as it relates to advertising; study of various styles and development of skills in execution.

ART 2300C Drawing I (3) Basic drawing and composition. The use of various drawing media, consisting primarily of a study of still-life, spatial description, and landscapes.

ART 2301C Drawing II (3) Prereq: ART 2300C. Basic to intermediate drawing. Spatial composition, interpretation of line, pictorial form and content are explored through the study of still-life, landscapes, and the human figure.

ART 2302C Drawing III (3) Prereq: ART 2300C, ART 2301C. Intermediate drawing and composition with traditional and contemporary methodologies in drawing are explored. Emphasis on composition, illustration and rendering.

ART 2330C Life Drawing (3) Prereq: ART 2300. Introduction to drawing the human figure using traditional media, technique and application. Aspects of drapery as it relates to the human figure is explored.

ART 2400C Printmaking I (3) Prereq.: ART 1201C or consent of instructor. Introduction to relief printing with emphasis on linocuts, inventive designing and to the handling of tools and materials used in relief printmaking.

ART 2430C Printmaking II (3) Prereq.: ART 1201C or consent of instructor. Introduction to silkscreen printing with emphasis on image making, inventive designing and to the handling of tools and materials used in silkscreen.

ART 2540C Painting I Watercolors (3) Painting from still life, relating subject to pictorial form and content, landscape, and human figure; special problems with watercolor medium.

ART 2501C Painting II Acrylic (3) Prereq: ART 2540 or consent of instructor. Painting from still life, relating subject to pictorial form and content, landscape, and human figure; special problems with acrylic medium.

ART 2754 Ceramics I - Handbuilding (3) Introduction of students to the basic methods of handbuilding and throwing processes; introduction to glaze experimentation.

ART 2752 Ceramics II - Wheel Throwing (3) Prereq: ART 2754 or consent of instructor. Intermediate study of working with handbuilding and throwing techniques. Emphasis on craftsmanship and design; practice with glazing and firing pottery and sculpture.

ART 3766 Ceramics III - Glaze Experimentation (3) Prereq: ART 2754 or consent of instructor. Specialized study and laboratory problems in craftsmanship, inventiveness and expressive design in clay, glaze, and firing processes.

ART 3233 Advertising Design (3) Prereq: ART 1201C, 2300C. Introduction to interdisciplinary electronic art, combining visual design and video, with computer skills.

ART 3158 Intermediate Sculpture (3) Prereq: ART 2162C or ART 3710C or consent of instructor. Intermediate study of working with design and metal working as it relates to contemporary methods.

ART 3563C Painting III - Oil Medium: (3 hours) Prereq: ART 2540 or consent of instructor. Painting from still life, relating subject to pictorial form and content, landscape, and human figure; special problems with oil medium.

ART 3710C Sculpture I - Clay and Plaster (3) Three-dimensional form using clay and plaster. Study of three-dimensional form selected media.

ART 3711C Sculpture II - Wood, Stone, Metal (3) Prereq: ART 3710 or consent of instructor. Three-dimensional forms using traditional and contemporary materials.

ART 3947 Art Management I (3) Introduction to professional practices as it relates to art management, development and exhibitions.

ART 4403C Graphics IV - Intermediate Problems (3) Prereq: ART 2400C or ART 2430C. Intermediate study in contemporary processes from selected printmaking forms.

ART 4564C Painting V – Advanced Problems (3) Prereq: ART 2540 or consent of instructor. Specialized study dealing with craftsmanship, inventiveness and expressive design and composition in painting.

ART 4576C Mural Painting (3) Prereq: ART 2540 or consent of instructor. Specialized study in the history, technique and application in the art of mural painting.

ART 4905 Directed Individual Study (1-6 hours) Intermediate study of selected discipline (ceramics, digital media, drawing, graphics, painting, sculpture) with contemporary concepts. Permission of department chair and supervising professor required. Repeatable to a maximum of six semester hours.

ART 4910 Independent Study in Design and Composition (3) Prereq: ART 1201C. Advanced problems in the technique and application of two and three-dimensional experiences.

ART 4911 Independent Study in Communication Art and Design (3) Prereq: ART 1201C. Advanced problems in the technique and application of digital media.

ART 4915 Colloquium in Art (2) Enrichment program dealing with current topics in art criticism, personalities in visual art, and field experiences concerning the art profession. Students will work on completing their work for the senior exhibition and developing their portfolio, including resume and artist's statement.

ART 4923 Media Workshop – Printmaking (3) Advanced study in contemporary processes from selected printmaking forms with emphasis on professional applications.

ART 4926 Media Workshop – Electronic Imaging (3) Advanced study in contemporary digital processes with emphasis on professional applications in electronic media.

ART 4928 Advanced Workshop (3) Advanced course exposing students to various disciplines (ceramics, digital media, drawing, graphics, painting, sculpture) through experimental assignments and innovative methods. The student will be able to transfer disciplines within design concepts and explore the possibilities of contemporary work within selected discipline.

ART 4944 Visual Communications (3) Practical application of professional practices as it relates to digital imaging and animation.

ART 4947 Art Management II (3) Continuing practice of professional practices as it relates to art management, development and exhibitions. Emphasis is on gallery management and coordinating special events.

HUM 2211 Historical Survey I (3) A study of Western culture emphasizing Egyptian, Mesopotamian, Greek, Roman, Judeo-Christian, Medieval European, and Medieval West African cultures.

HUM 2230 Historical Survey II (3) A continuation of HUM 2211. Includes Renaissance, Baroque, Enlightenment and Romantic cultures and a detailed study of the 20th century with reference to African and African-American cultures.

HUM 3255 Humanities: Modern and Post-Modern Culture Explores the art, architecture, music, philosophy, literature and religion of modern and post-modern culture, within historical context.

HUM 3214 Humanities: Early Civilizations and the Classical World Explores the art, architecture, music, philosophy, literature and religion of prehistoric cultures, and ancient civilizations (Mesopotamia and Egypt) within a historical context.

HUM 3217 Humanities: Judeo-Christian and Medieval Cultures Explores the origins of the Judeo-Christian world view and its continuation in Medieval Europe within a historical context. Buddhism, Islam, Byzantine and West African world views will be included, as will the arts of each.

HUM 3237 Humanities: Counter Reformation Baroque and Enlightenment Explores the art, architecture, music, philosophy, literature and religion of the Catholic Counter-Reformation in Europe, the Baroque style, the scientific revolution and enlightenment, and the Neoclassicism in

a historical context.

HUM 3244 Humanities: 19th Century Revolutions: Historic and Artistic Explores the artistic styles of Romanticism, Realism, Impressionism and Post-Impressionism in a historical context, as well as the efforts of oppressed groups (workers, women, slaves) to free themselves.

HUM 3238 Humanities: The European Renaissance & Reformation Explores the art, architecture, music, philosophy, literature and religion of Renaissance and Reformation Europe.

HUM 3401 Asian Humanities An overview of Chinese and Japanese Humanities from the prehistoric origin to the modern period.

HUM 3421 African Americans in Film Presents, through film screenings and readings, the work of films which feature Black people which will be approached from a number of critical perspectives.

HUM 3425 African Humanities Introduces the art, music and dance in the history of key classical civilizations south of the Sahara-Mali, Asante, Dahomey, Yoruba and Kongo- and their impact on the rise of New World art, music and dance.

HUM 3546 Caribbean Literature and Popular Culture Introduces students to the modern literary works and cultural history of the English-speaking Caribbean.

HUM 3930 Special Topics in the Humanities (3) Course content varies semester to semester.

ORI 2000 Oral Interpretation (3) Theory and methods in vocal delivery of types of literature, prose and poetry; dramatic, and historical literature platform presentations.

ORI 4310 Readers Theatre (3) Theory and techniques of adapting various types of literature for performance.

PHH 2102 Ancient and Medieval Philosophy (3) First course in history of philosophy sequence. From classical Greek philosophy through the philosophy of the Middle Ages.

PHH 3400 Modern Philosophy (3) Second course in history of philosophy sequence. Major movements of modern period: existentialism, ordinary language philosophy.

PHH 3600 Contemporary Philosophy an introduction to the methods of contemporary philosophy, namely the Positivist and Linguistic Analysis methods, which will be applied to beliefs in the sciences, education, religion and social theories.

PHI 1100 Critical Inquiry (3) Theory and techniques for creative and critical thinking, applying methods developed in science to decision making.

PHI 2010 Introduction to Philosophy (3) An examination of rival views on morality, economic justice, political philosophy, existence of God, and theories of knowledge.

PHI 2101 Introduction to Logic (3) General introduction which emphasizes developing ability to think and communicate clearly and consistently; nature and methods of formal and informal logic.

PHI 3601 Honors Ethics (3) An examination of ethical issues in various areas, including health sciences, business and personal life.

PHI 3930 Special Topics in Philosophy

PHI 4300 Theory of Knowledge (3) Prereq: PHI 2101. Structure of knowledge including both classical positions and recent developments.

PHI 4670 Ethical Theory (3) Prereq: 3 hrs. in philosophy or religion. Critical examination of classical system of ethical thought and consideration of recent ethical theory.

PHI 4800 Aesthetics (3) Aesthetic experience and philosophy of art and criticism. Findings related to painting, music, drama and literature. For advanced students.

PHI 4905 Selected Readings (3) Selected philosophers and philosophical movements. For advanced majors only.

PHI 4906 Directed Individual Study (3) Prereq: Permission of department chair and a supervising professor.

PHM 3120 Contemporary Black Social Philosophy (3) Critical analysis of roots and nature of black movements-specifically, Black Nationalism-as a world phenomenon, rather than as a movement limited to the United States.

PHM 4100 Social Philosophy (3) Prereq: 3 hrs. in philosophy. Problems of social and political philosophy and examination of major theoretical models.

REL 2000 Introduction to Religion (3) Study of the origins, functions, techniques, and experience of religion in a cross-cultural perspective.

REL 2135 Black Religion in America (3) A survey of Black religious history in the U.S., with focus on the ideas, movements, issues, leadership, and artistic/cultural values which have influenced the religious experience and institutions of Black Americans.

REL 2210 Introduction to the Hebrew Scriptures (3) Survey of the history, literature and teachings of the ancient Hebrew people.

REL 2224 Interpreting Prophecy in the Hebrew Scriptures (3) Emphasis on biographical data, historical settings, and ethical/religious themes in the prophetic literature of the ancient Hebrews.

REL 2240 Introduction to the Christian Scriptures (3) The development of religion in reference to the religio-ethical teachings, socio-cultural context, and literature of the Christian Scriptures.

REL 2320 Western World Religions (3) Religious traditions which have been influential in the West in characterized by western religious motifs. Study of major doctrines and historical development.

REL 3130 Religion in American Culture (3) The religious institutions, major religious movements, black religious experience, and unique features of the temperament of American religion.

REL 3145 Women in Religion (3) Historical understanding of the religious involvement of women in world religion over the past 2000 years. Analyzes the work of social theorists toward explaining cross-cultural patterns of gender meanings.

REL 3156 Religion, Personality and Race (3) Typological and structural relationships between religion, personality and race. An analysis of the personal religious lifestyles of prominent persons from different cultures.

REL 3312 Eastern World Religions (3) Four major religions: Hinduism and Buddhism of India, and Confucianism and Taoism of China.

REL 3383 Caribbean Religion and Culture History of the African people of Cuba, Jamaica, Haiti and Trinidad. Study of the religious and philosophical beliefs of these nations exploring the music, art, dance, film and poetry.

REL 4440 Contemporary Religious Thought (3) Prereq: REL 2000, REL 2210 or REL 2240. Important theological movements and their leaders since 1950: Secular Theology, Theology of Hope, Black Theology, Vatican II and Liberation Theology.

REL 4460 Religious Belief and Philosophy (3) Prereq: REL 2000, REL 2210 or REL 2240. Examines philosophical traditions of assessing rational plausibility in Western and Eastern religions. Includes attention toward contemporary race-critical and feminist philosophies.

REL 4900 Selected Readings (3) Selected thinkers and problems in religion. For advanced religion majors.

REL 4905 Directed Individual Study (1-3) For advanced religion majors.

THE 2300 Critical Analysis of Drama (3) Study of selected plays and playwrights. Analysis and criticism.

THE 2820 Creative Dramatics for Children (3) Organization and production of creative drama; selection of types of literature and methods of presentation. Emphasis on puppetry, role-playing and emotional self-exploration.

THE 2000 Introduction to Theatre (3) Basic theories and techniques of theatre from writing and interpreting scripts to planning and staging productions.

THE 2931 Special Topics in Theatre: Design & Technology (3) A lecture, seminar or studio session that explores and analyzes selected topics of current interest in Theatre Design and Theatre Technology. May be repeated with change of content up to nine (9) credits.

THE 2932 Special Topics in Theatre: Management (3) Provides an in-depth look into a variety of specialized topics which are central to Theatre and Production Management. May be repeated with change of content up to nine (9) credits.

THE 3112 Theatre History I (3) From classical Greece through the Elizabethan period; physical theatre structures, production practices, plays and playwrights from ancient Greece to the Renaissance.

THE 3113 Theatre History II (3) From the Renaissance to the present; physical theatre structures, production practices, plays and playwrights from the Renaissance to the modern period.

THE 3235 Contemporary Black Theatre (3) Black theatre in the U.S. with emphasis on the contribution of Black Americans to the community and to the stage, from 1950 to the present.

THE 3930 Special Topics in Theatre: Performance (3) A lecture, seminar or studio session that explores and analyzes selected topics of current interest in Theatre Performance. May be repeated with change of content up to nine (9) credits.

THE 4760 Methods of Teaching in Public Schools (3) Prereq: EDS 3211, 3235 and junior standing. Planning and methodology for the theatre and drama instruction; play selection, casting, directing, production techniques and management.

THE 4905 Independent Study - Theatre History (1-4) Prereq: Permission of instructor.

THE 4906 Independent Study - Costume (1-4) Prereq: Permission of instructor.

THE 4907 Independent Study - Design (1-4) Prereq: Permission of instructor.

THE 4908 Senior Project (3) Advanced work of specific interest to the student. Project must be submitted in written form to instructor prior to registration for course. Projects may be in research or performance.

THE 4912 Independent Study - Lighting (1-3) Prereq: Permission of the instructor.

THE 4942 Arts/Theatre Management Practicum (1-3) Prereq: Senior standing and completion of all foundation courses. Permission of supervising instructor. Practical experience under the guidance of a practitioner, supervising instructor, and cooperative education representative.

TPA 2210 Introduction to Production Techniques (3) Stagecraft and elements of technical production equipment, construction, backstage organization and management; introduction to principles of design.

TPA 2290 Theatre Production Laboratory - Performance (1-3).

TPA 3200 Theatre Production Laboratory - Technical Production (1-3).

TPA 3230 Introduction to Costume and Wardrobe (3) Sewing, draping and pattern-making, wardrobe maintenance and management. Crew assignment required.

TPA 4060 Concepts of Scenic and Lighting Design (3) Principles of design for stage script analysis, concept development, drafting and drawing techniques, and model construction.

TPA 4230 Costume, Wardrobe Techniques, and Stage Make-Up (3) Prereq: TPA 2210 or consent of instructor. Techniques for theatrical costume design, construction, organization and supervising of costume wardrobe crew work. Responsible position in a major production required.

TPA 4400 Theatre Management (3) Principles and practices of theatre administration and management with specific regard to personnel, public relations, audience development, box office and house management, publicity and finance.

TPP 1700 Voice and Diction for the Theatre (2) Voice production, pronunciation and articulation. May be repeated three times, depending on progress made. May be taken on an S/U basis. Laboratory required.

TPP 2110 Elements of Acting (3) Prereq: TPP 2120. Emphasis on play structure analysis, character development, and elementary ensemble playing.

TPP 2111 Advanced Acting (3) Prereq: TPP 1700 and TPP 2120. Problems of styles and techniques.

TPP 2120 Improvisations for the Theatre (2) Theatre games and imaginative use of the body. Self-awareness and group interaction.

TPP 2190L Introduction to Creative Work: Drama Production (1) Finding uses for creative talents in various fields of theatre. May be repeated up to three times.

TPP 2500 Basic Principles of Movement (1) Prereq: TPP 1700 and TPP 2120. Fundamentals of theatre movement and basic principles of gesture and pantomime.

TPP 3310 Fundamentals of Play Directing (3) Prereq: THE 2300 or consent of instructor. Fundamental principles of directing a play; script analysis. Students will direct scenes of various types and styles; attendance at evening rehearsals required.

DEPARTMENT OF MILITARY SCIENCE (ARMY ROTC)

Florida A & M University maintains a senior division unit of the Reserve Officer Training Corps. The purpose is to develop men and women for positions of responsibility as officers in the U. S. Army, active and reserve components.

Basic Military Instruction - This component prepares a student for the advanced course. The basic course consists of freshman (MS I) and sophomore (MS II) level courses designed to develop basic military skills and fundamentals of leadership.

For students not taking military science during their freshman year, both MS I and MS II courses maybe attend 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 Leaders Development Assessment Course (LDAC)-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 32 days leadership development assessment course (LDAC). 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 for their 32 days LDAC. Successful LDAC completion, combined with the bachelor's degree, qualifies the student for commissioning as second lieutenants in the U. S. Army, Army Reserve, or Army National Guard.

Furnished Items-All uniforms, textbooks and equipment for the ROTC courses are furnished by the Army.

Commissions-Students who receive commissions will serve as officers either on active duty, 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 Arts and Sciences. Requests for awarding the minor in military science should be made in writing to the PMS.

Faculty

Professors: LTC Jeffrey N. Williams

Associate Professors: Major Andreas Taylor, Captain Michael Middleton, Captain Okera Anyabwile, Captain (Ret.) Thomas Dye, MSG Terrance Milton, MSG Thomas Myers

Basic Course

| Freshman Year | Sem. Hrs. |
|--------------------------------------------------------|-----------|
| MSL 1001 Foundation of Officership | .2 |
| MSL 1002 Basic Leadership | .2 |
| MSL 1001L Leadership Lab (fall semester) | .0 |
| MSL 1002L Basic Leadership Lab (spring semester) | .0 |

Sophomore year

| | |
|--------------------------------------------------------|----|
| MSL 2101 Individual Leadership Studies | .2 |
| MSL 2102 Leadership and Teamwork | .2 |
| MSL 1001L Leadership Lab (fall semester) | .0 |
| MSL 1002L Basic Leadership Lab (spring semester) | .0 |

Advanced Course

Junior Year

| | |
|--------------------------------------------------------------|---|
| MSL 3201 Leadership and Problem Solving | 3 |
| MSL 3202 Leadership and Ethics | 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 | 3 |

Senior Year

| | |
|-----------------------------------------------------|---|
| MSL 4301 Leadership and Management | 3 |
| MSL 4302 Officership | 3 |
| MSL 4301L Leadership and Management (fall semester) | 1 |
| MSL 4302L Officership Lab (spring semester) | 1 |

* Must complete prior to commissioning (PME requirements)

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) as well as 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 15th of November, their senior year of high school. Three-year scholarships are processed at the college level and are submitted no later than the 15th of November. For further information, contact the Professor of Military Science, Army ROTC, Howard Hall.

Course Descriptions

MSL 1001 Foundations of Officership (1) Examines the unique duties and responsibilities of officers, organization and role of the Army, review skills pertaining to fitness and communication, analyze Army values and expected ethical behavior.

MSL 1002 Basic Leadership (2) Presents fundamental leadership concepts and doctrine, practice basic skills that underline effective problem solving, examine the officer experience.

MSL Leadership Labs (0-1) 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 1900 Fundamentals of Marksmanship (1) Develops hands on knowledge of safe operations of rifles and fire arms. Use computer generated simulations to safely use a rifle to qualify with critical thinking scenarios.

MSL 2101 Individual Leadership Studies (2) Develops knowledge of self, builds self-confidence, and individual leadership skills, develop problem solving and critical thinking skills, apply communication, feedback, and conflict resolution skills.

MSL 2102 Leadership and Teamwork (2) Focuses on self-development guided by knowledge of self and group processes, challenges current beliefs, knowledge, and skills.

MSL 3201 Leadership and Problem Solving (3) Examines skills that underline effective problem solving, analyze military missions and plan military operations, and execute 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 processes, analyze counseling responsibilities and methods, and apply leadership and problem solving principles to a com-

plex case study.

MSL 4302 Officership (3) Capstone course to explore topics relevant to second lieutenants entering the Army, describes legal aspects 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.

MSL 4901 Directive Reading-Individual Studies (1-4) Supervised reading and independent study in the United States Military History and writing requirements. Prerequisite: Permission of the instructor.

AIR FORCE ROTC

The Air Force ROTC (AFROTC) program is available to men and women at FAMU through the FAMU-FSU Cooperative Program. The program is conducted by the Department of Aerospace Studies at The Florida State University. Concurrently with earning a baccalaureate or graduate degree, the program culminates in a commission as an active duty United States Air Force Second Lieutenant. Cadets in the program attend one weekly academic course, a weekly leadership laboratory, and twice weekly physical fitness sessions each semester. Scholarships paying full FAMU tuition and fees, allowances for textbooks, and a monthly stipend from \$250 to \$400 are available on a competitive basis. Four-year scholarships must be applied for by December 1st in the year prior to enrollment as a freshman. Four year scholarship recipients may also receive room and board funds from FAMU. Other scholarships are available to competitively-selected cadets after enrolling in the AFROTC program. AFROTC graduates incur an obligated active duty tour of four years for nonflyers, eight years for navigators, and ten years for pilots.

The department offers four-year, two-year, and one-year programs, each with its own requirements and advantages. The four-year program provides on-campus study during the freshman through senior years. The two-year program allows a limited number of transfer and other high-quality students with two or more academic years remaining, either in undergraduate or graduate status, to obtain an Air Force commission. The one-year college program is very limited, designed for students who meet particularly critical needs of the Air Force. The aerospace studies curriculum is divided into two phases.

General Military Course -- The first two years of the program (GMC) are open to any student at FAMU by registering for AFR 1101/02 (Freshman) or AFR 2130/40 (Sophomore) as well as AFR 2233L through the interinstitutional registration procedures. All courses are held on the FSU campus. No commitment for military service is required and students can learn about the Air Force while deciding if they want to pursue a commission. Uniforms and textbooks are provided free of charge. The courses deal with Air Force structure and the development of air power. They strengthen interest in becoming a professional Air Force officer, develop knowledge of world military forces, and enable the student to understand how the U.S. Air Force supports national objectives and policies. Class enrollment size is limited and priority will be given to FAMU/FSU/TCC students enrolled in the AFROTC program.

Professional Officer Course -- Admission to the final two years of AFROTC (POC) is on a competitive basis and requires full-time attendance at FAMU. Completion of the POC and receipt of a college degree result in a commission and entry onto active duty as a U.S. Air Force Second Lieutenant. Application for the POC must be made by the end of the sophomore year. The coursework is designed to prepare college students to serve as active duty Air Force officers. The curriculum stresses national security in contemporary American society, leadership, management, communicative skills and professionalism.

Field Training -- During the summer prior to entering the POC, or by exception during the summer following entry to the POC, cadets attend a four or six week field training course. This course is conducted at an active Air Force base, and includes physical conditioning, military academics, career training, leadership training and evaluation. Students attending these courses receive pay for the encampment plus travel allowances.

Special Activities -- Special activities provide for development of teamwork and esprit de corps. Included are the national honorary organizations Arnold Air Society and Silver Wings, and the FSU/FAMU/TCC

AFROTC Silver Eagles Drill Team, an armed precision drill unit. Cadets who desire to fly can participate in a flying program with the Florida Civil Air Patrol. Cadets may also participate in various summer incentive programs, including parachute freefall, survival training, flight orientation, and Air Force base orientation visits.

Admission Requirements -- To compete for entry into the POC, or to compete for a scholarship, applicants must pass the following minimum admission requirements.

1. Pass the Air Force Officer Qualifying Test
2. Pass a military physical examination
3. Pass the three-event physical fitness test
4. Pass height/weight standards
5. Have a 2.5 GPA or higher

Cadets who are evaluating the program without any obligation or commitment must obtain a certified sports medical physical in order to participate in the weekly leadership laboratory and the twice weekly physical fitness sessions.

Full details on this program may be obtained by contacting the Department of Aerospace Studies (AFROTC) located on the FSU campus in the Harpe-Johnson Hall, Room 212; telephone (850) 644-3461; or visit their website at www.fsu.edu/~rotc.

Course Descriptions

AFR 1101 Foundations of the USAF I (1). A study of Air Force structure, traditions, customs and courtesies, and team building.

AFR 1102 Foundations of the USAF II (1). A continuation of AFR 1101.

AFR 2130 Development of Airpower I (1). A study of the history and evolution of airpower, concepts and doctrine.

AFR 2140 Development of Airpower II (1). A continuation of AFR 2130.

AFR 3201 Air Force Management (3). This course instructs general managerial and leadership concepts and theories, and relates them to the Air Force junior officer.

AFR 3202 Air Force Junior Officer Leadership (3). A continuation of the study of leadership begun in AFR 3201.

AFR 4211 U.S. Defense Policy and Strategy Formulation (3). An examination of the need for national security, analysis of the evolution and formulation of American defense strategy and policy, the methods for managing conflicts, and fundamentals of US Air Force officer duty.

AFR 4212 Preparation for Active Duty (3). A continuation of AFR 4211.

AFR 2233L AFROTC Leadership Lab (0). (S/U grade only) A core requisite with all AFR courses. It is the application of personal leadership skills, demonstration of command, effective communication, individual leadership instruction, physical fitness training, and knowledge of US Air Force customs and courtesies.

New Picture

College of Education

The College of Education can be considered the *cornerstone college* of Florida A&M University; it was the first and only college, department or major within the university at its inception in 1887. The College of Education (COE) currently retains its position of notoriety associated with superior accomplishment and acclaim to this university and within the nation. The COE remains among the top producers of African-American Teachers in the United States. The primary mission of the college is the production of exemplary 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 five (5) undergraduate and graduate degree granting departments: Elementary Education; Secondary Education and Foundations; Health, Physical Education and Recreation; Business and Technology Education; and the Department of Educational Leadership and Human Services. The College of Education in combination with the College of Arts and Sciences, known as the Professional Education Unit (PEU), provide the relevant curriculum for elementary, secondary, and graduate education programs supporting 19 undergraduate degrees and 18 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.

Administration

Dean: Gennifer C. Bell, Ed.D.

Associate Dean for Curriculum & Instruction: E. Newton Jackson Jr., Ph.D.

Associate Dean for Program Approval: Gloria Poole, Ph.D.

A 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; and (3) participate in national and international affairs.

I. Communication [6]*

ENC 1101, ENC 1102 Freshmen Communication Skills 1 & II or
ENC 1121, ENC 1122 Honors Freshman Composition 1 & II

II. Mathematics [6]*

Two (2) mathematics courses at or above College Algebra from the approved course list.

III. Natural Sciences [8]*

Any two (2) courses in Biology, Chemistry or Physics, each with a laboratory, chosen 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 [3-4]*

Choose SPC 2600 Public Speaking or HSC 1100 Health for Modern Living or from any of the approved Mathematics, Natural Sciences, Social Sciences and Humanities lists.

Total 35-36

* A minimum grade of "C" is required.

A Planned Sequence in Professional Education -This sequence is designed to: (1) develop the student's skills in recognizing growth and development; (2) provide opportunities for students to diagnose educational problems confronting the community, state, and nation; (3) 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. Specific programs may have additional requirements. The generalized professional core is as follows:

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. They also are incorporated into Florida community college programs for aspiring education majors.

| | |
|-----------------------------------------------------------|---|
| EDF 1005 Introduction to Education | 3 |
| *EDG 2701 Teaching Diverse Populations | 3 |
| EME 2040 Introduction of Educational Technology | 3 |

Professional Education Core Courses

| | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| *EDG 3004 Overview and Orientation to Teaching | 1 |
| *DEP 2004 Human Growth and Development or EDP 2002 Educational Psychology | 3 |
| ESE 3341 Theory and Practice of Teaching in Secondary Schools or EDE 3940 Field Clinical II: Theory and Practice of Teaching/Instruction Objectives and Materials (Elementary) | 3 |
| EDF 3430 Measurement and Evaluation of Educational Growth | 3 |
| EDE 4940 Field Clinical III: Professional Theory and Legal Aspects/Role of the Teacher | 3 |
| or ESE 4930 Instructional Seminar (Secondary majors) | 3 |
| or PET 4401 Physical Education | 3 |
| XXX XXXX Methods of Teaching (respective content areas) | 3 |
| Student Teaching | 6-12 |
| RED 3333 Teaching Reading the Content Area | 3 |
| TSL 3371 ESOL Theory & Practice | 3 |
| TSL 4345 Methods of Teaching ESOL for Elementary Education majors | 3 |
| TSL 4324 ESOL Survey of Strategies for Learning for Secondary Schools | 3 |

*Background check with the Leon County School District is required. The cost is approximately \$61.

**Students must purchase the Live Text Electronic Portfolio. The cost is approximately \$91.

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. Liability insurance must be purchased for 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.

Admissions to Professional Teacher Education Programs

Criteria for Admission to Teacher Education

The College of Education regulates and 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 Teacher Preparation. 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 formerly 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 completed a pre-admission interview by the College of Education Admissions Committee;
- Have successfully passed a criminal background investigation.
- Have successfully passed all parts of the FTCE - General Knowledge Exam or CLAST (passing scores must be made before July 1, 2002)
- Students are fully-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:

- Students at Florida A&M University must complete the Application for Admission to the Professional Teacher Education Program and file the same with the Center for Teacher Preparation for monitoring purposes.
- Students transferring from a community or junior college or another four-year institution with an AA degree or 60 or more hours should apply the first semester they are enrolled at Florida A&M University.
- Students who change their majors to teacher education after enrolling in other programs at Florida A&M University should apply at the same time they request a change of major.

Students will be informed each semester as to their status towards admission into professional teacher education through the Center for Teacher Preparation.

Criteria for Admission to 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:

- Admission to teacher education (for students seeking degrees from Florida A&M University and for students seeking certification only);
- Completing all courses with the exception of internship;
- File a "Pre-Application for Student Teaching," in the Center for Teacher Preparation;
- File a "Student Teaching Application," in the Office of Student Teaching;
- Successful clearance on a criminal background investigation;
- Pass all subtests of the Florida Teacher Certification Exam (semester before student teaching);
- Own the educational software to complete an electronic portfolio (as prescribed by the College of Education);
- Gain approval from the chair of the department to intern, the semes-

ter prior to 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.

Admission to teacher education and student teaching are administered through the College of Education's Office of Student Services. Student teaching is required of all teacher education majors who seek completion of a state approved program.

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.
- Students applying for admission to a teacher education program should reveal all criminal history records including sealed or expunged records. Applicants approved to student teach will be required to pass a criminal background investigation prior to student teaching.

Graduation Requirements

Students seeking program completion from FAMU's state approved teacher education programs must successfully complete the following requirements:

- Admission to the Professional Teacher Education Program;
- All course work with the required cumulative GPA of 2.50;
- Student teaching experience;
- A portfolio which documents mastery of the Twelve Florida Accomplished Practices;
- Pass all subtests of the Florida Teacher Certification Examination (semester before student teaching);
- External Evaluation of satisfactory teaching ability; and
- Internal Evaluation of satisfactory teaching ability.

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 pre-school.

The curriculum is organized to provide approximately two years of general education. The last two years consist of professional and specialized preparation. Provisions are made for some options.

Faculty

Professors: Lemons, Robert; Mercer, Walter; Smith, Marian

Associate Professors: Bauman, Gail; Dixon, Gwendolyn; Fontaine, Nancy; Newell, Mary; Ansley, Thyria

Assistant Professor: Thomas, Patty Ball

Instructors: Duval, Elsie; Washington, Almeta

Elementary Education Program of Study

| Freshman Year | Sem. Hrs. |
|------------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| ENC 1101 Freshman Communication Skills I | 3 |
| MAC 1105 College Algebra | 3 |
| HSC 1100 Health for Modern Living | 3 |
| GLY 2001 Earth & Space Science | 3 |
| HUM 2211 Historical Survey I | 3 |
| <hr/> | |
| | 15 |

Spring Semester

ENC 1102 Freshman Communicative Skills II 3
 MAC 1114 Algebra & Trig. 3
 PSC 1121 Physical Science w/Lab 4
 AMH 2010 American History I/II or
 AMH 2020 Introduction to Literature I/II 3
 LIT 2110 or 2120; SYG 2000 Sociology 3
 16

Sophomore Year

Fall Semester

DEP 2004 Human Growth and Development 3
 SPC 2600 Public Speaking 3
 EME 2040 Introduction to Educational Technology 3
 MTG 2206 Geometry 3
 EDF 2005 Introduction to Education w/ Field Exp. 3
 15

Spring Semester

BSC 1005 Biological Science w/lab 4
 AMH 2091 Overview & Introduction to African American History ... 3
 *EDG 2701 Teaching Diverse Populations w/Field Exp. 3
 EDE 2940 Field Clinical I: Orientation to Teaching Young Children ... 2
 ISS 2102 Interdisciplinary Social Sciences 3
 15

Junior Year

Fall Semester

MUE 3210 Methods of Teaching Music in Elementary 3
 EDE 3430 Measurement and Evaluation of Educational Growth 3
 *TSL 3080 Intro. to ESOL Theories and Practices 3
 **LAE 3414 Language Arts for Elementary Schools 3
 *RED 3013 Foundation of Teaching Reading 3
 EDE 3940 Field Clinical II - Theory & Practice of Teaching Instruction ... 3
 18

Spring Semester

ARE 3313 Public School Art in Elementary Schools 3
 TSL 4345 Methods of Teaching ESOL 3
 RED 4519 Recognizing & Diagnosing Growth 3
 MAE 3310 Mathematics for Elementary Schools 3
 *LAE 3314 Children's Literature 3
 SCE 3811 Teaching Science in Elementary Schools 3
 *EDE 3921 Professional Education Forum & Colloquium 0
 18

Senior Year

Fall Semester

RED 3333 Reading in the Content Areas 3
 EEX 3011 Introduction to Education of Exceptional Children 3
 EEX 4601 Behavioral Management* 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
 18

Spring Semester

EDE 4943 Student Teaching in Elementary Schools 6-12
 12

Total Semester Hours 121-127

* Field Experiences Required

Course Descriptions

EDE 2940 Field Clinical I Orientation to Teaching Young Children (2)

The purpose of this course is to facilitate successful entry into the teacher education program. It examines pedagogy and professional knowledge, which promotes continuous professional growth; presents 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 to identify sound educational practices; to 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 generic teaching competencies correlated to the Florida Department of Education's Educational Standards Commission Twelve Accomplished Practices and selected ESOL standards. This course also prepares pre-service teachers to teach to those students who are gifted, academically challenge, experiencing language acquisitions and/or economically deprived socially and culturally.

EDE 3921 Professional Education Forum & Colloquium (0)

This is a no credit course taken in the second semester of the junior year to expose candidates to the support system outlined for their success. This course is also available for initial certification candidates at the master's level.

EDE 4031 Multicultural Education for Elementary Schools (3)

Designed to prepare teachers to work effectively in elementary schools having culturally diverse populations. Emphasis on strategies and materials which appeal to varied backgrounds of elementary students.

EDE 4930 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 Performance Measurement System. 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 different.

EDE 4943 Student Teaching for Elementary School (6-12)

Completion of basic education and professional courses and at least four-fifths of all course requirements under the student's area of specialization. Experience in an elementary school, grades K-6, under guidance of the principal, or his appointed representative, a supervising teacher, and a University supervising teacher. Grade is contingent on passing the Florida Teacher Certification Examination.

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.

EEC 4943 Observation and Participation in Early Childhood Education (3)

Prereq: EEC 3301. Practicum of experiences in a public school kindergarten program. Provides realistic situations in which students utilize the theories and techniques encountered in previous courses. Supervision under certified teachers.

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: ELD 4301. 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.

EEX 4018 Adaptations for Children with Special Needs (3) Symptoms indicative of potential learning problems, screening of children, selecting and utilization of appropriate diagnostic and referral procedures. Prescriptive program planning. Special emphasis on multicultural processes. Required participation in selected activities.

LAE 3414 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 3314 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-7.

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 3333 Reading in the Content (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 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 LEP 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 LEP. 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 LEP. **Prerequisite** TSL 3371

Pre-K/Primary Education (Age Three through Eight) Course of Study

In accordance with national and state trends, Florida A&M University's planned Pre-school and Pre-kindergarten/Primary Education Program provides knowledge and builds skills for individuals who will work or presently do work with young children (hereby defined as birth through age eight, in not only the traditional public school setting, but also home-based, child care, hospital and other settings.) The overall mission of the program is to prepare university students and those individuals already in the work force to more effectively serve infants, toddlers, preschoolers, and young children through developmentally-appropriate assessment and prescriptive curriculum planning and implementation.

Freshman Year

Fall Semester

| | |
|-------------------------------------------|-----------|
| ENC 1101 Freshman Communications Skills I | 3 |
| SPC 2600 Public Speaking | 3 |
| MAC 1105 College Algebra | 3 |
| GLY 2001 Intro. to Earth & Space Science | 3 |
| HUM 2211 Historical Survey | 3 |
| | <u>15</u> |

Spring Semester

| | |
|-------------------------------------------------|-----------|
| ENC 1102 Freshman Communication Skills II | 3 |
| PSC 1121 Physical Science w/Lab | 4 |
| MAC 1114 College Trig or MGF 1106 Lib Arts Math | 3 |
| AMH 2010 U.S. History 1492-1864 | 3 |
| SYG 2000 Introduction to Sociology | 3 |
| | <u>15</u> |

Sophomore Year

Fall Semester

| | |
|-----------------------------------------------|-----------|
| LIT 2110 Intro. to Literature I | 3 |
| MTG 2206 College Geometry | 3 |
| AMH 2091 Overview of African-American History | 3 |
| **EDF 2005 Introduction to Education | 3 |
| BSC 1005 Biological Science w/Lab | 4 |
| | <u>16</u> |

Spring Semester

| | |
|------------------------------------------|-----------|
| EDE 2940 Field Clinical I | 3 |
| PHI 2010 Intro. to Philosophy | 3 |
| EME 2040 Intro. to Education Technology | 3 |
| **EEC 3731 Health, Nutrition & Safety | 3 |
| **EDG 2701 Teach Diverse Population | 3 |
| **EEC 3402 Family Structures & Practices | 3 |
| | <u>18</u> |

Junior Year

Fall Semester

| | |
|-------------------------------------------------------|----|
| **EEC 3003 Foundations of Pre-K/Primary | 3 |
| **EEX 3013 Special Needs in Early Childhood Education | 3 |
| **TSL 3371 Introduction to ESOL: Theories & Practice | 3 |
| **EEC 3941 Field Clinical II: E.C. Colloquium | .0 |
| **EEC 3700 Child Development | 3 |

**RED 3013 Foundations of Reading 3
 **EEC 4708 DAP II: Language Arts. 3
 18

Spring Semester

**RED 4519 Rec./Diag. Growth in Reading 3
 **EEX 4018 Adaptations for Children with Special Needs 3
 **EEC 3212 DAP II: Math and Technology with Young Children 3
 **EEC 3210 DAP II: Science with Young Children 3
 **TSL 4345 Methods of Teaching ESOL 3
 **EEC 4303 DAP II: Art, Music, Movement, Drama 3
 **EDE 3921 Professional Education Colloquium 0
 18

(Summer Semester Sophomore Year: **EEC 3404 Family Structure & Practices (3), and **DAP 9-HR Block I Infants/Toddlers: EEC 3707, EEC 3311, EEC 3709)

Senior Year

Fall Semester

**EEC 3524 Adm./Management of ECE Programs 3
 **EEC 3604 Guiding and Managing Behavior 3
 **SSE 3215 DAP II: Social Studies with Young Children 3
 **EEC 3613 Diagnosis, Assessment & Evaluation 3
 **EDE 4940 Field Clinical III- Professional Theory and Legal
 Aspects/Role of the Teacher 3
 15

Spring Semester

**EDE 4943 Field Clinical IV: Student Teaching 6-12
 6-12

Total Hours Required 134

Course Descriptions

Courses: All courses will include integrated practicum experiences in diverse settings working with children birth through age eight.

****EEC 3003 Foundations of Pre-K/Primary Education (3)** The course places emphasis 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 in early childhood settings.

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 Structures 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 Partnership 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 agency serving children.

***EEC 3604 Guiding and Managing Behavior in Early Childhood (3)** Students will become familiar with prevention techniques for dealing with challenging and inappropriate behaviors, maintaining positive learning environments to ensure 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)** The 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 Early Childhood Education. Field experience required.

****EEX 4018 Adaptations of 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, interpreting evaluation results, developing classroom assessment tools; legal requirements for recordkeeping, use of technology and diversity considerations.

***EEC 4703 Bio-Medical Issues of Children with Special Needs (3)** The purpose of this course is to provide participants with knowledge of medical and developmental interventions for infants prematurely, with other perinatal risk factors, with disabilities and/or with complex health needs. The characteristics and needs of babies prenatally exposed to drugs, disease and other risk factors, and who are dependent on technology or have chronic health impairments will be included. Current trends in traditional and nontraditional intervention will be discussed. Understanding of legal and confidential considerations, maintaining and interpreting records. Ten (10) hours of field experience required.

Developmentally Appropriate Practices Block I: Ages Birth-Four

***EEC 3311 Developmentally Appropriate Practices I: Art, Drama (3)**

***EEC 3707 Developmentally Appropriate Practices I: Language Arts (certification courses for birth to four) (3)**

***EEC 3709 Developmentally Appropriate Practice I: Art, Music, Movement, Drama, Social Studies (3)**

***EEC 3212 Math and Technology with Young Children: DAP II (3)** This course is based on the cognitive-constructive view of the National Council of Teachers of Mathematics standards that include: using mathematics for problem solving, communication, and reasoning, recognizing mathematical connections, and teaching concepts of geometry, measurement, fractions, patterns and computation. In addition, students will be exposed to the use of technology in the classroom. Students will gain an understanding of how the development of cognitive skills in children age three through eight can be enhanced through effective program planning, implementation, and assessment in natural or formal settings. Students also apply information learned through practical field experiences in settings with children ages 3-8.

***EEC 3210 Science with Young Children: DAP II (3)** This course stresses the basic concepts of learning biological, physical, and environ-

mental science with emphasis on applying these skills to teaching at the early childhood level. Students will gain an understanding of how the development of cognitive skills in 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 3-8.

EEC 3941 Field Clinical II: Early Childhood Colloquium (0) The purpose of this course is to assist the student in successful entry into the teacher education program. It examines pedagogy and professional knowledge with early childhood research-based best practices. This course is designed to provide students with an intensive field experience in a public school pre-kindergarten through primary level classroom. Students will plan and facilitate early reading and language arts lesson plans and activities with young children. In addition, students will be expected to apply knowledge of child development theory, developmental milestones, and special and diverse needs of children through observation, and one to one and small group instruction. Students are also required to actively participate in discussions back on the main campus in regard to their field experiences and to develop an electronic portfolio that represents their pre-professional level work. Students will be supervised by early childhood education faculty and directed by classroom teachers with experience.

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 to provide assistance. Emphasis to include biomedical, legal and diversity considerations. Required participation in selected field experiences.

***EEC 4708 DAP II: 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 II: 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 development of 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 3 - 8.

***EDE 4943 Field Clinical IV: Student Teaching** (6) 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 law that affects them—laws established by state and federal statutes, constitutions, and court decisions.

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.

SSS 3215 DAP II: Social Studies for Young Children 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

serves 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 LEP 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 LEP. 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 LEP. **Prerequisite: TSL 3080**

DEPARTMENT OF SECONDARY EDUCATION AND FOUNDATIONS

The Department of Secondary Education and Foundations does not offer a major at the undergraduate level; undergraduate teacher education programs at the secondary school level are offered through the appropriate departments (primarily in the College of Arts and Sciences) in the respective content areas. State-approved teacher education programs at the secondary level include art, biology, chemistry, economics, English, history, mathematics, music, physics, political science, and social sciences. The student should consult the respective department for additional information.

The Department has a state approved professional option Teacher (PTO) Program that provides an opportunity for students majoring in certain non-education degree programs to earn teacher certification.

Some departments offer substitutions for selected courses listed below. In all cases, the departmental curriculum guide should be followed.

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 head for more up-to-date information as it becomes available.

Faculty

Associate Professors: Ellis, Rufus; Ervin, Charles (Chair); Kelley, Bernadette; Wallace Renee
Instructor: Bailey, Kelley

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. They also are incorporated into Florida community college programs for aspiring education majors.

| | Sem. Hrs. |
|-----------------------------------------------------------|-----------|
| EDF 1005 Introduction to Education | 3 |
| *EDG 2701 Teaching Diverse Populations | 3 |
| EME 2040 Introduction to Educational Technology | 3 |

*Background check with the Leon County School District is required. The cost is approximately \$61.

Professional Education Core Courses

The professional core consists of twenty-two (22) semester hours of coursework 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:

EDF 3135 Adolescent Psychology or
 EDF 3210 Psychology in Education or
 DEP 2004 Human Growth and Development or
 EDP 2002 Educational Psychology3
 EDG 3004 Overview and Orientation to Teaching (excluding Elementary Education)3
 ESE 3341 Theory and Practice of Teaching in Secondary Schools3
 EDF 3430 Measurement and Evaluation of Educational Growth3
 RED 3333 Teaching Reading in Secondary Schools3
 ESE 4930 Seminar in Secondary Education3
 XXXX Methods of Teaching (respective content areas)3
 TSL 4324 ESOL Survey of Strategies for Secondary Schools3

Electives in Education

EDG 3302 Professional Development for Pre-service Teachers
 EDG 4706 Multicultural Education: Theory and Practice
 EME 4400 Computer Applications in Education (Prerequisite: EME 2040) or
 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
 ESE 4943 Student Teaching6
 21

Each student must take the appropriate one of the following discipline-related courses:

JOU 4800 Teaching High School Journalism3
 LAE 3361 Teaching of English in High School3
 MAE 4331 Teaching of Mathematics in the Secondary School4
 SCE 3330 Teaching of Science in High School3
 SSE 3360 Teaching Social Studies in High School3
 THE 4761 Methods of Teaching Theatre3

Course Descriptions

EDF 1005 Introduction to Education (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 Adolescent Psychology (3) 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) Emphasis on 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.

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) Views, from vantage point of public school teacher, both basic and day-to-day legal problems involving public education.

EDG 2701 Teaching Diverse Populations (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 3004 Overview and Orientation to Teaching (1) Focus on early involvement activities regarding teaching. Student will observe and participate in teaching-related activities in a school setting.

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.

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 Educational Technology (3) Purposes: to enable students to use computers and related technology as tools both in their own work and in work they will do as teachers; and 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 micro-computer 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.

ESE 3341 Theory and Practice of Teaching in the Secondary School (3) Prereq: EDF 1005, EDG 3004, EDF 3135 or EDF 3210 or DEP 2004 or EDP 2002, EME 2040. Focuses upon the Florida Generic Teaching Competencies directly related to the implementation of major steps in the teaching process. Includes a study of the basic methods, techniques and procedures for effective classroom instruction. 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 3430, ESE 3341) A capstone course for secondary education majors which focuses on selected Florida Generic Teaching Competencies including classroom management, school safety, professional ethics, and education law.

ESE 4943 Student Teaching in the Secondary School (6-12) 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 global ocean, the earth's atmosphere, weather patterns, the solar system and beyond the solar system.

SCE 3330 Teaching Science in High School (3) Nature of science, scientific method, directions and goals of science teaching, study of research on cognitive development, secondary science curriculum, instructional-strategies, planning and evaluation of science instruction, laboratory safety, and field clinical experiences.

TSL 4234 ESOL Survey Strategies Ins. (3) 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 practice in ESOL instruction.

DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND RECREATION

The Department of Health, Physical Education and Recreation offers professional courses leading to the Bachelor of Science degree in Physical Education. The curriculum is designed to prepare students for employment in the teaching profession. Teaching opportunities include certification in grades K-12 in the areas of physical education, athletic coaching, health, dance, adapted physical education, and driver and safety education. The Department also offers an endorsement in Aquatics.

Faculty

Professors: Chandler, Steve B.; Okeke, Maria U.; Ramsey, Joseph P.; Thompson, Barbara A.

Associate Professors: Jackson, Jr., E. Newton

Assistant Professors: Bogan, Samuel; Hickey, Brian; Sermon, Janet M.; Sherrod, E. Gaynell

Instructor: Olaves, Jorge

The following courses are required for a teaching major in physical education:

Physical Education K-12

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| AMH 2010 U.S. History 1492 - 1864 OR | |
| AMH 2020 US History 1865 - Present.....3 | |
| ENC 1101 Freshman Communication Skills I.....3 | |
| HSC 1100 Health for Modern Living.....3 | |
| MAC 1105 College Algebra I.....3 | |
| PEM 1101 Fundamental Movement.....1 | |
| PSC 1121 Introduction to Physical Science/Lab.....4 | |
| | 17 |
| <u>Spring Semester</u> | |
| EDG 3004 Overview & Orientation.....1 | |
| ENC 1102 Freshman Communication Skills II.....3 | |
| GLY 2001 Intro. to Earth Space Science.....3 | |
| MAC 1133 Algebra & Trig. Functions.....3 | |
| PEM 1140 Aerobic Conditioning.....1 | |
| PSY 2012 Intro. to Psychology.....3 | |
| PHI 2010 Introduction to Philosophy.....3 | |
| | 17 |
| <u>Summer Semester</u> | |
| BSC 1005 Biological Science w/lab.....4 | |

Sophomore Year

| | |
|------------------------------------------------------------|----|
| <u>Fall Semester</u> | |
| EDF 1005 Introduction to Education.....3 | |
| MTG 2206 College Geometry.....3 | |
| PEN 2101 Prin. & Analysis of Aquatics.....2 | |
| SPC 2600 Public Speaking.....3 | |
| PET 2000 Introduction to Physical Education.....3 | |
| PET 2320 Applied Human Anatomy (Prereq.: BSC 1105).....3 | |
| | 17 |
| <u>Spring Semester</u> | |
| SYG 2000 Intro to Sociology.....3 | |
| AMH 3571 Afro-American History 1865.....3 | |
| EDG 2701 Teach Diverse Population (Field Experience).....3 | |
| ARH 2000 Art Appreciation.....3 | |
| DEP 2004 Human Growth & Development OR | |
| EDF 3135 Adolescent Psychology.....3 | |
| | 15 |

Junior Year

| | |
|-----------------------------------------------------------------------------------------|----|
| <u>Fall Semester</u> | |
| EME 2040 Introduction to Educational Technology.....3 | |
| PEO 3004 Theory of Coaching.....3 | |
| PET 2622 Care & Prevention of Athletic Injuries (Prereq.: BSC 1005 & PET 2320).....3 | |
| TSL 4324 ESOL Survey of Strategies for Learning.....3 | |
| PET 3820 Teaching Sports Skills I.....3 | |
| | 15 |
| <u>Spring Semester</u> | |
| DAE 3310 Creative Movement Rhythm.....3 | |
| DAE 3350 Methods and Material of Teaching Dance.....3 | |
| PET 3230 Motor Learning.....3 | |
| PET 3510 Tests and Measurement.....3 | |
| PET 3821 Teaching Sports Skills II.....3 | |
| PET 4330 Anatomic Kinesiology (Prereq.: BSC 1005 & PET 2320).....3 | |
| | 18 |

Senior Year

| | |
|----------------------------------------------------------------------|----|
| <u>Fall Semester</u> | |
| RED 3333 Reading in Content Area (Field Exp.).....3 | |
| PET 3463 Methods of Teaching Physical Education (Field Exp.).....3 | |
| PET 4351 Physiology of Exercise (Prereq.: BSC 1005 & PET 2320).....3 | |
| PET 4401 Organization and Administration of Physical Education.....3 | |
| PET 4640 Adapted Physical Education (Field Exp.).....3 | |
| | 15 |
| <u>Spring Semester</u> | |
| PET 4943 Student Teaching in Physical Education (K-12).....6 | |

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 placed 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.

DAA 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.

EPH 4021C Biological Aspects of Motor and Physical Disabilities (3) Neurological and orthopedic defects will be emphasized. Visits to hospitals, clinics and medical lectures supplement classroom instruction.

EPH 4210 Educational Management of Children with Physical Disabilities (3) Educational programming and rehabilitation for children with cerebral palsy and other motor disabilities; examination of community services; methods of identification, care and counseling, visits to clinics and classes.

EPH 4941C Participation in Programs for the Physically Disabled (3) Required field work with the physically disabled.

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-related 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) Explore 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 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 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 (2) 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 sport 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 which 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 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.

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 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 varsity baseball team.

PEL 2344 Varsity Tennis II (1) Course credit given only to participants demonstrating knowledge and skill development.

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.

PEM 1121 Beginning Swimming (1) Introductory course to basic skills utilized in swimming. Equipment, safety, skills and techniques are emphasized.

PEM 1122 Intermediate Swimming (2) An intermediate course in swimming. Emphasis is placed on advanced beginner's skills.

PEM 1171 Aqua-Cise (2) A method of aerobic exercise utilizing water as the medium. Emphasis on cardiovascular exercises in the water.

PEM 2101 Principles and Analysis of Aquatics (2) Techniques and fundamentals of teaching swimming.

PEM 2113 Life Guarding (2) Prereq: Swimming ability following American Red Cross procedures. Introductory course focusing on skills and knowledge of life guarding.

PEM 2136 Scuba Diving (2) Prereq: Swimming ability. Introductory course focusing on skills and knowledge of scuba diving.

PEM 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.

PEM 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.

PEN4105 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 coordinating 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 give orientation to the field of physical education and sport 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 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 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 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 4330 Anatomic Kinesiology (3) Prereq: BSC 1005, PET 2320C Mechanical aspects of human movement.

PET 4351 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 4510 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 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) 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.

DEPARTMENT OF BUSINESS AND TECHNOLOGY EDUCATION

Faculty

Associate Professor and Chairperson: Dennis, Dawn Holley

Professor: Shotwell, Theresa A.

Instructors: LaFaille, Carolyn; Martin, Wonda

The Department of Business and Technology Education provides and administers programs and experiences aimed at meeting the needs of two groups of students: pre-service personnel and in-service personnel. The pre-service programs are designed primarily to prepare persons to enter the chosen field of employment for the first time. The in-service programs are designed primarily for persons who are already employed and who need training or retraining in order to upgrade their professional preparation to maintain their current job or to develop new competencies in order to obtain employment in new jobs.

The programs in the department prepare persons primarily to teach, coordinate, supervise, and administer career and technical education programs in public and private schools and agencies. Although most of the programs are designed for entry into the field of education, experiences are available in several programs to enhance the opportunities for employment in business and industry.

Qualified applicants who meet the minimum requirements for admission to the university may pursue:

- 1) Baccalaureate degrees in Business Education and Industrial Arts/Technology Education, and Office Administration
- 2) Master's degrees in Business Education and Industrial Arts/Technology Education; and
- 3) Certification in Business Education.

Admission Requirements. Admission in a Business and Technology Education program must be obtained from the Office of Admissions and Records. Admission is granted to either a degree-seeking student or to a special student who does not wish to study for a degree.

Bachelor of Science in Business Education Major in Business Education

This program is designed to prepare a student to teach all business-related courses at the middle and high school level. This program fulfills course requirements for Business Education Certification in the State of Florida.

| | Sem. Hrs. |
|------------------------------------------------------|-----------|
| Freshman year | |
| First Semester | |
| #HUM XXXX Humanities Elective | .3 |
| ENC 1101 Freshman Communication Skills I | .3 |
| HSC 3107 Healthy Life Styles for Students or | |
| HSC 1100 Health for Modern Living | .3 |
| AMH 2020 U.S. History 1865 to Present | .3 |
| PHI 2010 Introduction to Philosophy | .3 |
| <u>OST 1100 Keyboarding/Speech Recognition</u> | <u>.3</u> |
| | 18 |
| Second Semester | |
| *OST 1110 Document Processing I | .3 |
| ENC 1102 Freshman Communication Skills II | .3 |
| MAC 1105 College Algebra | .3 |
| GLY 2001 Introduction to Earth & Space Science | .3 |
| AMH 2091 Introduction to African History | .3 |
| <u>EDG 3004 Overview & Orientation</u> | <u>.1</u> |
| | 16 |
| Summer Semester | |
| MTG 2206 College Geometry | .3 |
| <u>SPC 2600 Public Speaking</u> | <u>.3</u> |
| | 6 |

Sophomore Year

| | |
|---------------------------------------------------------------|-----------|
| First Semester | |
| GEB 2001 Introduction to Business | .3 |
| MGF 1107 Liberal Arts Math II | .3 |
| **OST 2120 Document Processing II | .3 |
| PSY 2012 Introduction to Psychology | .3 |
| <u>BSC 1005 Biological Science w/Lab</u> | <u>.4</u> |
| | 16 |
| Second Semester | |
| ECO 2013 Principles of Economics I | .3 |
| EDG 2701 Teaching Diverse Populations | .3 |
| EME 2040 Introduction to Educational Technology | .3 |
| OST 2335 Business Communication | .3 |
| <u>SPC 1121 Introduction to Physical Science w/ Lab</u> | <u>.4</u> |
| | 16 |

Junior Year

| | |
|---------------------------------------------------------|-----------|
| First Semester | |
| ACG 2021 Financial Accounting Principles | .3 |
| BTE 3068 Principles of Business Education | .3 |
| DEP 2004 Human Growth & Development | .3 |
| *OST 3716 Word Processing | .3 |
| OST 4354 Records Management | .3 |
| <u>ECO 2023 Principles of Economics II</u> | <u>.3</u> |
| | 18 |
| Second Semester | |
| ACG 2071 Managerial Accounting Principles | .3 |
| EDF 3430 Measurement and Evaluation in Education | .3 |
| ESE 3341 Theory and Practice in Secondary School | .3 |
| *OST 3639 Integrated Computer Applications | .3 |
| TSL 4324 Strategies for Instruction | .3 |
| <u>BUL 3320 Business Law - Business Education</u> | <u>.3</u> |
| | 18 |

Senior Year

| | |
|-------------------------------------------------------------|-----------|
| First Semester | |
| OST 4404 Administrative Support Systems | .3 |
| OST 4500 Office Management | .3 |
| OST 4816 Desktop Publishing | .3 |
| RED 3333 Teaching Reading in Secondary School | .3 |
| <u>BTE 4410 Methods of Teaching Business Subjects</u> | <u>.3</u> |
| | 15 |
| Second Semester | |
| BTE 4945 Student Teaching (6-12) | .6 |

Total **132**

One of the following may be used for the second HUM course: AMH 2010, 2020, 3571, 3572; AML 3010, 3122; ARH 2050, 3000, 3610, 4410, 4414; ENL 3013, 3023; EUH 3100, 3120, 3501; LIT 2110, 2120, 3110; MUL 3111, 2112, 3116, 3211, 3212; PHI 2012, 3101, 3100, 3200, 3600, 3700; PHH 3400, 3600; PHM 3120; REL 2000.

* Prerequisite: OST 1100

** Prerequisites: OST 1100 & OST 1110

Bachelor of Science in Business Education Major in Office Administration

This program is designed to prepare students for “workplace readiness” as competent high-level office assistants, managers, or administrators.

| Freshman year | Sem. Hrs. |
|---------------------------------------------------------|-----------|
| First Semester | |
| HSC 3107 Healthy Life Styles for Students | 3 |
| ENC 1101 Freshman Communication Skills I | 3 |
| MAC 1105 College Algebra | 3 |
| HUM 2211 Historical Survey I | 3 |
| OST 1100 Keyboarding/Speech Recognition | 3 |
| | 15 |
| Second Semester | |
| *OST 1110 Document Processing I | 3 |
| ENC 1102 Freshman Communication Skills II | 3 |
| MFG 1106 Mathematics for Liberal Arts | 3 |
| AMH 2091 Introduction to African-American History | 3 |
| #HUM XXXX Elective | 3 |
| | 15 |

Sophomore Year

| | |
|--------------------------------------------------------|----|
| First Semester | |
| PSY 2012 Introduction to Psychology | 3 |
| GEB 2001 Introduction to Business | 3 |
| MGF 1107 Mathematics for Liberal Arts II | 3 |
| BSC 1005 Biological Science w/ Lab | 4 |
| **OST 2120 Document Processing II | 3 |
| | 16 |
| Second Semester | |
| OST 2335 Business Communications | 3 |
| SPC 2600 Public Speaking | 3 |
| ECO 2013 Principles of Economics I | 3 |
| BTE 2XXX Introduction to Information Technology | 3 |
| PSC 1121 Introduction to Physical Science w/ Lab | 4 |
| | 16 |

Junior Year

| | |
|---------------------------------------------------------------|----|
| First Semester | |
| ACG 2021 Financial Accounting Principles I | 3 |
| MKA 3011 Marketing Fundamentals | 3 |
| MNA 2300 Human Resource Management | 3 |
| OST 3337 Business Report Writing | 3 |
| *OST 3716 Advanced Word Processing | 3 |
| ECO 2023 Principles of Economics II | 3 |
| | 18 |
| Second Semester | |
| MNA 3011 Managing Operations | 3 |
| EVT 3665 Employer-Employee Relations | 3 |
| ACG 2071 Managerial Accounting Principles II | 3 |
| EDG 3302 Professional Development for Pre-Professionals | 3 |
| BUL 3320 Business Law - Business Education | 3 |
| *OST 3639 Integrated Computer Applications | 3 |
| | 18 |

Senior Year

| | |
|-----------------------------------------------|----|
| First Semester | |
| OST 4071 Leadership Development | 3 |
| *OST 4816 Desktop Publishing | 3 |
| OST 4404 Administrative Support Systems | 3 |
| OST 4354 Records Management | 3 |
| OST 4500 Office Management | 3 |
| BTE 4220 Intro to Inform Systems | 3 |
| | 18 |

Second Semester

| | |
|--------------------------------------------------|---|
| BTE 4944 Supervised Work Experience (6-12) | 6 |
| | 6 |

Total122

Recommended Electives

| | |
|--------------------------------------|---|
| SPN 1100 Elementary Spanish I | 3 |
| SPN 1101 Elementary Spanish II | 3 |

One of the following may be used for the second HUM course: AMH 2010, 2020, 3571, 3572; AML 3010, 3122; ARH 2050, 3000, 3610, 4410, 4414; ENL 3013, 3023; EUH 3100, 3120, 3501; LIT 2110, 2120, 3110; MUL 3111, 2112, 3116, 3211, 3212; PHI 2012, 3101, 3100, 3200, 3600, 3700; PHH 3400, 3600; PHM 3120; REL 2000.

* Prerequisite: OST 1100

** Prerequisites: OST 1100 & OST 1110

Bachelor of Science in Industrial Arts/Technology Education Major in Technology Education

The Technology Education undergraduate program is designed to prepare a student to teach technology-related courses specifically (construction, manufacturing, transportation and communication technologies) at the middle and high school levels. This program may fulfill course requirements for a temporary certification in Industrial Arts/ Technology Education. However, the student may meet eligibility for State of Florida certification based on the agency's course by course analysis.

| Freshman year | Sem. Hrs. |
|------------------------------------------------------|-----------|
| First Semester | |
| *HUM XXXX Humanities Elective | 3 |
| ENC 1101 Freshman Communication Skills I | 3 |
| MAC 1114 Algebraic and Trigonometric Functions | 3 |
| BSC 1005 Biological Science | 3 |
| PHI 2010 Introduction to Philosophy | 3 |
| | 15 |

Second Semester

| | |
|----------------------------------------------------|---|
| ENC 1102 Freshman Communication Skills II | 3 |
| MAC 1147 Pre-Calculus | 4 |
| EDF 1005 Introduction to Education | 3 |
| ETI 2XXX Computers in Engineering Technology | 3 |

| | |
|----------------------------------------------------------------------------------------|----|
| HSC 3107 Healthy Lifestyles for Students or HSC 1100 Health for Modern Living | 3 |
| | 16 |

Summer Semester

| | |
|---------------------------------------------|---|
| MAC 2311 Calculus I | 4 |
| EDG 2701 Teaching Diverse Populations | 3 |

EME 2040 Introduction to Educational Technology 3
 EGS 1110C Engineering Graphics w/Autocad 3
 13

Sophomore Year

First Semester

AMH 2091 Introduction to African-American History 3
 PSY 2012 Introduction to Psychology 3
 ECO 2013 Principles of Economics I 3
 GRA 1300 Graphic Communication Materials and Processes 3
 PHY 2048 General Physics I w/Lab 4
 16

Second Semester

ECO 2023 Principles of Economics II 3
 GLY 2001 Introduction to Earth & Space Science 3
 GRA 2201 Electronic Prepress for Publishing I 3
 ETI XXXX Computer Aided Design I 3
 ETM 3820 Engineering Materials 3
 15

Junior Year

First Semester

ETI XXXX Manufacturing Processes 3
 EDG 3004 Overview & Orientation to Teaching 1
 OST 3337 Professional Report Writing 3
 EIA 3270 Electricity/Electronics Technology I or
 EET 2035 Electronic Fundamentals I 3
 GRA 2310 Press and Bindery Processes 3
 EET 2106 Electronic Devices and Circuits I 3
 16

Second Semester

DEP 3004 Human Growth & Development 3
 EDF 3430 Measurement and Evaluation 3
 EDG 3302 Professional Development for Pre-Professionals 3
 EIA 3271 Electricity/Electronics Technology II or
 EET 2036 Electronic Fundamentals II 3
 EET 3107 Electronic Devices and Circuits II 3
 15

Senior Year

First Semester

RED 3333 Teaching Reading in Content Area 3
 EIA 4360 Instruction Methods in Industrial Arts/Tech. Ed. 3
 ETI or EVT Elective 3
 TSL 4324 Strategies for Instruction 3
 ETC 2500 Transportation I 3
 15

Second Semester

EIA 4941 Student Teaching in Industrial/Technology Education (6-12) .. 6
 Technology Education - 16 weeks middle/junior high school
 16 weeks high school

Total 127

For further information concerning technical elective substitutions in the content area, please contact your academic advisor or Chairperson,

Florida Agricultural and Mechanical University at (850) 599-3061.

Recommended Electives

EEX 4010 Introduction to Education of Exceptional Children 3
 EDG 4931 Seminar in Special Topics 3
 EIA 3043 Arts & Craft 3
 SPN 1100 Elementary Spanish I 3
 SPN 1101 Elementary Spanish II 3

Course Descriptions

BTE 2XXX Introduction to Information Technology (3) Critical thinking and information literacy are emphasized as tools for coping with and thriving in a rapidly changing technological world. Co-requisites: OST 1100 & OST 2120.

BTE 3068 Principles of Business Education (3) Overview of teaching business subjects at the secondary and postsecondary levels.

BTE 4220 Introduction to Information Systems (3) Activities to help understand the applications of computers and information systems to business functions.

BTE 4410 Methods of Teaching Business Subjects (3) Prereq: All courses in the major sequence. Special methods, techniques and devices used in teaching business subjects.

BTE 4906 Directed Individual Study (1-5) Independent study designed to increase student's understanding of specific phases of business education or courses not currently offered.

BTE 4944 Supervised Work Experience (9-12) involves students in practical work experience (office) as part of their regular program. Employment may be in local areas, student's home area, or out of state.

BTE 4945 Student Teaching in Business Education (6-12) Prereq: All courses in major sequence. Student teach business subjects in middle or high schools under the supervision of a regular public school teacher. Grade is contingent on passing the Florida Teacher Certification Examination.

BTE 4946 Directed Observation and Participation in Business Education (3) Students observe and assist teachers of business subjects in local middle and secondary schools.

BUL 3320 Business Law Education (3) Knowledge of common legal processes, procedures and documents, major types of laws and distinguish among them, federal, state, and local statutes, and assess organized labor strategies and the legal impact of organized labor.

EDG 3302 Professional Development for Pre-Professionals/Pre-Service Teachers (3) This course is designed to provide candidates with expectations of the workplace and social settings. The major tasks for candidates are to learn a specified set of information, demonstrate that learning and exhibit behaviors which are set forth as rules and expectations.

EIA 2284 Fundamentals of Wood Finishing and Furniture Refinishing (3) Basic technical information on physical properties of wood, finishing materials, their application and treatment on various woods.

EIA 3043 Arts and Crafts (3) Experiences in crafts such as woods, plastic, metals, leather, textiles and other related craft materials.

EIA 3223 Power Technology (3) Transmission of power by mechanical, hydraulic, and pneumatic means. Internal combustion, gasoline and diesel engines, gas and steam turbines, and atomic solar energy.

EIA 3230 Materials Processing Technology (3) Comprehensive approach to teaching technically-oriented industrial materials and processes in woods, metals, plastics, and others.

EIA 3237 Transportation Technology (3) Understanding Modern Transportation Systems. Lab experiences stress fundamentals of the automobile and its efficient and safe operation.

EIA 3240 Organization and Management of the General Shop (3) Selection and arrangement of equipment and related materials; safety; personnel systems; principles and procedures underlying modern school shop planning and control (industrial arts/technology education major)

EIA 3260 Plastics Technology I (3) Plastics, their sources, classification, structure, characteristics, and uses. Fundamental processes include forming imbedding, bending, engraving, internal carving, dyeing, simple

laminating, casting, simple thermoforming, assembling, and finishing.

EIA 3264 Fundamentals of Mechanical Drawing (3) Information and exercises in instrument and free-hand orthographic drawing, pictorial forms, work drawings, primary auxiliary views, sections, isometric. Oblique drawings and dimension drawing conventions.

EIA 3265 Technical Drawing (3) Study and application of advanced mechanical drawing techniques.

EIA 3269 Special Problems in Drawing and/or Design (3) Research and/or lab experiences in development of skills in drawing and design. Experiences may be in- or out-of-class at the discretion of the professor.

EIA 3270 Electrical/Electronics Technology I (3) Basic theory of direct current electricity, its various sources, characteristics and application. Includes ohms and watts laws and their application to series, parallel, and series-parallel circuits.

EIA 3271 Electrical/Electronics Technology II (3) Prereq.: EIA 3270. Basic theory of alternating current electricity, its application to series, parallel, and series-parallel circuits. Also includes instruction on application of capacitors, coils, resistors, and transformers to the electronic circuit.

EIA 3275 Power Mechanics Technology (3) Fundamentals principles and functions of small power units. Lab experience in operation, maintenance, tune-up, and overhaul procedures of two and four cycle engines.

EIA 3280 Wood Technology I (3) Woods, their properties and uses, care and uses of woodworking tools, basic woodworking practices, and industries involved.

EIA 3283 Special Problems in Wood Technology (3) Research and/or lab experiences to develop additional skills in wood technology. May be individual study.

EIA 3292 Basic Photography (3) Basic instruction and experiences in photography, including camera and darkroom work.

EIA 3293 Special Problems in Graphic Arts and Photography (3) Research and/or lab experiences to develop additional skills in graphic arts and/or photography; in or out of class at the discretion of the professor.

EIA 4212 Elementary Technology Education (Industrial Arts) (3) Provides elementary and technology education (industrial arts) teachers with knowledge of industrial processes to enable them to integrate concepts and constructional activities into planning and teaching in the elementary school.

EIA 4220 The World of Construction (3) Content and methods of teaching contemporary construction technology. Management, personnel, and production techniques, utilized in construction industries.

EIA 4221 The World of Manufacturing (3) Content and methods of teaching contemporary manufacturing technology. Management, personnel, and production techniques, utilized in construction industries.

EIA 4228 Graphic Communications (3) Content and methods of teaching communication technology; past, present, and future communication technologies, processes, and influences, of drafting, printing and photography on man and society.

EIA 4360 Instructional Methods in Technology Education (Industrial Arts) (3) Teaching methods, devices, techniques, class organization, information about students used in teaching shop and related subjects. Technology education major only.

EIA 4820 Machine Maintenance (3) Practical experience in the general maintenance of laboratory tool and equipment in all areas of technology education (industrial arts) facilities.

EIA 4941 Student Teaching in Technology Education (Industrial Arts) (9) Prereq: Completion of all courses in major sequence. Intensive study and application of principles of teaching and learning; full-time teaching experiences under capable teachers in cooperating public schools. For technology education majors only. Grade is contingent on passing the Florida Teacher Certification Examination.

EIA 4664 Problems in Technology Education (Industrial Arts) (3-5) A broad study of the relationship of technology education systems and curricula implications for people, society and environment.

EVT 3065 Principles of Industrial Education (3) Development of a thorough understanding of the basic concepts of technology education and a complete and consistent set of beliefs with relation to education for vocational competence.

EVT 3665 Employer-Employee Relations (3) Introduction to the development of the American labor movement, labor problems and legis-

lation, and basic considerations of maintaining proper relationships between workers and management.

EVT 4090 Introduction to Metric Measurement in Industrial Education (3) Designed to acquaint students with metric systems of measurement.

EVT 4165 Organization of Instructional Materials (3) Organization of materials used for a teacher-made course of study for a specific teaching situation.

EVT 4366 Effective Utilization of Teaching Aids (3) Construction, preparation, and utilization of a variety of materials and aids to facilitate teaching industrial subject; basic psychological principles underlying the use of these aids. For juniors and seniors.

EVT 4367 Testing and Evaluation in Industrial Education (3) Understanding the construction and use of the appropriate evaluation instruments for classroom teaching level in vocational and industrial, and technical education.

EVT 4501 Instructional Strategies for Teaching Exceptional Children (3) Instructional methods, devices, techniques, materials, and resources for teaching general information and related subjects.

EVT 4814 Technical Facilities Planning (3) Special problems involved in planning, organizing, and developing vocational labs, including safety practices.

EVT 4905 Directed Individual Study (1-5) Undergraduate students pursue needed study in the field when appropriate courses are not scheduled during a particular semester.

EVT 4934 Pro Seminar in Industrial Education (3) Advanced students study problems and research in industrial teaching; discuss and report on basic issues, problems, and concepts in industrial, vocational and technical education. For in-service teachers and senior industrial education majors.

EVT 4942 Student Teaching In Industrial Education (9) Intensive study and application of principles of teaching and learning; full-time teaching experiences under capable teachers in cooperating public schools. Grade is contingent on passing the Florida Teacher Certification Examination.

EVT 4950 Occupational Competency Assessment (30) Prereq: Approval by department chairperson and faculty advisor. Special examination as basis for evaluating occupational experience in terms of credit leading to vocational and occupational goals.

GEB 2001 Introduction to American Industrial and Business Systems (3) Orientation experiences designed to provide students with an awareness of modern business and industrial systems.

MKA 3011 Marketing Fundamentals (3) Contemporary development in marketing.

MNA 3011 Managing Operations (3) Basic theory of management and its actual practice including theoretical concepts and relevant research.

MNA 2300 Human Resource Management (3) Basic principles of human resources management as it applies to personnel in office activities.

OST 1100 Keyboarding/Speech recognition (3) Designed to help students develop the ability to use a standard keyboard efficiently.

OST 1110 Document Processing I (3) Prereq: OST 1100 or typing experience. Continuation of speed building techniques; introduction to document processing and production.

OST 2120 Document Processing II (3) Prereq: OST 1110. Advanced production of office projects.

OST 2335 Business Communications (3) Prereq: ENC 1101, 1102. Provides training in oral expression and writing business letters and reports in correct style and forceful English.

OST 3337 Business Report Writing (3) This course emphasizes clear expository writing of memoranda, reports, proposals, articles and oral presentations of reports in student's major field of study.

OST 3639 Integrated Computer Applications (3) Prereq: OST 2120, OST 2335, OST 3716. Development of proper and efficient operation of transcribing and dictating equipment, and microcomputer for calculations, word processing, database management, electronic spreadsheets, and telecommunication.

OST 3716 Advanced Word Processing (3) Prereq: OST 2120, OST 2335. An introduction to word processing theory and the use of word pro-

cessing software.

OST 4071 Leadership Development for Business (3) Designed to help students develop the necessary leadership skills and attitudes to become effective leaders in the marketplace.

OST 4354 Records Management (3) Design and analysis of record system, management of the life cycle of records, and the retention and maintenance of records.

OST 4404 Administrative Support System (3) Prereq: OST 2335, OST 2120, OST 3639, OST 3711. Designed to develop efficiency through presentation and application of business office techniques. Attention is given to communication, personality traits, human relations and productivity.

OST 4500 Office Management (3) Principles of scientific management including supervision and planning services, system analysis, and work flow.

OST 4816 Desktop Publishing (3) Prereq: OST 3711. Production of mailable documents, creative documents, and telecommunications using various computer applications.

College of Engineering Sciences, Technology and Agriculture

The College of Engineering Sciences, Technology and Agriculture (CESTA), is the second oldest college at Florida A&M University. This college provides the foundation for the land-grant status of Florida A&M University. CESTA consists of four major component areas: 1) The Academic Programs (undergraduate and graduate) component, that consists of three divisions: a) The Division of Agricultural Sciences; b) The Division of Engineering Sciences and Technology and c) The Division of Naval Sciences; 2) The Research and Technology Development Programs component (basic and applied) serves to enrich and broaden the knowledge and research base of the citizens of Florida, the nation and the world in agriculture, food and engineering sciences and technology. Significant research is being conducted in the following research Centers: a) The Center for Biological Control, b) The Center for Water Quality, c) The Center for Viticulture Sciences and Small Fruit, d) The Research and Extension Center, in Quincy, e) The Center for Domestic and International Agricultural Trade, Development Research and Training, f) John A. Mulrennan, Sr., Public Health Entomology Research and Education Center, in Panama City. All of these Centers offer our students excellent opportunities to conduct meaningful research. 3) The Cooperative Extension/Outreach Programs is the outreach arm of CESTA. Through this component, research-based educational information and technical assistance are provided to our clientele throughout the state, and especially in the panhandle region; and 4) The International Agricultural Programs component seeks to ensure the global competitiveness of our students and strengthen the services provided to our stakeholders in an increasingly complex and dynamic global marketplace.

The objectives of the college are to afford students a general education that will assist them in living a full and well-balanced life; to offer courses and other specialized instruction required by students enrolled in the programs of agricultural sciences, engineering sciences, and engineering technology; to enable the graduates to undertake graduate or professional study or to enter directly into rewarding careers in business, industry, or government and to foster opportunities for undergraduate, graduate and faculty research. The course requirements for the scientific and technical programs may change due to on-going curricular modernization. Students entering the College of Engineering Sciences, Technology and Agriculture are required to have a strong background in mathematics and the sciences, and to have an overall minimum GPA of 2.0. All students will be required to obtain a grade of "C" or better in all major courses and a minimum GPA of 2.5 in all major required electives. All students are strongly encouraged to participate in internship programs, and volunteering/community service activities, which are offered through CESTA, the University Career Center and the Office of Community Activities Volunteering Services, respectively.

CESTA Forum/Colloquium

Students (undergraduate and graduate) are required to register in the appropriate CESTA Forum/Colloquium course each semester of enrollment. Attendance and participation are mandatory for an S/U grade. Failure to participate will result in the student receiving an unsatisfactory grade. CESTA reserves the right to withhold the recommendation for graduation of any student who does not conform to these requirements.

Degrees Offered

Associate In Arts In Forestry And Natural Resources Conservation (2+2), with the University of Florida

Bachelor of Science In Agribusiness

Bachelor of Science In Biological And Agricultural Systems Engineering (BASE), with options in:

- Natural Resources Engineering
- Bio-processing Engineering

Bachelor of Science in International Agriculture and Business

Bachelor of Science In Landscape Design And Management

Bachelor of Science In Agriculture, with options in:

- Agricultural Education
- Agronomy
- Animal Science
- Entomology
- Food Science
- Ornamental Horticulture

Bachelor of Science in Civil Engineering Technology, students may choose the option:

- Surveying Technology

Bachelor of Science in Construction Engineering Technology

Bachelor of Science in Electronic Engineering Technology

Master of Science in Agricultural Sciences*, with concentrations in

- Plant/Soil Science
- Animal Science
- Food Science
- Agribusiness
- Entomology

Ph.D. in Entomology in cooperation with the University of Florida*

*(See School of Graduate Studies for details)

Scholarships Offered

Listed below are the scholarships normally offered in the College. For more information, please contact the Divisional Offices or the Office of the Associate Dean for Academic Programs. Students may apply for any of these scholarships online at our website at <http://www.famu.edu/acad/colleges/cesta/scholarships.html>.

- The Dwight D. Eisenhower Scholarship valued at \$22,000 per year for engineering technology students studying transportation.
- 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 valued \$500 per year for Engineering Technology majors.
- The URS-Greiner, Incorporation Scholarship valued at \$1,000 per year and available to Construction/Civil Engineering Technology majors.
- The USDA Forest Service Scholarships for freshmen and sophomore Forestry and Natural Resource Conservation majors values at \$3,000 per semester.
- The Ruben Capeluto Scholarship valued at \$1,000 per year and available to Entomology majors.
- The Benjamin L. Perry, Jr. Agricultural Sciences Scholarship for Agricultural Sciences majors.
- The Florida Rural Rehabilitation Corp. Agricultural Sciences Scholarship Fund for Agricultural Sciences majors coming from a Florida farm or a rural Florida background.

There are also other assistantships and scholarships sponsored by the College, the USDA Capacity Building Grants Program, Alumni, Professional Organizations and Companies. CESTA scholarships range from \$100 to more than \$500. Recipients are expected to maintain a minimum GPA of 3.0 per semester. All inquiries about scholarships should be directed through the Office of the Dean.

DIVISION OF AGRICULTURAL SCIENCES

The Division of Agricultural Sciences offers education and training in food and agricultural sciences and agricultural education. 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 provides 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 an Associate of Arts degree in Forestry and Natural Resource Conservation and four bachelor of science degree programs: (1) agribusiness, (2) international agriculture and business (3) landscape design and management and (4) agriculture with options in animal science, ornamental horticulture, agronomy, entomology and structural pest control, food science and agricultural education. 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: Heinis, Julius; Owens, Clarence B.

Professors: Abdullah, Makola (Dean); Anderson, Sr., Lee E.; Carter, Lawrence; Cilek, James; Colova (Tsolova), Violetka M.; Flowers, Ralph; Gardner, Cassel; Hubbard, Michael; Hsieh, Yuch; James, Neil; Kanga, Lambert; Leong, Stephen; Magee, Charles; Muchovej, James J; Olorunnipa, Zacch; Onokpise, Oghenekome (Associate Dean); Panchoy, Sunil; Pescador, Manuel; Phills, Bobby R.; Sheikh, Mehboob; Smith, John; Thomas, Michael; Thomas, Verian

Associate Professors: Duke, Edwin; Hand, Samuel E.; Kairo, Moses T.K.; Lorenzo, Alfredo; Lu, Jiang; Mbuya, Odemari; Milla, Katherine; Mobley, Ray; Musingo, Mitwe; Petersen, John; Taylor, Jennifer; Worthen, Helen Dreamal; Zhong, He

Adjunct Associate Professors: Bloem, Kenneth; Bloem, Stephanie; Hight, Stephen D.; Legaspi, Jesusa (Susie) C.; Reitz, Stuart R.

Assistant Professors: Barber, Jane A.; Hix, Raymond L.; Park, Hyun-Woo; Peterson, Thomas E.

Instructors: Bolques, Alejandro; Paul, Harriett

Research Associates: Beaudouin, Jean; Epler, John H.; Haseeb, Muhammad; Jackson, Todd; McKenzie-Jakes, Angela; Mazhar, Hifza; Rasmussen, Andrew; Ren, Zhongbo; Wang, Qian

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 |
| MAC 1114 Algebra & Trig. Function | .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 |
| Add. communications elective, approved ENC or SPH | .3 |
| General Education Approved Natural Science Courses (2) | .8 |
| | 33 |

Sophomore Year

| | |
|-----------------------------------------------------|----|
| 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 |
| Free Elective | .3 |
| Directed CESTA Elective | .3 |
| General Education Approved Humanities Electives (2) | .6 |
| | 30 |

Junior Year

| | |
|---------------------------------------------|----|
| AEB 3331 Agricultural Price Analysis | .3 |
| AEB 3143 Agricultural Finance | .3 |
| QMB 2102 Quantitative Methods (or QMB 3600) | .3 |
| AEB 3300 Marketing of Agricultural Products | .3 |
| ECO 3203 Macroeconomics Theory | .3 |
| AEB Directed Elective | .3 |
| Major Directed Elective | .3 |
| Free Elective | .3 |
| CESTA Directed Electives | .3 |
| | 27 |

Senior Year

| | |
|-----------------------------------|----|
| AEB 4261 Agric Policy | .3 |
| AEB 4152 Agribusiness Analysis | .3 |
| BUL 4130 Business Law | .3 |
| ECO 3421 Econometrics | .3 |
| AEB 4906 Special Problems | .3 |
| MAN 3025 Principles of Management | .3 |
| AEB Directed Elective | .3 |
| CESTA Directed Elective | .3 |
| Free Elective | .3 |
| Major Directed Elective | .3 |
| | 30 |

Total Credit Hours: **120**

Directed Electives:

AEB Directed Electives may be either 3000 or 4000 AEB courses other than the core AEB courses.

CESTA Directed Electives may be any 2000, 3000 or 4000 level course offered in CESTA 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.

International Agriculture and Business

The International Agriculture and Business (IAB) Degree is an interdisciplinary and international program, designed to equip students with technical skills in various disciplines of agriculture, as well as the business skills necessary to function as competent agriculture professionals in a global economy. In addition to taking prescribed core courses in Agriculture and

Business, students are expected to undertake an internationally focused internship. Graduates from this program can pursue careers with multinational agribusiness and other corporations, non-governmental organizations, Trading Blocks, Development Agencies, Government Agencies (such as Foreign Agricultural Services, United States International Agency for Development) etc. The curriculum consists of 120 credit hours, comprising 36 credit hours of Pre-Professional courses, 37 credit hours of core courses (Agriculture and Business), 20 credit hours of Directed Electives and 3 credit hours of International or approved internship.

| Freshman Year | Sem. Hrs. |
|------------------------------------------------------|-----------|
| ENC 1101 Freshman Communicative Skills I | 3 |
| MAC 1114 Algebra and Trigonometry Functions. | 3 |
| BSC 1010 General Biology I | 4 |
| HSC 1100 Health for Modern Living | 3 |
| ENC 1102 Freshman Communication Skills II. | 3 |
| CHM 1045 General Chemistry w/Lab | 4 |
| AMH 2091 Afro-American History | 3 |
| AGG 2004 Intro. to Ag. Sciences | 1 |
| Approved Computer Applications Elective | 3 |

27

| Sophomore Year | Sem. Hrs. |
|---------------------------------------------------------------------------------------|-----------|
| Humanities Elective | 3 |
| **Foreign Language | 4 |
| FOS 2002 Food and Man | 3 |
| ECO 2013 Principles of Economics I | 3 |
| ACG 2021 Financial Accounting Principles | 3 |
| MAC 2311 Calculus I | 4 |
| Humanities Elective | 3 |
| AEB 2104 Economics of Agriculture or ECO 2023 Principles of Economics II | 3 |
| SPC 2600 Public Speaking | 3 |

29

| Junior Year | Sem. Hrs. |
|------------------------------------------------------|-----------|
| **Foreign Language | 4 |
| QMB 3600 Quantitative Methods | 3 |
| ENC 3210 Technical Writing | 4 |
| ECO 3101 Microeconomic Theory | 3 |
| ENY 2006 Global Integrated Pest Management | 3 |
| SWS 3022 Fundamentals of Soil Science | 4 |
| AGR 3271 Temperate and Tropical Crops | 3 |
| AEB 3134 Agribusiness Management. | 3 |
| *Directed Elective | 3 |

30

| Summer Semester | |
|--------------------------|---|
| *** Internship | 3 |

| Senior Year | Sem. Hrs. |
|--------------------------------------------------------------|-----------|
| AEB 3305 Global Marketing of Agricultural Products | 3 |
| ECO 4707 International Trade and Finance | 3 |
| AGR 4275 Global Cropping Systems | 3 |
| ANS 3207 Animal Production in a Global Environment | 3 |
| AEB 3134 Principles of Agribusiness Management | 3 |
| *Directed Electives. | 16 |

31

Total Credit Hours: 120

***Directed Electives** may be selected from the following courses

| | |
|--------------------------------------------------------------|---|
| AEB 4261 Agriculture Policy..... | 3 |
| AEB 4452 Environmental Economics..... | 3 |
| AGR 3210 Field Crop Science | 3 |
| ANS 3638 Animals in the Global Food Supply..... | 3 |
| ANS 3204 Future Demands for Livestock Products..... | 4 |
| FOS 4005 Global Food Requirements of Humans and Animals... . | 4 |
| FOR 4502 Introduction to Global Agro-forestry..... | 4 |
| SWS 4021 Tropical Soils | 3 |

See Advisor for course selections.

****Foreign Language Requirement.** Students will be required to show proficiency in a foreign language. The student must check with his/her Academic Advisor to determine coursework needed.

*****Internship.** Prior approval by the student's advisor is required to take a summer internship, earning three (3) hours. A faculty member will monitor each student's activities by means as E-mail, telephone and written correspondences.

Bachelor of Science in Landscape Design and Management

The curriculum in landscape design and management is provided for students who are interested in preparing themselves for professional careers in the field of landscape design and contracting (including management). The program includes the design of gardens with particular emphasis on the natural and man-made beauty of the resulting landscape. It includes the study of factors affecting the characteristics of sites and also the designing, construction, planning, and maintenance of various grounds and industrial sites. Additional career areas with this degree includes interior scape design, park management, arboriculture, urban forestry and other related fields.

| Freshman Year | Sem. Hrs. |
|------------------------------------------------------------|-----------|
| ENC 1101 Freshman Communicative Skills I | 3 |
| MAC 1105 College Algebra | 3 |
| SPC 2600 Public Speaking | 3 |
| ECO 2013 Economics | 3 |
| AGG 2004 Intro. to Agri. Sciences | 1 |
| ENC 1102 Freshman Communicative Skills II | 3 |
| MAC 1133 Algebraic and Trigonometric Functions | 3 |
| BOT 1010C Elementary Botany | 4 |
| Humanities Elective | 3 |
| PSC 1121, 1121L Introduction to Physical Science | 4 |

30

| Sophomore Year | Sem. Hrs. |
|------------------------------------------------------------|-----------|
| CHM 1015, 1015L Fundamentals of Chemistry | 4 |
| LDE 1210 Landscape Graphics I. | 3 |
| BCN 2230 Materials and Methods of Construction I | 3 |
| SUR 2140 Elementary Surveying | 4 |
| AMH 2091 African-American History | 3 |
| LDE 4406 Theory & Principles of Landscape Design | 3 |
| LDE 1222 Landscape Graphics II | 3 |
| Humanities Elective | 3 |
| *ORH Elective | 6 |

32

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|----------------------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| ORH 3513 Landscape Plants I | .4 |
| ORH 3518 Landscape Plants II | .4 |
| ENY 2570 Principles of Environmental Entomology. | .3 |
| LDE 3016 History of Landscape Arch. | .3 |
| LDE 3415 Landscape Design Studio I | .4 |
| LDE 3425 Landscape Design Studio II | .4 |
| SWS 3022, 3022L Nature & Properties of Soils | .4 |
| ORH 3222 Turfgrass Culture | .3 |
| LDE 2515 Landscape Graphics III | .3 |
| | 32 |

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|------------------------------------------------|-----------|
| Summer Year | Sem. Hrs. |
| ORH 4942 Landscape Design Internship | .2 |

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|--------------------------------------------------|-----------|
| Senior Year | Sem. Hrs. |
| LDE 4435 Landscape Design Studio III | .4 |
| LDE 4445 Landscape Design Studio IV | .4 |
| ORH 4232 Arboriculture | .4 |
| LDE 4303C Site Improvement & Drainage | .3 |
| LDE 4610 Professional Administration | .3 |
| ORH 4860 Landscape Contracting I | .3 |
| ENY 3560 Pests of Orn. Plants and Turf | .3 |
| | 24 |

Total Credit Hours: 120

*May include ORH 4253, ORH 4261, HOS 3010

B.S. Degree in Agricultural Science (with Options)

I (a) Animal Science (Industry Option)

The industry option in animal science prepares individuals to manage technology needed to enhance production and management in the live-stock 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.

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|----------------------------------------------------|-----------|
| Freshman Year | Sem. Hrs. |
| <u>Fall Semester</u> | |
| 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 | .4 |
| Humanities I | .3 |
| Forum/Colloquium | .0 |
| | 15 |

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|-----------------------------------------------------|----|
| <u>Spring Semester</u> | |
| 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 |

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|----------------------------------|----|
| Humanities Elective II | .3 |
| Forum/Colloquium | .0 |
| | 16 |

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|-------------------------------------------------------|-----------|
| Sophomore Year | Sem. Hrs. |
| <u>Fall Semester</u> | |
| MAC 1105 College Algebra | .3 |
| CHM 1015, 1015L Fundamentals of Chemistry I | .4 |
| ANS 3244 Beef Production | .3 |
| ECO 2013 Principles of Economics I | .3 |
| Restricted Electives | .3 |
| Forum/Colloquium | .0 |
| | 16 |

| | |
|---------------------------------------------------------|----|
| <u>Spring Semester</u> | |
| 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 |
| Forum/Colloquium | .0 |
| | 15 |

| | |
|-------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| <u>Fall Semester</u> | |
| ANS 4080 Animal Science Expt. | .4 |
| PHY 2053, 2048L College Physics | .4 |
| Restricted Electives | .6 |
| Forum/Colloquium | .0 |
| | 14 |

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|------------------------------------------------|----|
| <u>Spring Semester</u> | |
| AGR 3232 Pasture & Range Management | .3 |
| ANS 3463 Feeds and Feedings | .3 |
| BSC 2093, 2093L Anatomy & Physiology | .4 |
| AEB 2104 Economics of Agriculture | .3 |
| Forum/Colloquium | .0 |
| | 13 |

| | |
|--------------------------------------------------------|-----------|
| Senior Year | Sem. Hrs. |
| <u>Fall Semester</u> | |
| ANS 3311 Reproduction of Farm Animals. | .4 |
| VME 4117 Animal Sanitation & Disease Control | .3 |
| Restricted Electives | .6 |
| ANS 4931 Animal Science Seminar | .1 |
| Forum/Colloquium | .0 |
| | 14 |

| | |
|------------------------------------------|----|
| <u>Spring Semester</u> | |
| ANS 3264 Swine Production | .3 |
| ANS 4445 Animal Nutrition | .4 |
| ANS 4932 Special Problems | .3 |
| ANS 4291 Incubation & Brooding | .3 |
| Restricted Electives | .4 |
| Forum/Colloquium | .0 |
| | 17 |

Total Credit Hours: 120

I (b) Animal Science (Pre-Vet & Science Major)

| Freshman Year | Sem. Hrs. |
|------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| 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 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 15 |

| | |
|-------------------------------------------|-------|
| <u>Spring Semester</u> | |
| 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 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 16 |

| Sophomore Year | Sem. Hrs. |
|-------------------------------------|-----------|
| <u>Fall Semester</u> | |
| MAC 1147 Pre-Calculus Math | .4 |
| CHM 1045, 1045L General Chemistry I | .4 |
| ANS 3244 Beef Production | .3 |
| ECO 2013 Principles of Economics | .3 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 14 |

| | |
|-----------------------------------------------|-------|
| <u>Spring Semester</u> | |
| 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 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 15 |

| Junior Year | Sem. Hrs. |
|-------------------------------------|-----------|
| <u>Fall Semester</u> | |
| CHM 2210, 2210L Organic Chemistry I | .4 |
| PHY 2053, 2048L College Physics | .4 |
| MCB 3020, 3020L Microbiology I | .4 |
| ANS 4080 Animal Science Expt | .4 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 16 |

| | |
|--------------------------------------|-------|
| <u>Spring Semester</u> | |
| CHM 2211, 2211L Organic Chemistry II | .4 |
| ANS 3463 Feeds and Feedings | .3 |
| PHY 2054, 2049L College Physics | .4 |
| BSC 2093, 2093L Anatomy & Physiology | .4 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 15 |

| Senior Year | Sem. Hrs. |
|------------------------------------------------|-----------|
| <u>Fall Semester</u> | |
| 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 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 16 |

| | |
|--------------------------------|-------|
| <u>Spring Semester</u> | |
| ANS 3264 Swine Production | .3 |
| ANS 4445 Animal Nutrition | .4 |
| ANS 4932 Special Problems | .3 |
| ANS 4291 Incubation & Brooding | .3 |
| Forum/Colloquium | .0 |
| | <hr/> |
| | 13 |

Total Credit Hours: .120

*Restricted electives require advisors 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, ZOO 3753; PHA 2004; PCB 3723; ZOO 2203.

II. Major in Agricultural Education

The Agricultural Education Program is a innovative new curricula that prepares graduates for careers in the United States and Abroad. Students gain valuable experience in the classroom and through early field experiences, internships and foreign language requirements. Students also gain a rich experience through courses offered by multidisciplinary departments.

The Agricultural Education Program includes: Agricultural Communications, AgroEcology and Extension Development.

(a) Agricultural Communications

Students interested in journalism, communicating agriculture and related areas should consider agricultural communications. Students complete courses in media methods, television broadcasting, writing, agriculture, public relations, sustainable development and courses that enhance cultural awareness.

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------|-----------|
| ENC 1011, 1102 Freshman Communication Skills | .6 |
| Approved Humanities Electives | .6 |
| MAC 1105 College Algebra and | |
| MAC 1114 Algebraic & Trig Functions | .6 |
| BSC 1005, 1010C Biological Science or | |
| BSC 1010C, 1011C General Biology I & II | .8 |
| AGG 2004 Introduction to Agricultural Science | .1 |
| JOU 1005 Language Skills for Journalist | .2 |
| <u>ECO 2013 Principles of Economics</u> | <u>.3</u> |
| | <hr/> |
| | 32 |

| Sophomore Year | Sem. Hrs. |
|--------------------------------------------|-----------|
| CHM 1045, 1046L General Chemistry 1 w Lab | .4 |
| SPC 2600 Public Speaking | .3 |
| AMH 2091 African-American History | .3 |
| GEA 2000 World Geography | .3 |
| FOS 2002 Food and Man | .3 |
| PGY 2101 Basic Photography | .3 |
| MMC 2100 Mass Media Methods | .3 |
| SYG 2000 Principles of Sociology or | |

ANT 2000 Introduction to Anthropology **or**
 EDF 3210 Educational Psychology3
 ENY 2570 Introduction to Agricultural Entomology3
Approved Computer Application Elective3
 31

Junior Year

MAR 3023 Principles of Marketing3
 JOU 3101 Newswriting and Reporting3
 *AEE 4418 Leadership Development in Agriculture & Nat. Res.3
 RTV 3001 Telecommunication Environment3
 PUR 3000 Introduction to Public Relations3
 MMC 4200 Communication Law3
 MMC 4203 Media Ethics **or**
 MMC 4601 Black Media and America2
 SWS 3211C Soil and Water Conservation3
 SWS 3022, 3022L Nature and Properties of Soils **or**
 *ANS 3006 Animal Science4
 AGR 3210 Field Crop Science **or**
 HOS 2010C Horticultural Science **or**
 PLS 2221C Plant Propagation3
AEE 3940 Agricultural Field Experience1-2
 32

Senior Year

PUR 3105 Public Relations Method3
 AEE 4301 Sustainable Agriculture2
 JOU 3223 Publications Editing and Design3
 AEE 4039 Strategies in Agricultural Communications2
 AEE 4326 Transfer and Adoption of Technology2
 AGG 4414 Women in Development2
 *AEE 4937 Topics in Agricultural Communications1-2
 AEE 4945 Agricultural Technology Education Option Internship1-2
AEE or *Approved Electives4-7
 29

Total Credit Hours:120
 *Natural Resources and Environmental Management; Leadership and Extension; Communications; Foreign Language; Agriculture; or Approve course.

(b) Extension Development

The Extension Development Program is designed to prepare students for careers in educational leadership, training and outreach within agricultural extension. Students complete courses with emphasis in agriculture leadership, community development, non-formal education and sustainable development.

Freshman Year

ENC 1011, 1102 Freshman Communication Skills6
 Humanities Electives6
 MAC 1147 Pre-Calculus, MAC 23118
 BSC 1005, 1010C Biological Science
or
 BSC 1010C, 1011C General Biology I & II8
 ECO 2013 Principles of Economics I3
AGG 2004 Intro. to Ag. Sciences1
 32

Sophomore Year

CHM 1045, 1046L General Chemistry4
 SPC 2600 Public Speaking3

AMH 2091 African-American History3
 ENC 2210 Technical Report Writing **or**
 OST 3337 Business Report Writing3
 PHY 2048 General Physics4
 Approved Computer Application Elective3
 SYG 2000 Principles of Sociology **or**
 ANT 2000 Introduction to Anthropology **or**
 EDG 3210 Educational Psychology3
 STA 2023 Probability and Statistics3
 AEE 3417 Leadership Program in Agriculture2
HOS 3010C Horticultural Science3
 31

Junior Year

*AEE 4418 Leadership Development in Agriculture3
 *AEE 4256 Educational Programs in Agriculture for Dev. Countries ...2
 Foreign Language4
 MAN 3025 Principles of Management **or**
 ECP 4222 Human Resource Management **or**
 GEO 3354 Environment and Human Ecology **or**
 ABE 3212 Natural Resource Conservation Engineering **or**
 SWS 3211 Soil and Water Conservation3
 AEE 3940 Agricultural Field Experience1
 ANS 3006 Introduction to Animal Science4
 SWS 3022, 3022L Nature and Properties of Soils4
 ENY 2570 Introduction to Agricultural Entomology **or**
 FOR 3093 Forestry and Urban Environments3
Electives7-8
 28-29

Senior Year

AEE 4301 Sustainable Agriculture2
 *AEE 4039 Strategies in Agricultural Communication3
 AEE 4208 Methods in Teaching Agricultural Extension3
 AEE 4436 Developing Community & Volunteer Leadership Programs **or**
 Adult Education Elective3
 AEE 4455 Methods and Approach to International
 Agricultural Extension Programs3
 AEE 4251 Sustainable Dev.: Program Development & Evaluation3
 AEE 4326 Transfer and Adoption of Technology2
 AGG 4414 Women in Development2
 AEE 4945 Agricultural Extension InternshipVAR

 AEE 4936 Forum on Agricultural Technology Education1
Foreign Language4
 27-28

Total Credit Hours:120

(c) AgroEcology

Students who are interested in alternative agriculture, environmental sciences and sustainable development should consider AgroEcology. AgroEcology examines interrelationships among environment, agriculture, community/local and global challenges, adoption of technology and sustainable development.

Freshman Year

ENC 1011, 1102 Freshman Communicative Skills6

| | |
|-----------------------------------------------------|----|
| Approved Humanities Electives | 6 |
| MAC 2311, 2312 Calculus I, II | 8 |
| BSC 1005, 1010C Biological Science or | |
| BSC 1010C, 1011C General Biology I & II | 8 |
| AGG 2004 Introduction to Agricultural Science | 1 |
| Approved Computer Applications Elective | 3 |
| | 32 |

Sophomore Year

| | |
|-------------------------------------------------|----|
| CHM 1045, 1046L General Chemistry | 8 |
| SPC 2600 Public Speaking | 3 |
| AMH 2091 African-American History | 3 |
| ENC 2210 Technical Report Writing | 3 |
| PHY 2049, 2049A General Physics | 5 |
| ECO 2013 Principles of Economics | 3 |
| SYG 2000 Principles of Sociology or | |
| ANT 2000 Introduction to Anthropology or | |
| EDF 3210 Educational Psychology | 3 |
| CHM 2210 Organic Chemistry 1 w/L | 4 |
| | 32 |

Junior Year

| | |
|------------------------------------------------------------|----|
| ECO 2023 Principles of Economics | 3 |
| PCB 3033 Introduction to Ecology | 3 |
| *AEB 3105 Principles of Food and Resource Economics | 3 |
| EVR 3028 Environmental Modeling or | |
| GEO 3354 Environment and Human Ecology or | |
| GEO 2370 Conservation or | |
| SWS 3211 Soil and Water Conservation | 3 |
| ABE 3212C Natural Resources Conservation Engineering | 4 |
| HOS 3010C Horticultural Science or | |
| AGR 3210 Field Crop Science | 3 |
| FOR 3093 Forestry in Rural and Urban Environment | 3 |
| or | |
| Approved Agriculture Electives | |
| ENY 2570 Introduction to Agricultural Entomology | 3 |
| AEE 3940 Field Experience | 1 |
| STA 3137 Statistics II | 3 |
| AEE 4415 Agroecosystem Management | 2 |
| Electives | 3 |
| | 34 |

Senior Year

| | |
|--------------------------------------------------------------------|-----|
| AEE 4301 Sustainable Agriculture | 2 |
| SWS 4131C Soil Fertility and Fertilizers or | |
| ABE 4701 Agricultural Waste Management Engineering | 3 |
| EVS 3024C Environmental Instrumentation & Analytical Techniques .. | 4 |
| AEE 4326 Transfer and Adoption of Technology | 3 |
| or | |
| AGG 4414 Women in Development | 2 |
| or | |
| *AEE 4251 Sustainable Dev: Program Development & Evaluation | 3 |
| EVR 4032 Environmental Ethics | 3 |
| EVS, EVR, Approved Electives | 7 |
| AEE 4945 Natural Resources & Environmental Mgt Internship | VAR |
| AEE 4936 Agricultural Technology Seminar | 1 |
| AEE 4936 Forum on Agricultural Technology Education | 1 |
| | 25 |

Total Credit Hours:120**III. Major in Agronomy**

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 1104 College Algebra | 3 |
| BSC 1010, 1010L General Biology | 4 |
| ENC 1102 Freshman Communicative Skills II | 3 |
| AMH 2091 African American History | 3 |
| MAC 1133 Algebraic & Trig. Functions | 3 |
| BSC 1011, 1011L General Biology I | 4 |
| | 30 |

Sophomore Year

| | |
|-----------------------------------------------|----|
| Humanities Elective | 3 |
| CHM 1045, 1045L General Chemistry I. | 4 |
| PHY 2053 College Physics | 4 |
| CHM 1046, 1046L General Chemistry II | 4 |
| ECO 2023 Principles of Economics I | 3 |
| PSY 2012 Introduction to Psychology | 3 |
| Approved Computer Applications Elective | 3 |
| BOT 1010C Elementary Botany | 4 |
| | 28 |

Junior Year

| | |
|------------------------------------------------|----|
| 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 | 4 |
| | 30 |

Senior Year

| | |
|-------------------------------------------------------------|----|
| BOT 3503C Plant Physiology | 4 |
| AGG 4935 Agri. Senior Seminar | 1 |
| AGR 4512 Plant Ecology | 3 |
| AGR 3232C Pasture and Range Management | 3 |
| ENC 3210 Tech. Report 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 |
| | 32 |

Total Credit Hours:120

*Electives are selected subject to the approval of the academic advisor. ABE 4034C, AGR 4430C, AGR 4905, & AGR 3232C, AGG 2050C.

IV. Major in Entomology

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 | .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. | .4 |
| 30 | |

Sophomore Year

| | |
|------------------------------------------------------------|----|
| 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 |
| 31 | |

Junior Year

| | |
|--------------------------------------------------------|----|
| BOT 1010 Botany w/Lab (1010L) | .4 |
| CHM 2210, 2210L Organic Chemistry I | .4 |
| PCB 2033C Introduction to Ecology | .3 |
| ENY 2570 Principles of Environmental Entomology | .3 |
| ENY 4150 Systematic Entomology | .3 |
| PCB 3063C Principles of Genetics | .4 |
| STA 3023 Introduction to Probability and Statistics I. | .3 |
| ZOO 2203 Invertebrate Zoology | .3 |
| Elective (Agriculture or Entomology Elective)** | .3 |
| 30 | |

Junior Year - Summer

| | |
|--------------------------------|----------------|
| ENY 3949 Entomology Internship | .1-6(variable) |
|--------------------------------|----------------|

Senior Year

| | |
|----------------------------------------------------------|--------|
| ENY 4354C Insect Morphology | .4 |
| AGG 4935 Senior Seminar or ENY 4931 | .1 |
| *Approved Electives (Entomology, Agriculture, Biology)** | .12-17 |
| Free Electives | .6 |
| 23-28 | |

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.

V. Major in Ornamental Horticulture

The ornamental horticulture major emphasizes the need to improve and expand the number of plant species used for their environmental, aesthetic, and emotional values. The program is designed to prepare students for careers in plant nursery operations, landscape design, commercial plant sales, state and federal jobs in national forests and parks, and teaching in horticulture.

| Freshman Year | Sem. Hrs. |
|------------------------------------|-----------|
| ENC 1101, Freshman Comm. Skills I | .3 |
| MAC 1104 College Algebra | .3 |
| AGG 2004 Intro to Agri. Sci. | .1 |
| BSC 1010, 1010L General Biology I. | .4 |
| ENC 1102 Freshman Comm Skills II | .3 |
| MAC 1133 Algebra & Trig. Functions | .3 |
| BSC 1011, 1011L General Biology II | .4 |
| BOT 1010C Elementary Botany. | .4 |
| Social Science Elective | .3 |
| 28 | |

Sophomore Year

| | |
|-----------------------------------------|----|
| Humanities Elective | .3 |
| AMH 2091 African American History | .3 |
| CHM 1045, 1045L General Chemistry I. | .4 |
| HOS 3010C Horticultural Science | .3 |
| CHM 1046, 1046L General Chemistry II | .4 |
| ECO 2013 Principles of Economics | .3 |
| STA 2023 Intro. to Statistics | .3 |
| Humanities Elective | .3 |
| Approved Computer Applications Elective | .3 |
| Elective | .4 |
| 33 | |

Junior Year

| | |
|------------------------------------------------|----|
| PCB 3063 Intro. to Genetics | .3 |
| ENY 2570, Principals of Environment Entomology | .3 |
| CHM 2210, 2210L Organic Chemistry I | .4 |
| ORH 3513 Landscape Plants I | .4 |
| CHM 2211, 2211L Organic Chemistry II | .4 |
| SWS 3022, 3022L Nature and Properties of Soils | .3 |
| AGG 2050C Introduction to Biotechnology | .3 |
| ENY 3560 Pests of Ornamentals & Turf. | .3 |
| ORH 3518 Landscape Plants II | .4 |
| 31 | |

Summer Semester

| | |
|------------------------------|---|
| ORH 4949 or 3949 Internship. | 2 |
|------------------------------|---|

Senior Year

| | |
|-----------------------------|----|
| BOT 3504C Plant Pathology. | .4 |
| ORH 4253 Nursery Management | .3 |

BOT 3503 Plant Physiology4
 PLS 3223C Plant Propagation4

The remaining 11 hours required for completion of the requirements for the B.S. degree may be selected from the following courses:

AEB 3134 Principles of Agribusiness Management3
 AGR 4512 Plant Ecology3
 FRC 3801 Introduction to Viticulture4
 ORH 3222 Turfgrass Culture3
 ORH 4232 Arboriculture4
 ORH 4261 Commercial Floriculture3
 ORH 4095 Tropical Foliage Plants4
 ORH 4861 Professional Administration3
 ORH 4934 Seminar I1
 ORH 4935 Seminar II1
 SWS 3211C Soil and Water Conservation3
 SWS 4427 Soil and Plant Analysis3

35

Total Credit Hours120

VI. Major in Food Science

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. Employment opportunities are available throughout the country.

Freshman Year

Sem. Hrs.

AGG 2004 Introduction to Agricultural Sciences1
 AMH 2010 U.S. History: 1492 to 18653
 BSC 1010, 1010L General Biology I4
 ENC 1101 Freshman Communication Skills I3
 Approved Computer Applications Elective3
 CHM 1045, 1045L General Chemistry I4
 ENC 1102 Freshman Communication Skills II3
 BSC 1011, 1011L General Biology II4
 FOS 2002 Food and Man3

28

Sophomore Year

CHM 1046, 1046L General Chemistry II4
 MAC 1147 Pre Calculus Mathematics4
 AMH 2091 African American History3
 Humanities General Education Requirement3
 CHM 2210, 2210L Organic Chemistry I4
 HUN 2401 Human Nutrition3
 Social Science General Education3
 MAC 2311 Calculus with Analytic Geometry4
 Elective at 2000 and above level4

32

Junior Year

FOS 3042, 3042L Introduction to Food Science4
 BCH 4033, 4033L Biochemistry I4
 STA 2023 Introduction to Probability & Statistics I3
 Ethics Requirement3
 AGG 2050 Introduction to Biotechnology2

PHY 2053, 2048L College Physics4
 FOS 4930 Seminars in Food Science1
 FOS 4222C Food Microbiology and Safety4
 FOS 3429 Processing of Plant Food3
 *Electives (3000 or higher)3-4

31

Senior Year

FOS 4321C Food Analysis4
 FOS4454C Food Fermentation3
 MAN 3025 Principles of Management3
 FOS 4940 Practical Food Experience4
 *Restricted Elective3
 FOS 4311, 4311L Food Chemistry4
 FOS 4425 Food Manufacturing & Storage3
 *Electives (3000 or higher)6

30

*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.

Total Credit Hours:120

Forestry and Natural Resources Conservation Program

Associate of Arts

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 operates on a two tier basis.

The curriculum of the Associate in Arts degree 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 the Associate in Arts degree leaves off. Student continues their education in one of several specialties 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 I3
 AMH 2091 African American History3
 MAC 1133 Algebraic and Trig. Functions3
 BSC 1010, 1010L General Biology I4
 ENC 1102 Freshman Communicative Skills II3
 FOR 3093 Forestry & Urban Environments3
 BSC 1011, 1011L General Biology II4
 Humanities I Elective3
 PSY 2012 Intro. to Psychology3
 CHM 1045, 1045L General Chemistry4

33

Sophomore Year

AGG 2004 Introduction to Agricultural Science1
 MAC 2231 Business Calculus4

SwS 3022, 3022L Nature & Properties of Soils4
 STA 2013 Intro. to Probability and Statistics3
 Approved Computer Application Elective3
 SPC 2600 Public Speaking3
 PHY 2048 College Physics4
 Restricted Elective/Predendrology2
 ECO 2023 Principles of Economics3
 Humanities II Elective3

30

Total Credit Hours:63

Division of Engineering Sciences and Technology

The Division of Engineering Sciences and Technology offers two distinct programs of study: (1) Engineering Sciences and (2) Engineering Technology. The Engineering Sciences programs strive to educate and train engineers to use their scientific knowledge and problem-solving skills to determine the best solution to the problems of today and the future. The Engineering Technology programs prepare technologists to apply engineering principles to build, operate and manage systems. While the engineering program provides a strong scientific base and analytical skills, the engineering technology programs focus on applying engineering principles.

Faculty

Professors: Abdullah, Makola (Dean); Bellarmine, Thomas, P.E.Magee, Charles (Director)

Associate Professors: Anglade, Yves J.

Assistant Professors: Bellamy, Norman C.G.C.; Li, Chao; Muhammad, Rabbani, A.I.A.;

Instructors: Akinsanya, David; Carter, Crystal; Prosper, Leon

Engineering Sciences Programs

The only Engineering degree program offered by the Division is the Bachelor of Science degree in Biological and Agricultural Systems Engineering. It includes two options in:

1. Natural Resources Engineering
2. Bioprocessing and Food Engineering

The program provides the students with a strong background in engineering fundamentals, by incorporating a series of engineering science courses offered through the College of Engineering. It then provides a professional focus by combining courses in agricultural, biological and chemical engineering. The graduates of the program will work as engineers in industry and government solving complex engineering problems or designing products and processes.

Bachelor of Science in Biological and Agricultural Systems Engineering

Program Educational Objectives

1. Provide students with the fundamental knowledge needed to successfully practice the profession of agricultural and biological engineering.
2. Train graduates to design, test and analyze agricultural and biological systems, processes and components.
3. Train graduates to identify, formulate and solve engineering problems; and to use modern computational and experimental equipment.
4. Provide a well-rounded education that enhances communication skills and imparts a sense of professional and societal responsibility upon our graduates.

BASE Teaching Program Outcomes via ABET-2002 Criterion 3 (a-k)

The expected outcomes of BASE teaching program have been established as follows, demonstrating that graduates have:

- a). Demonstrate mastery of knowledge, techniques, skills and modern tools of the discipline;
- b). Apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology;
- c). Conduct, analyze and interpret experiments and apply experimental results to improve processes;
- d). Apply creativity in the design of systems, components or processes appropriate to program objectives;
- e). Function effectively on teams;
- f). Identify and analyze and solve technical problems;
- g). Communicate effectively;
- h). Recognize the need for and process the ability to pursue lifelong learning;
- i). Understand professional, ethnical and societal responsibility;
- j). Recognize contemporary professional, societal and global issues and are aware of and respect diversity; and
- k). Have a commitment to quality, timeliness and continuous improvement.

Biological and Agricultural Systems Engineering (BASE) is a branch of engineering which integrates agricultural, biological, chemical, and engineering sciences. It focuses on solving current problems related to natural resource management and conservation as well as biological and agricultural production and processes. The 128 semester hour curriculum provides the BASE students the opportunity to choose one of two major emphasis areas, i.e., natural resource conservation engineering or bioprocessing and food engineering. The program is accredited by the Accreditation Board for Engineering and Technology (ABET) and is designed to prepare students for careers in private industry, consulting, government agencies (including local, state, and federal government agencies such as USDA and EPA), educational institutions, graduate programs, medicine and many other fields.

Natural Resources Conservation Engineering Option

| Freshman Year | Sem. Hrs. |
|--------------------------------------------------|-----------|
| ENC 1101 Communicative Skills I | 3 |
| BSC 1010 Biology I | 3 |
| BSC 1010L Biology I Lab | 1 |
| MAC 2311 Calculus I. | 4 |
| ABE 1010 Introduction to BASE. | 1 |
| EGN 2123 Computer Graphics for Engineering | 2 |
| AMH 2091 African-American History | 3 |
| ENC 1102 Communicative Skills II | 3 |
| BSC 1011 Biology II | 2 |
| BSC 1011 Biology II Lab | 2 |
| MAC 2312 Calculus II | 4 |
| SUR 2140 Elementary Surveying. | 3 |
| <u>SUR 2140L Elementary Surveying Lab</u> | <u>1</u> |
| | 32 |

| Sophomore Year | Sem. Hrs. |
|------------------------------------------|-----------|
| Humanities Elective | 3 |
| PHY 2048 General Physics I | 4 |
| PHY 2048L General Physics I Lab | 1 |
| CHM 1045 Chemistry I | 3 |
| CHM 1045L Chemistry Lab | 1 |
| MAC 3313 Calculus III | 5 |
| PHY 2049 General Physics II | 4 |
| PHY 2049L General Physics II Lab | 1 |
| ECO 2013 Principles of Economics I | 3 |

| | |
|---------------------------------------------|----------|
| Humanities Elective | 3 |
| ABE 2001L Computers/Natural Resources | 1 |
| CHM 1046 Chemistry II | 3 |
| <u>CHM 1046L Chemistry II Lab</u> | <u>1</u> |
| | 33 |

| | |
|---------------------------------------------------------------|------------------|
| Junior Year | <i>Sem. Hrs.</i> |
| SOS 3022 Nature and Properties of Soils. | 3 |
| SOS 3022L Nature and Properties of Soils Lab | 1 |
| EEL 3003 Introduction to Electrical Engineering | 3 |
| EEL 3003L Intro. to Electrical Engineering Lab | 1 |
| ABE 3013Intro. to Design Analysis | 3 |
| COP 2221 Programming in C Language | 3 |
| EML 3100 Thermodynamics. | 2 |
| ABE 3650 Engineering Properties of Biological Materials | 3 |
| MAP 3305 Engineering Mathematics | 3 |
| ABE 3212C Resources Conservation Engineering | 4 |
| EGN 3311 Civil Engineering Mechanics | 4 |
| <u>EML 3015C Thermal-Fluids I</u> | <u>4</u> |
| | 34 |

| | |
|-------------------------------------------------------|------------------|
| Senior Year | <i>Sem. Hrs.</i> |
| ABE 4042Senior Design Project I | 2 |
| EML 3016C Thermal-Fluids II | 4 |
| ABE 4224 Non-Point Source Pollution. | 3 |
| ENC 3210 Technical Writing | 3 |
| ETG 4939 Professional Seminar | 1 |
| EGN 3331 Strength of Materials. | 3 |
| ABE 4043 Senior Design Project II | 2 |
| STA 3023 Probability & Statistics | 3 |
| ABE 4232 Water Management Systems | 3 |
| ABE 4612 Environmental Modifications & Controls | 3 |
| <u>Engineering or Science Elective</u> | <u>2</u> |
| | 29 |

Total Credit Hours:128

Engineering and Science Electives must be selected from 3000 level courses with advisors' approval. ABE 4830 and ABE 4701 can be used as electives when offered.

Bioprocessing and Food Engineering Option

| | |
|-------------------------------------------------|------------------|
| Freshman Year | <i>Sem. Hrs.</i> |
| ENC 1101 Communicative Skills I. | 3 |
| BSC 1010 Biology I | 3 |
| BSC 1010L Biology Lab | 1 |
| MAC 2311 Calculus I. | 4 |
| ABE 1010 Intro. to BASE | 1 |
| EGN 2123 Computer Graphics in Engineering | 2 |
| AMH 2091 Afro-American History | 3 |
| ENC 1102 Communicative Skills II | 3 |
| BSC 1011 Biology II | 2 |
| BSC 1011L Biology II Lab | 2 |
| MAC 2312 Calculus II | 4 |
| CHM 1045 Chemistry I | 3 |
| CHM 1045L Chemistry I Lab | 1 |
| <u>ECO 2013 Principles of Economics I</u> | <u>3</u> |

35

| | |
|----------------------------------------------------|------------------|
| Sophomore Year | <i>Sem. Hrs.</i> |
| CHM 1046 Chemistry II | 3 |
| CHM 1046L Chemistry II Lab | 1 |
| PHY 2048 General Physics I | 4 |
| PHY 2048L General Physics I Lab | 1 |
| MAC 3313 Calculus III. | 5 |
| Humanities Elective | 3 |
| PHY 2049 General Physics II | 4 |
| PHY 2049L General Physics II Lab | 1 |
| Humanities Elective | 3 |
| MCE 3020 Microbiology | 3 |
| MCE 3020L Microbiology Lab | 1 |
| STA 2023 Probability & Statistics | 3 |
| <u>ABE 2001L Computers/Natural Resources</u> | <u>1</u> |
| | 33 |

| | |
|---------------------------------------------------------------|------------------|
| Junior Year | <i>Sem. Hrs.</i> |
| EML 3015C Thermal-Fluids I | 4 |
| CHM 2210 Organic Chemistry I | 3 |
| CHM 2210L Organic Chemistry I Lab | 1 |
| ABE 3013 Introduction to Design Analysis | 3 |
| EEL 3003 Intro. to Electrical Engineering | 3 |
| EEL 3003L Intro. to Electrical Engineering Lab | 1 |
| COP 2221 Programming in C Language | 3 |
| EML 3100 Thermodynamics. | 2 |
| ABE 3650 Engineering Properties of Biological Materials | 3 |
| MAP 3305 Engineering Mathematics | 3 |
| ABE 3212C Resources Conservation Engineering | 4 |
| <u>EGN 3331 Civil Engineering Mechanics</u> | <u>4</u> |
| | 34 |

| | |
|-------------------------------------------------------|------------------|
| Senior Year | <i>Sem. Hrs.</i> |
| ABE 4042 Senior Design Project I | 2 |
| EML 3016C Thermal-Fluids II | 4 |
| ABE 4812 Food and Bioprocessing Engineering. | 3 |
| ENC 3210 Technical Writing | 3 |
| ETG 4939 Professional Seminar. | 1 |
| EGN 3331 Strength of Materials | 3 |
| ABE 4043 Senior Design Project II | 2 |
| ABE 4661 Biochemical Engineering | 3 |
| ABE 4612 Environmental Modifications & Controls | 3 |
| <u>Engineering or Science Elective</u> | <u>2</u> |
| | 26 |

Total Credit Hours:128

Engineering Science Electives must be selected from 3000 level courses with advisors' approval. ABE 4830 and ABE 4701 can be used as electives when offered.

Engineering Technology Programs

Engineering Technology Programs prepare men and women 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 roles 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.

The Division offers the following Bachelor of Science degree programs or options in engineering technology:

- Bachelor of Science in Electronic Engineering Technology
- Bachelor of Science in Civil Engineering Technology
- Bachelor of Science in Construction Engineering Technology

The main campus programs in Electronic Engineering Technology, Civil Engineering Technology, and Construction Engineering Technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET). For information related to accreditation, please contact ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202.

Bachelor of Science in Construction Engineering Technology

The program 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. In addition, students may complete elective courses in surveying, engineering and technology through the Civil Engineering Technology program and other academic units at FAMU. 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

| Semester I | Sem. Hrs. |
|-------------------------------------------------|-----------|
| ENC 1101 Freshman Communication Skills I | .3 |
| MAC 1147 Pre-Calculus Math | .4 |
| AMH 2091 African-American History | .3 |
| BCN 1221C Building Construction | .4 |
| EGS 1110C Engineering Graphics I (with AUTOCAD) | .1 |
| 15 | |

Semester II

| | |
|---------------------------------------------|----|
| ENC 1102 Freshman Communication Skills II | .3 |
| MAC 2311 Calculus with Analytic Geometry I | .4 |
| CHM 1030 General Chemistry w/Lab | .4 |
| EGS 1112C Engineering Graphics II (AUTOCAD) | .3 |
| PHI 2010 Introduction to Philosophy | .3 |
| 17 | |

Sophomore Year

| Semester I | |
|------------------------------------------------|----|
| CLAST Exam | .0 |
| SUR 2140 Elementary Surveying w/Lab | .4 |
| BCN 2230 Materials & Methods of Construction I | .3 |
| MAC 2312 Calculus II | .4 |
| PHY 2053 General Physics & Lab | .4 |
| 15 | |

Semester II

| | |
|--------------------------------------|----|
| ETG 2502 Statics | .3 |
| ECO 2013 Principles of Economics I | .3 |
| GLY 2010 Principles of Geology w/Lab | .3 |

| | |
|-------------------------------------------------|----|
| SPC 2600 Public Speaking | .3 |
| BCN 2231 Materials & Methods of Construction II | .3 |
| 16 | |

Junior Year

Semester I

| | |
|----------------------------------------------|----|
| ETG 2530 Strength of Materials w/Lab | .4 |
| BCN 4617 Construction Estimating I | .3 |
| BCN 3565C Electrical Systems in Construction | .3 |
| BCN 3251 Construction Documents I | .3 |
| BCN 4705 Contracts, Codes & Law | .3 |
| 16 | |

Semester II

| | |
|-----------------------------------------------|----|
| BCN 3700 Construction Management I | .3 |
| ETC 3211 Soil Mechanics and Foundations w/Lab | .4 |
| BCN 3253 Construction Accounting | .3 |
| BCN 3566C Electromechanical Systems | .3 |
| ENC 3243 Technical Report Writing | .3 |
| 16 | |

Senior Year

Semester I

| | |
|------------------------------------------------------------|----|
| BCN 3701 Construction Management II | .3 |
| BCN 4782 Computer Applications for Construction Management | .3 |
| ETC 4454 Reinforced Concrete I w/Lab | .4 |
| BCN 3720 Construction Planning and Scheduling | .3 |
| CET 2365 C-Programming | .3 |
| 16 | |

Semester II

| | |
|----------------------------------------------|----|
| 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 | .2 |
| PHI 3601 Ethics | .3 |
| 14 | |

Total Credit Hours**124**

Students should ensure that all prerequisites are satisfied before registering for any course. Refer to the University Catalog or see your advisor if you have any questions.

Construction Engineering Technology: Technical Electives*

The following are guidelines concerning technical electives:

1. Any course in the Design Sequence.
2. Any Civil Engineering Technology Upper Division Course.
3. Any Upper Division Course Approved by a Faculty Advisor.
4. Any FAMU-FSU College of Engineering Upper Division Course Approved by a Faculty Advisor
5. Any Business course approved by the faculty.

Concentration in Construction Engineering Technology:

Students completing a bachelor's degree in other academic programs may earn a minor in Construction Engineering Technology by completing the following courses (18 credit hours):

1. BCN 3251 Construction Documents I

| | | |
|-------------|-----------------------------------------|---|
| 2. BCN 2230 | Materials and Methods of Construction I | 3 |
| 3. BCN 4617 | Construction Estimating I | 3 |
| 4. BCN 3700 | Construction Management I | 3 |
| 5. BCN 3253 | Construction Accounting | 3 |
| 6. BCN 4705 | Contracts, Codes & Law | 3 |

18 credit hours

Bachelor of Science in Civil Engineering Technology

The Civil Engineering Technology program prepares graduates to work in the career directions of civil technology systems and the surveying professions. The program includes the disciplines of surveying planning transportation, engineering facilities operation, structural systems, geo-technical and technical governmental service support.

The civil engineering technologist works as part of a team with civil engineers and other professionals. The technologist's qualifications must include training in both theoretical and practical applications of the basic principles of engineering. The Civil Engineering Technology curriculum has been designed to meet these requirements and leads to the Bachelor of Science (BS) degree in Civil Engineering technology. The program offers a formal minor conferred at the program area level and a professional certification training program. The on campus BS degree is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC /ABET).

The Florida Board of Professional Surveyors and Mappers has recognized the surveying option as an approved course of study in land surveying. Students in this option will be expected to take the land Surveyor Test (LST) during their senior year.

Freshman Year

| Semester I | Sem. Hrs. |
|------------------------------------------|-----------|
| ENC 1101 Freshman Communicative Skills I | 3 |
| MAC 1147 Pre-Calculus Mathematics | 4 |
| Social Science Electives | 3 |
| Humanities Elective | 3 |
| SUR 2140 Elementary Surveying | 3 |
| SUR 2140L Elementary Surveying Lab | 1 |
| | 17 |

Semester II

| | |
|--------------------------------------------|----|
| MAC 2311 Calculus with Analytic Geometry I | 4 |
| ENC 1102 Freshman Communicative Skills II | 3 |
| CHM 1020 Fundamentals of Chemistry | 3 |
| Humanities Elective | 3 |
| EGS 1110 Engineering Graphics I w/AUTOCAD | 4 |
| | 17 |

Sophomore Year

| Semester I | Sem. Hrs. |
|---------------------------------------------|-----------|
| ETG 4939 Professional Seminar & Development | 1 |
| MAC 2312 Calculus with Analytic Geometry II | 4 |
| PHY 2048 General Physics I and Rec | 4 |
| PHY 2048L General Physics I Lab | 1 |
| ETG 2502 Statics | 3 |
| AMH 2091 African American History | 3 |
| CLAST College Level Academic Skills Test | 0 |
| | 16 |

Semester II

| | |
|--------------------------|---|
| ETG 2510 Dynamics | 3 |
| STA 2023 Statistics | 3 |
| SPC 2600 Public Speaking | 3 |

| | |
|----------------------------------|----|
| PHY 2049 General Physics II | 4 |
| PHY 2049L General Physics II Lab | 1 |
| Technical Elective | 2 |
| | 16 |

Junior Year

Semester I

| | |
|-----------------------------------|----|
| SUR 3200 Highway Surveying | 3 |
| SUR 3200L Highway Lab | 1 |
| ETM 3316 Hydraulics | 3 |
| ETM 3316L Hydraulics Lab | 1 |
| ENC 3243 Technical Report Writing | 3 |
| CET 2365 C-Programming | 3 |
| | 14 |

Semester II

| | |
|-------------------------------------|----|
| ETG 2530 Strength of Materials | 3 |
| ETG 2530L Strength of Materials Lab | 1 |
| ETM 3820 Engineering Materials | 3 |
| ETM 3820L Engineering Materials Lab | 1 |
| ETC 3210 Soil Mechanics | 3 |
| ETC 3210 Soil Mechanics Lab | 1 |
| ETC 3401 Computer Applications I | 3 |
| | 14 |

Senior Year

Semester I

| | |
|---------------------------------------------|----|
| ETC 4454 Reinforced Concrete I | 3 |
| ETC 4454L Reinforced Concrete I Lab | 1 |
| EET 2035 Electrical Fundamentals I with Lab | 4 |
| ETC 4216 Site Investigations | 3 |
| ETC 2500 Transportation I | 4 |
| | 15 |

Semester II

| | |
|--------------------------------------------|----|
| ETC 4970 Technical Project | 2 |
| Technical Elective | 3 |
| ETC 4455 Reinforced Concrete II | 3 |
| SUR 4300 Topography and Hydrology | 3 |
| SUR 4300L Topography and Hydrology Lab | 1 |
| ETI 4671 Principles of Engineering Economy | 2 |
| | 14 |

Total Credit Hours124

The Civil Engineering Technology (Minor) Concentration

A formal minor in civil engineering technology is offered at the program area level. The minor is open to all non-civil engineering technology majors and consists of eighteen (18) credits of course work as listed below:

| | |
|-----------------------------------------|---|
| ETG 2502 Statics | 3 |
| ETG 2530 Strength of Materials with Lab | 4 |
| ETC 2500 Transportation I | 4 |
| ETC 3210 Soil Mechanics | 3 |
| ETC 4454 Reinforced Concrete I With Lab | 4 |

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 graduate 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, marketing and sales, and with federal, state, and local governments.

Freshman Year

Semester I

| | |
|-----------------------------------------|----------|
| ENC 1101 Freshman Comm. Skills I | 3 |
| Humanities Elective | 3 |
| EET 2035 Electrical Fundamentals I | 3 |
| EET 2035L Electrical Fundamentals I Lab | 1 |
| AMH 2091 African American History | 3 |
| MAC 1147 Pre-Calculus Mathematics | 4 |
| | <hr/> 17 |

Semester II

| | |
|--------------------------------------------------------------|----------|
| ENC 1102 Freshman Comm. Skills II | 3 |
| CET 2365C Computer Programming in Engineering and Technology | 3 |
| MAC 2311 Calculus with Analytic Geometry I | 4 |
| Humanities Elective (PHI 3601 Ethics) | 3 |
| EET 2036 Electrical Fundamentals II | 3 |
| EET 2036L Electrical Fundamentals II Lab | 1 |
| | <hr/> 17 |

Sophomore Year

Semester I

| | |
|------------------------------------------|----------|
| ENC 3210 Technical Report Writing | 3 |
| PHY 2048 General Physics I | 4 |
| PHY 2048L General Physics I Lab | 1 |
| EET 2106 Electronic Dev. and Cir. I | 3 |
| EET 2106L Electronic Dev. and Cir. I Lab | 1 |
| MAC 2312 Calculus II w/Analytical Geo II | 4 |
| | <hr/> 16 |

Semester II

| | |
|-------------------------------------------|----------|
| CHM 1045 General Chemistry I | 3 |
| CHM 1045L General Chemistry I Lab | 1 |
| Social Science Elective | 3 |
| PHY 2049 General Physics II | 4 |
| PHY 2049L General Physics II Lab | 1 |
| EET 3107 Electronic Dev. and Cir. II | 3 |
| EET 3107L Electronic Dev. and Cir. II Lab | 1 |
| | <hr/> 16 |

Junior Year

Semester I

| | |
|------------------------------------------|----------|
| 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 |
| ETG 4939 Prof. Seminar/Development | 1 |
| STA 2023 Statistics | 3 |
| | <hr/> 15 |

Semester II

| | |
|-------------------------------------------------|----------|
| EET 3326 Advanced Comms. Systems | 3 |
| EET 3326L Advanced Comms. Systems Lab | 1 |
| EET 4735 Industrial Electronics & Controls | 3 |
| EET 4735L Industrial Electronics & Controls Lab | 1 |
| ET 4328 Wireless Communication | 3 |
| EET 4328L Wireless Communication Lab | 1 |
| CET 2123 Microprocessor Fundamentals | 3 |
| CET 2123L Microprocessor Fundamentals Lab | 1 |
| | <hr/> 16 |

Senior Year

Semester I

| | |
|--------------------------------------|----------|
| EET 2142 Advanced Electronics I | 3 |
| EET 2142L Advanced Electronics I Lab | 1 |
| EPC 2600 Public Speaking | 3 |
| Technical Elective | 4 |
| Technical Elective | 4 |
| | <hr/> 15 |

Semester II

| | |
|-----------------------------------------------------------|------------|
| EET 4322 Advanced Electronics II | 3 |
| EET 4322L Advanced Electronics II Lab | 1 |
| EET 4914 Electronic Engineering Technology Design Project | 4 |
| EST 4538 Instrumentation | 3 |
| EST 4538L Instrumentation Lab | 1 |
| ETI 4671 Prin. of Engineering Economy | 2 |
| | <hr/> 14 |
| Total Credit Hours | 126 |

Technical Electives:

| | |
|-----------------------------------------------|-----|
| EET 4344 Microwave | 3 |
| EET 4344L Microwave Lab | 1 |
| EET 4941 Internship | var |
| EGS 1112 Engineering Graphics II (AUTOCAD) | 3 |
| EST 3222 Advanced Comm. and Fiber Optics | 3 |
| EST 3222L Advanced Comm. and Fiber Optics Lab | 1 |
| CET 4488 Data Comms and Networking | |
| CET 4488L Data Comms and Networking Lab | 1 |
| CET 4149 Microprocessors Interfacing | 3 |
| CET 4149L Microprocessors Interfacing Lab | 1 |
| CET 4542 Computer Architecture | 3 |
| CET 3010 Concepts in Computer Technology | 3 |
| CET 3350 Applied Data Structures | 3 |

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 mentally 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: Blumenstock, Elvis E., Col/USMC

Associate Professor: Guess, Kenneth, CDR/USN

Assistant Professors: Montas, Sunny M., Maj/USMC; Farward, Tim W., LT/USN; Toney, Al, LT/USN

Staff: Hall, Anthony D., HRA; Parks, Curt, Supply Officer; Polson, Michael S., GySgt/USMC, AMOI; Sharpe, Ila D., Senior Secretary

The Navy-Marine Corps Four-Year Scholarship Program-The NROTC Scholarship Program is open to young men and women of all races, creeds, and national origin 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 \$250.00 (freshman), \$300.00 (sophomores), \$350.00 (juniors), and \$400.00 (seniors).

Scholarship students are normally selected through national competition during their senior year in high school. Each year about fifteen HBCU Scholarships are available through a competitive selection process to high school seniors 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 four 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. Students, upon graduation and successful completion of the naval science curriculum, 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 a 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 Organization (Note 1) | | 3 |
| NSC 1140 Seapower and Maritime Affairs (Note 1) | | 3 |
| NSC 1101 Naval Science Lab | | 0 |

| Sophomore Year | Sem. | Hrs. |
|----------------------------------------------------|-------|------|
| NSC 2231 Principles of Naval Management I (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 | Sem. | Hrs. |
|------------------------------------------------|-------|------|
| NSC 2121 Naval Engineering (Note 4) | | 3 |
| NSC 2122 Naval Weapons Systems (Note 4) | | 3 |
| NSC 3221 Evolution of Warfare (Note 2) | | 3 |
| Amer. Military History/International Relations | | 3 |
| Cultural Awareness (Note 5) | | 3 |
| PHY 3048, 3049 Physics I, II (Note 3) | | 10 |
| NSC 3103 Naval Science Lab | | 0 |

| Senior Year | Sem. | Hrs. |
|--------------------------------------------|-------|------|
| NSC 3213 Naval Operations | | 3 |
| NSC 4232 Principles of Naval Management II | | 3 |
| NSC 4224 Amphibious Warfare (Note 2) | | 3 |
| NSC 4104 Naval Science Lab | | 0 |

- NOTES:**
- (1) Undergraduate naval sciences 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 Midshipman only.
 (5) NROTC midshipmen will take a semester course in regional studies, world culture and/or world religions, with the emphasis being 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

ABE 1010 Introduction to Biological and Agricultural Systems Engineering (BASE) (1). An introduction of mathematical and engineering concepts utilized in food and agricultural systems design.

ABE 2001L Introduction to Computer Applications (1) Hands-on experience with computer application packages such as word processing, spreadsheets, database management, and presentation graphics. Also provides exposure to GIS and programming using Pascal plus, C++, or FORTRAN.

ABE 3013 Introduction to Design Analysis. (3) Prereq: MAC 3312, ABE 2001L or permission. Introduction to the scientific method through the flow process from hypothesis to experimental design, collection of data, analyzing, interpreting and reporting results.

ABE 3212C Natural Resources Conservation Engineering. (4) Prereq: PHY 3048, MAC 3311 or permission. Introduction to hydrologic cycle, precipitation, infiltration, evapo-transpiration, soil erosion, erosion best management practices, nutrient movement, flood routing, GIS (geographic information systems), channel flow, pipe flow, drainage and irrigation.

ABE 3650 Engineering Properties of Biological Materials (3). Prereq: BSC 1011, PHY 3049 or permission. Physical properties important to the design of harvesting, storage, and processing systems for agricultural crops; principles and techniques for measurement of properties including frictional effects, particle size, strength, moisture content, specific heat, and thermal conductivity.

ABE 4042 Senior Design in Biological and Agricultural Systems Engineering I. (2) Prereq: Senior standing. Capstone design experience. The first of two senior design courses. Preliminary investigation of an assigned multi-faceted team project, incorporating computer aided design, evaluation and synthesis. A written and orally presented progress report is required.

ABE 4043 Senior Design in Biological and Agricultural Systems Engineering II (2) Prereq: Senior standing. Second semester continuation and competition of the team project assigned in ABE 4042. A written and orally presented final report is required.

ABE 4224 Non-Point Source Pollution. (3) Prereq: ABE 3212C or permission. Covers the chemical and physical processes involved in the transport of nutrients, pesticides, and other potential pollutants in runoff and percolation. Emphasis is placed on algorithms and computer models which predict water and chemical movement into surface waters and ground water.

ABE 4232 Water Management System Design (3). Prereq: 3212C or permission. To acquaint the student with the science and design of drainage, irrigation, rural water supply and rural sanitation systems. There will be an integration of economic, environmental, and social considerations into the various design projects.

ABE 4612 Environmental Modifications and Controls. (3) Prereq: EML 3100, Prereq or Co-req EML 3140 or permission. Fundamentals of heat and mass transfer, psychometrics and solar radiation, and their interactions with animals and plants in controlled environments. Application of fundamental principles to the design of animal and plant production structures and other intensively managed biological systems.

ABE 4651 Biomass Conversion Processes for Energy and Chemicals. (3) Prereq: CHM 1045, BSC 1011. There are a variety of physical and biological processes available for converting plants and other biomass resources into energy, industrial chemicals, and foods. The design is accomplished through fusing concepts from biochemistry, microbiology, and plant biology with the concepts and methods of engineering. There are four components of this course: plants as biochemical resources, heat and mass transfer, enzyme catalysis, and fermentation kinetics. Each component concludes with a case study that demonstrates how the scientific concepts and methods are used to design a biomass conversion process.

ABE 4661 Biochemical Engineering. (3) Use of microorganisms and enzymes for the production of chemical feedstock, single cell protein, antibiotics and other fermentation productions. Topics include kinetics and energetics of microbial metabolism, design and analysis of reactors for microbial growth and enzyme catalyzed reactions, and consideration of scale-up, mass transfer, and sterilization during reactor design.

ABE 4701 Agricultural Waste Management Engineering (3). Prereq: BSC 1011, CHM 1045, or Permission. Sources and descriptions of wastes from livestock, food processing, and domestic refuse. Waste is characterized by physical, biological, microbiological and chemical properties. Details practices of collections, storage, treatment (aerobic and anaerobic), and utilization/disposal. The environmental effects of land application, and other disposal practices is included.

ABE 4812 Food and Bioprocessing Engineering. (3) Prereq: MAC 3312, PHY 3048; Co-req EML 3140. An analysis of the most common unit operations utilized in the processing of food products. The principles of heat and mass transfer associated with processing operations will be used in defining process systems for drying, refrigeration, etc.

ABE 4830 Instrumentation for Agricultural and Biological Systems. (3) Prereq: EEL 3003, MAC 3313 or permission. Overview of modern instrumentation techniques in agricultural and biological engineering systems. Emphasis is on laboratory use of the equipment. Topics include performance characteristics of instruments, analog signal conditioning, transducer theory and applications, and digital systems for data acquisition control.

ABE 2104 Economics of Agriculture (3) Prereq: ECO 2013 and ECO 2023. Introduction to agricultural economics. Economic principles as applied to farm production, marketing, demand and finance, farm prices and income.

ABE 3134 Principles of Agribusiness Management (3) Prereq: ECO 2013. This is an introductory course on the application of economic and business principles to the organization and operation of agribusiness firms.

ABE 3143 Agricultural Finance (3) Prereq: AEB 2104. Economic problems involved in financing agriculture: kind and sources of credit policies of lending institutions; kind and use of legal credit instruments; insurance and taxation.

ABE 3300 Marketing Agricultural Products (3) Prereq: AEB 2104. A review of the American system of marketing agricultural products including the organization of marketing systems, marketing function and services, and marketing price determination.

ABE 3331 Agricultural Prices (3) Prereq: AEB 2104. This course is an introduction to the factors that determine agriculture product pricing, an analysis of agribusiness price data, and an examination of the importance of market demand and supply in setting the prices of agricultural products.

ABE 4152 Agribusiness Analysis (3) Prereq: AEB 2104. The course is an application of business principles to the planning and operation of an agribusiness firm. This will involve an analysis of firm records and the development of a viable business plan using valid measures of business success.

ABE 4261 Agriculture Policy (3) Prereq: ECO 2013. Policies relating to developing of agriculture in United States relationship between problems in agriculture and public policies; appraisal of effect of agricultural policies.

ABE 4391 Agricultural Cooperation (3) Prereq: AEB 2104. Kind of cooperation, methods of organization and operation; legal requirements for cooperatives; economic possibilities and limitations of cooperatives.

ABE 4452 Environmental Economics (3) An analysis of the international environmental externalities, comparing command and control policies to market solutions with a particular focus on transboundary problems such as air and water pollution and resource's depletion.

ABE 4452 Environmental Economics (3) This is an introductory course on how the neoclassical economic paradigm can be applied to contemporary environmental problems and issues. Topics of review include valuing non-market goods and services, water and air pollution and long-term issues such as global warming and deforestation.

AEB 4900 Directed Independent Study (Var.) Prereq.: AEB 2104. Economic investigation of an agribusiness problem with a view to providing recommended solution.

AEB 4906 Problems in Agribusiness (3) Prereq: Senior, permission of instructor, selected problems in agricultural economics for research and study; supervised lab source in methods of collecting, analyzing data and writing scientific reports.

AEB 4930 Agricultural Business Seminar (1) Prereq.: ECO 2023, AEB 2104. Discussions of current agricultural issues with group and/or individual presentations.

AEB 4949 Agribusiness Internship (1-6) For senior majors only, with departmental approval. Full-time affiliation as intern with agribusiness agency. Agency may be state, government, or private, dealing with practical application of agribusiness activities.

AEE 1934 Introduction to Agricultural Technology Education Seminar. (0-1) Introduces Agricultural Technology Education. Special emphasis on: 1) agricultural and environmental concerns, leadership and extension, teacher training, and agricultural communications; 2) participation of invited speakers; and 3) various facets covered by on-site lectures/visits to training and education sites, research stations, private farms, agribusiness, and agencies.

AEE 3300 Instructional Techniques in Agriculture and Extension Education. (3) Introduction to general techniques of teaching, selection of procedures, instructional resource management, student-teacher rapport, media and materials, learning environment and activities, and evaluation.

AEE 3038 Agriculture Field Experience. (1-3) Early field-based experience in agriculture. Mentorship opportunity whereby students gain early insight and experience into field of study.

AEE 3327 Agricultural Education- Philosophy and Role in the 21st Century. (3) Historical development of concepts, philosophies of agricultural education programs including principles, legislation, underlying organization and practice, impact, and changing role in the 21st century.

AEE 3417 Leadership Programs in Agriculture and Natural Resources. (2) Preparing leaders to become empowered to use acquired skills and knowledge, address issues and train others. Implications of policy and goals. Impact of national and international leadership programs.

AEE 3940 Agriculture Field Experience. (1-3) Early field-based experience in agriculture. Mentorship opportunity whereby students gain early insight and experience into field of study.

AEE 4039 Strategies in Agricultural Communications. (3) Mass media techniques for reporting and promoting agriculture including message preparation, presentation, and strategy development. Inter-cultural communication techniques. Strategies and methods for agricultural information transfer.

AEE 4202 Technology and Agriculture Education. (3) Emphasis on new and emerging technologies, devices, and resources within agriculture and natural resource sciences.

AEE 4208 Methods of Teaching Agricultural Extension. (3) Methods and materials used to develop agricultural education programs in agriculture and community resource development and Cooperative Extension.

AEE 4251 Sustainable Development: Program Development and Evaluation in Agricultural Development. (3) An overview of efforts to achieve global sustainable development. Examines methods used in human and community resource programs and/or rural development programs, based on nature and role of key characteristics. Emphasis on assessment, participant/community needs, goals, sustainability.

AEE 4256 Educational Programs in Agriculture for Developing Countries. (2) Development and implementation of educational programs in developing countries.

AEE 4301 Sustainable Agriculture. (2) Historical development of concepts, current issues and trends within sustainable agriculture science.

AEE 4326 Transfer and Adoption of Technology. (3) Processes by which professional change agents influence the introduction, adoption and diffusion of technology in international agricultural development.

AEE 4415 Agroecosystem Management.(2) Managing complexity and change in food, agriculture and natural resources. Alternative farming systems and ecotechnology. Case studies of agroecosystem management and problem solving.

AEE 4418 Leadership Development in Agriculture in and Natural Resources. (3) Philosophy and significance of leadership education. Principles and practices in organizing and administering community programs. Leadership development for small groups and teams, youth, and adults.

AEE 4436 Developing Community and Volunteer Programs. (3) Strategies and procedures for effectively coordinating community and vol-

unteer programs.

AEE 4455 Methods and Approach in International Agricultural Extension Programs and Projects. (3) Historical view of agricultural development systems. Examination of changing methodology, approach, strategy, role of participant, extensionist, researcher. Development and implementation in agriculture, community development and related fields.

AEE 4542 Curriculum and Program Planning. (3) Principles and practices used in designing courses for effective teaching and program development. Curriculum materials, methods used in teaching agricultural education in formal and informal settings.

AEE 4936 Forum on Agricultural Technology Education. (1, P/F) Final integration of Leadership and Extension, Agricultural Communication, and Natural Resources and Environmental Management provided by student synthesis of experiences from their AEE-Practical Teaching Experience and/or AEE-Internship Opportunity. Features speakers on current issues and concerns within Agricultural Technology Education and related areas. International and National.

AEE 4937 Topics in Agricultural Communications. (1-2) Emphasis on emerging technologies, national and international trends in agricultural communications. Emphasis on determining effectiveness of method, message, training, follow-up.

AEE 4945 Agricultural Technology Education Option Internship. (VAR.) An individualized program whereby students gain knowledge, skills and practical experience.

AGG 2004 Introduction to Agricultural Science (1) This course has been designed to create an awareness, provide introductory experiences, and develop an understanding of all areas of Agricultural Sciences, Agribusiness, Animal Science, Entomology and Structural Pest Control, Ornamental Horticulture and Landscape Design, Agronomy, Food Science, and Agricultural Education.

AGG 2050C Introduction to Biotechnology (2) This course is designed to teach students the concepts and principles of biotechnology and explore to its application in agriculture, the environment and the society. Students will have "hands-on" experience with modern biotechnology research techniques in the laboratory.

AGG 4414 Women in Development. (2) Cultural-environmental practices and trends in women roles in grassroots development. Agricultural and development issues that address gender related- knowledge/information. Gender impact analysis. Impact of development, non-governmental organizations. Grassroots change. Participatory analysis.

AGG 4935 Agricultural Senior Seminar (1) Required for all seniors in any Agricultural Science curriculum. Presentation of professional seminars will be stressed and students will be required to present one seminar. Guest seminars will be presented when possible.

AGR 3210 Field Crop Science (3) Prereq: BOT 1010. Background materials. Concepts, theories, principles, and practices of field crop production. Lecture/Lab.

AGR 3232 Pasture and Range Management (3) Prereq: BOT 1010. Establishment of permanent pastures their fertilization and management; temporary and rotation pastures. Lectures/Lab.

AGR 3271 Temperate and Tropical Crops (3) Husbandry of specific temperate and tropical crops. Crops will be grouped into horticultural, agronomic, and tree crops.

AGR 4275 Global Cropping Systems (3) Discuss sole and mixed crop production systems. Different mixed crop production methods such as interplanting, intercropping, relay cropping and agroforestry will be discussed in detail and compared to solecropping. Examples of specific mixed crop combinations will be discussed and compared to solecropping. Advantages and disadvantages of mixed cropping in terms of pest management, natural resource use (solar radiation/light, water, nutrients, etc.) and mechanization will be discussed.

AGR 4430C GIS and Remote Sensing in Agriculture (3) Undergraduate research course involving lab and/or field analysis of problems in area that will stimulate imagination of student and advance cause of science.

AGR 4512 Plant Ecology (3) Prereq: BOT 1010; PCB 2063. Environment conditions controlling plant growth; nature's principles and methods of regarding the processes of plant succession and stabilization. Lecture.

AGR 4905 Special Problems (Variable) Individual research and study of problems or agronomy, soil science and other selected areas.

AGR 4910 Techniques of Research (3) Undergraduate research course involving lab and/or field analysis of problems in area that will stimulate imagination of student and advance cause of science.

AGR 4934 Seminar (3) Preparation and presentation of oral and writ-

ten reports on subjects in agronomy, soil science, and other selected areas.

ANS 3006 Introduction to Animal Science (4) A study of the basic principles of breeding, feeding, care and management of animals and the marketing and processing of animals and their products. Also includes a survey of the cattle, swine, poultry, dairy and other animal industries.

ANS 3204 Future Global Demand for Livestock Products (4) General discussion on meeting the projected global demand for foods of animal origin in the year 2020. Emphasis will be placed on feed supply and the efficiency with which animals convert feed. Areas that will be covered are: feed supplies, ranges, forges, crop residues and by-products, feed grains, technologies to improve animal production, efficiency, stocking rates, environmental considerations and policy issues.

ANS 3207 Animal Production Systems in Global Environments (3) Prereq: BSC 1005 or higher biological science. A study of the basic principles of breeding, feeding, care and management of animals and their products. Also includes a survey of cattle, swine, poultry, dairy and other animal industries.

ANS 3231 Equine Management and Training Syllabus (4) The course is designed to introduce students to the basic principles associated with equine management. Topics will run from the selection of a horse for your particular needs, to how to understand what your horse is saying. The lab format will give students hands-on training as well as basic knowledge of terminology and equipment.

ANS 3244 Beef Cattle Production (3) Prereq: ANS 3006. Place of beef cattle in modern ranch operations: methods of selection, breeding, feeding and management for maximum economic production. Lecture.

ANS 3264 Swine Science (3) Prereq: ANS 3006. Place of swine on the farm and modern methods and trends in selection, feeding, housing and managing swine for efficient production.

ANS 3273 Small Ruminant Management (3) Study of the theoretical and practical aspects of small ruminant management and production. Topics will include types and breeds of sheep and goats, establishing the flock of herd, systems of sheep and goat production, breeding sheep and goats, feeding and managing sheep and goats, and marketing of sheep, lambs, goats and kids.

ANS 3311C Reproduction of Farm Animals (4) Study of sound reproductive management practices that enhance breeding efficiency. Students are acquainted with general factors concerning reproduction of farm animals. Emphasizes anatomy, physiology and endocrine concepts related to the reproductive system of farm animals.

ANS 3463C Feeds and Feeding (3) Prereq: ANS 3006 Various types of feeds and their value in feeding livestock, and cost of ration.

ANS 3614 Meat Science and Meat Processing (4) Prereq: BSC 1010 or permission. Examines the structure, composition, biochemistry and function of muscle and its conversion to meat. Sensory and nutritive properties of fresh and processed meat, are also studied together with methods of meat preservation, inspection, and sanitation.

ANS 3638 Animals in the Global Food Supply (4) Discussion on the per capita consumption of major food groups in developed and developing countries, projections to 2020, indirect contributions of animals to the food supply, and contribution of livestock to food accessibility.

ANS 4080C Animal Science Experimentation (4) The course is designed to expose students to some of the basic analytical procedures in animal science and to enhance their laboratory skills.

ANS 4291 Incubation and Brooding (3) Principles and practices of incubation as related to hatchery management, embryology, reproduction and brooding requirements of chicks.

ANS 4291C Poultry Production (4) Prereq: ANS 3006; ASG 3413. Role of poultry in agricultural economy, incubation and brooding, types of feeds, poultry ration formulation and production of poultry meat and eggs.

ANS 4381 Animal Breeding (3) General principles of breeding and genetics in farm animals, emphasis on reproduction and genetics as they influence livestock production, application of genetics in animal production.

ANS 4445 Animal Nutrition (4) Prereq: CHM 1046; ANS 3006. The application of nutrition to farm animals including the nutrient requirements and functions. Discussion of types of feeds and their value in feeding livestock, cost of ration, and formulation of ration. Lecture.

ANS 4906 Directed Individual Study (1-4) Junior or senior standing with advisor's permission; student may pursue independent study with faculty supervision. Courses in animal science when specified courses are not offered or available for student during the academic period.

ANS 4931 Seminar (1) Prereq: ANS 3006 Preparation and presentation of oral and written reports on past and present subjects in animal science or selected areas.

ANS 4932 Special Problems in Animal Science (3) Individual

research and study problems related to the improvement of livestock production.

ANS 4949 Animal Science Internship (1-6) Senior majors only, with departmental approval. Practical work in feeding and care of common species of farm animals, including daily handling, breeding, and record keeping.

BCN 1221C Building Construction I (4). Coreq: EGS 110. 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, Materials and Methods I. A continuation of the study of building materials (sources, properties and uses) and construction methods. 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 attendant 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, General Physics I. 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.

BCN 3720 Construction Planning and Scheduling (2) Prereq: BCN 1221C. Various network methods on project scheduling such as Activity-on-Arrow (AOA) and Activity-on-Node (AON), Pert, bar-charting, line of balance, and other techniques. Microcomputers are used for scheduling, resource allocation, and time/cost analysis.

BCN 4617 Construction Estimating I (3) Prereq: BCN 3251 Construction Documents I and BCN 2230 Materials and Methods I. Quantity surveying and cost estimating for small scale construction projects. 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 Construction Estimating I. Continuation of Estimating I where students do more independent work on larger systems and structures. The emphasis is the project cost estimate including material, labor, equipment and sub-contract costs and indirect costs.

BCN 4705 Contracts, Codes & Laws (3) Prereq: BCN 3251 Construction Documents I. 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, Construction Management I. Use of computers for construction management applications. Software programs studied include the following: DOS, Windows, MS Word, WordPerfect, Lotus,

EXCEL, Primavera, Prolog Manager.

BCN 4905 Directed Individual Study (1-6) Prereq: Consent of the instructor. Students pursue a special project related to the field of study.

BCN 4941 Construction Management Internship (1). 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. Repeatable to a maximum of twelve semester hours.

BOT 1010 Elementary Botany (3). Introductory lecture about the importance, structure and function of plants and the role that plants play in the environment.

BOT 1010L Laboratory in Elementary Botany (1). Introductory laboratory about the structure and function of plants and the role that plants play in the environment.

BOT 3503C Plant Physiology (4). Introduction to plant physiology, and the way in which a plant functions based on biochemical pathways. Also, how plants adapt to their environment will be stressed.

BOT 3504C Plant Pathology (4). Introduction to the study of plant diseases, the principles of disease development and the agents that cause plant disease. Information of disease diagnosis and control will also be stressed.

CET 2123 Microprocessor Fundamentals (3) CET 2123L Microprocessor Fundamental Laboratory (1). Prereq: CET 3195 Digital Electronics. Study of architecture and microprocessor programming. Microcomputers will be discussed in detail.

CET 3010 Concepts in Computer Technology (3). Prereq: Any programming language course in C, C++, Java, Pascal or equivalent, and MAC 2311. Provides an overview of the field of computer Technology: Computer Architecture, algorithms, problem solving, the human machine interface, software engineering, database concepts, artificial intelligence, theory of computation and other current topics of interest

CET 3195 Digital Electronics (3) CET 3195L 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, multivibrators, counters, and registers.

CET 3468 Computer Aided Circuit Analysis (3) Prereq: MAC 2312 and EET 2036 w/lab. 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, Pspice circuit simulation, and analysis using available mathematical software packages.

CET 3350 Applied Data Structures (3). Prereq: Programming Language course, MAC 2311. Sets, relations, functions, and concepts of cardinality. Propositional logical and application. Periodic logic. Induction and recursion, finite state machines, grammar and languages. Lists, trees, graphs and boolean algebra.

CET 2365C Programming for Engineering and Technology (3). Prereq: None. Hands-on introduction to the C programming language with applications in Engineering and Technology. Includes arrays, pointers, functions, I/O operations and operations system interaction.

CET 3930 Special Topics in Computer Engineering Technology (1-3). Prereq: Consent of the instructor. Student receive instruction in a specialized topic or area of the Computer Engineering Technology field. May be repeated up to 9 credit hours.

CET 4126 Advanced Microprocessors (3) Prereq: CET 2123 Microprocessor Fundamentals, An in-depth study of advanced (16 bit and 32 bit) microprocessors and an introduction to DSP microprocessors Architecture, software and interfacing techniques will be studied in details.

CET 4488 Data Communications and Networking (3) CET 4488L Data Communications and Networking Laboratory (1). Prereq: MAC 2311; EET 3326; Communications Systems, Media, Data Communications, Networks, Local Area Networks, Networks Architectures, Communications Protocols, Cellular and Wireless Communications

CET 4542 Computer Architecture (3) Prereq: Programming language course, and CET 2123. Structure and functions of computers. Fundamentals of computer organization and architecture. Study of basic performance characteristic of computer systems including processor speed, memory speed, memory capacity, and interconnection data rate.

CET 4190 Applied Digital Signal Processing (3) CET 4190L Applied Digital Signal Processing Laboratory (1). Prereq: CET 2123, EET 3325, and CET 3468; Integrated lecture and laboratory experience in the real-world application of digital Signal Processing theory and techniques.

CET 4149 Microprocessor Interfacing (3) CET 4149L Microprocessor Interfacing Laboratory (1). Prereq: Programming language course, and CET

2123. Elements of microprocessor based systems; interfacing and software design for their application.

CET 4931 Special Topics in Computer Engineering Technology (1-3). Prereq: Consent of the instructor. Students receive instruction in a specialized topic or area of the Computer Engineering Technology field. May be repeated up to 9 credit hours.

EET 2035 Electrical Fundamentals I (3) 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. Study of electrical sources, circuits and residential wiring.

EET 2036 Electrical Fundamentals II (3) EET 2036L Electrical Fundamentals II Lab (1) Prereq: EET 2035 Electrical Fundamentals I. 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) EET 2106L Electronic Devices and Circuits I Laboratory (1) Coreq: EET 2036, First of a two-course sequence in Electronic Semiconductor diode and transistor circuit elements. 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 (4) EET 2142L Advanced Electronics I Laboratory (1) Prereq: EET 2106 Electronic Devices and Circuits I. In depth study of selected topics in microelectronics including analog and digital circuit design.

EET 3048 Applied Electromagnetics (3). Prereq: EET 2036 Electrical Fundamentals II; PHY 2048, PHY 2049 General Physics I&II; Coreq: EET3326 Advanced Communication Systems. 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) EET 3107 Electronic Devices and Circuits II Laboratory (1) Prereq: EET 2106 Electronic Devices and Circuits I 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) EET 3325L Communication Systems Laboratory (1) Prereq: EET 2106 Electronic Devices and Circuits I; MAC 2312. 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) EET 3326L Advanced Communication Systems Laboratory (1) Prereq: EET 3325 Communication Systems. Integrated lecture and laboratory experience in the study of digital communication, digital networks, fiber optics, and satellite communication.

EET 3930 Special Topics in Electronic Engineering Technology (3) Prereq: Consent of the instructor. Students receive instruction in a specialized topic or area of the Electronic Engineering Technology field. May be repeated up to 9 credit hours.

EET 4322 Advanced Electronics II (3) EET 4322L Advanced Electronics II Laboratory (1) Prereq: EET 2142 Advanced Electronics I. An in-depth study of selected topics in microelectronics including oscillator design: special wave generators and more applications on operational amplifiers.

EET 4328 Wireless Communications (3), Wireless Communications Laboratory (1). Prereq: EET 3325 Communication Systems. 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 4344 Microwave (3) EET 4344 Microwave Laboratory (1). Prereq: EET 3326 Advanced Communications System or PHY 2049 Physics II. The study of magnetic fields, transmission line theory, smith chart and its applications. Design of single and double stub transformers, principles of microwave measurements and signal generation and microwave network analysis.

EET 4347 Microwave and Millimeter Wave Computer-Aided Circuit Design (3). Prereq: EET 4344 Microwave. An introduction to the theory

and applications of microwave and millimeter wave computer-aided-design (CAD) programs with emphasis on monolithic microwave integrated circuits (MMICs); Review of transmission line theory, Two-port network characterization and analysis, S-parameters, Stability, Planar transmission lines, Microwave Filters and Matching Networks, Computer-Aided Design, Basic MMIC Amplifier Design considerations

EET 4735 Industrial Electronics and Control (3) EET 4735 Industrial Electronics and Control Laboratory (1). Prereq: EET 3107 Electronic Devices and Circuits II and CET 3468 Computer-Aided Circuit Analysis. Characteristics and analysis of electronic devices in modern industry system analysis, control concepts, graphical solution of network response; robots. End-of-arm tooling, robot controller, sensors and interfacing.

EET 4906 Directed Individual Study (3-6) Prereq: Consent of the instructor. Students pursue a special project or study related to the field.

EET 4914 Electronic Engineering Technology Design Project (4). Prereq: Senior standing. Design and implementation of individual projects in some areas of electronic Engineering Technology.

EET 4931 Special Topics in Electronic Engineering Technology (3-4). Prereq: Consent of the instructor. Students receive instruction in a specialized topic or area of the Electronic Engineering Technology field. May be repeated up to 9 credit hours.

EET 4941 Electronic Engineering Technology Internship (3-6) Summer working experience in electrical or electronic industry scale measurement, and technical drawing in the student's field with computer aided design.

EGS 1110C Engineering Graphics I (w/Autocad) (4) 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) (3) 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.

ENY 2001 Insects, Man, and Environment (3) (Non-majors) Survey course considering diversity of insects and environments in which they live. Emphasis on effects of insects on man and his environment.

ENY 2006 Global Integrated Pest Management (3) Insects of agricultural importance: basic morphology, life histories, habits, and principles of pest management. Lecture/Lab.

ENY 2570 Principles of Environmental Entomology (3) Importance of insects in environment. Insect biodiversity and biomonitoring of terrestrial and aquatic ecosystems. Insect morphology, life histories, ecology. Principles of pest management in agricultural and urban settings.

ENY 3004 General Entomology (4) Basic course covering major groups of insects, their external morphology, life histories, ecology, and importance.

ENY 3222 Urban Entomology I (4) Life histories, biology, pesticides, and control of structural pests, along with care and maintenance of equipment used. Preparation for Florida State Pest Control Examinations.

ENY 3223 Wood Destroying Organisms and Controls (4) Biology and control of termites and other wood destroying insects and fungi. Preparation and proper use of chemicals and equipment. Preparation for Florida State Pest Control Examinations.

ENY 3560 Pests of Ornamental Plants and Turf (3) Prereq: ENY 2570 or ENY 3004. A study of the insect and disease pests of turf grasses and ornamental plants with emphasis on identification, damage and control.

ENY 3661C Medical Entomology (4) Prereq.: ENY 3004. A survey of the major arthropod borne diseases of the world, with instructions in identification of insects and arachnid vectors, and control and prevention of such diseases.

ENY 3668 Veterinary Entomology (3) Prereq.: ENY 3004. Various disease relationships, biology and control of arthropods affecting the health of domestic animals.

ENY 3701C Forensic Entomology (3) Prereq.: ENY 3004. Learning the discipline of forensic science and crime scene investigations. Introduction to crime scene analysis and techniques including forensic entomology, botany, pathology, blood chemistry, anthropology, physical and trace evidence, and ballistics. Exposure to courtroom and expert witness and interaction with experts of various forensic science disciplines.

ENY 3941L or ENY 4941L Structural Pest Control Practicum (3)

Prereq: ENY 3222, 3223. Designed to give the student practical experience in structural pest control.

ENY 3949 (Var. hrs. 1-6) or **ENY 4949 Entomology Internship** (Var. hrs. 1-12) Department chairman's permission required. Open only to Juniors and Seniors. In an effort to meet the individual needs and interests, credit may be given for occupational training or employment outside local region over summer. Work must be done under supervision of specialists in student's major field.

ENY 4101 Principles of Animal Taxonomy (4) Prereq: ENY 3004. Elements of classification and phylogeny, taxonomic writing, and International Code of Zoological Nomenclature.

ENY 4150 Systematic Entomology (3) Prereq: ENY 3004. Recognition of all major families of insects in North America. Laboratory class featuring microscope study of specimens.

ENY 4229 Urban Entomology II (3) Prereq.: ENY 3004. Biology, ecology, identification, and management of pest organisms associated with people, structure and the urban environment. Emphasis on economic importance and control strategies for arthropod pests commonly invading households and commercial structures in urban environments.

ENY 4354 Insect Morphology (4) Prereq: ENY 3004. A review of the external and internal anatomy of the major groups of insects, with some consideration of physiology.

ENY 4501 Aquatic Entomology (3) Prereq: 3004. Identification and ecology of adult and immature insects in aquatic environments. Emphasis on those generally occurring in the Southeast.

ENY 4811 Information Resource Management in Entomology (3) Prereq: ENY 2570 or 3004. Modern methods of gathering and processing information in biological research, with emphasis on computerized techniques.

ENY 4907 Special Research Problems and Readings (1-3) Prereq: ENY 3004, ENY 4354 or consent of the instructor. Individual research or study projects centering around student's area of interest.

ENY 4931 Entomology Seminar (1) Current developments and topics in entomology.

EST 3222 Opto-electronics and Fiber Optics (3) EST 3222L Opto-electronics and Fiber Optics Laboratory (1) Prereq: EET 3325; Integrated lecture and , laboratory experience in Optoelectronics and Fiber Optic Communication.

EST 4538 Instrumentation (3) 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.

ETG 2502 Statics (3) Prereq: MAC 1142. 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.

ETC 2500 Transportation I (4) Prereq: SUR 2140. Highway economics and finance, highway planning, traffic surveys, introduction to geometric design of highways. Drainage, earthwork, soil stabilization, types of asphalt. Flexible and rigid pavements, design of flexible pavements. road maintenance.

ETC 3210 Soil Mechanics I (3) **ETC 3210L Soil Mechanics I Laboratory** (1). Origin, composition and structure of soils. Fundamentals properties of soils including permeability, consolidation and shear strength. Mohr circle analysis as applicable to soil mechanics. Bearing capacity of soil, slope stability, introduction to methods of analysis. Piles, load capacity of single and group piles. Laboratory testing of soils for physical properties.

ETC 3211 Soil Mechanics and Foundations (3) Prereq: ETC 3210 Soil Mechanics. Applications of soil mechanics; stability of slopes, footings and pile foundations, retaining walls, fill embankments, dewatering, instrumentation in soil mechanics, special problems.

ETC 3401C Computer Applications I (3) Prereq: COP 3110 or equiv. Applied computer applications to problems in civil engineering utilizing micro-computers, minicomputers and mainframes. Linear programming, introduction to scheduling, COGO, spread sheets, graphics, estimating and highway design using computers.

ETC 3402C Digital Applications II (3) Prereq: ETC 3401C Computer Applications I or permission of instructor. Applications in computer aided drafting and design (CADD). Hardware, software, various devices used, layering, obliques. Sectioning, 3-dimensional modeling, prototypes. Applications in civil, architectural, and electronics technology.

ETC 4216C Site Investigations (3) Prereq: Approval of instructor. This is a practical site engineering design, survey and hydrology interaction.

Applications in (i) roadway design (x-design, plan/pro-file) (ii) grading plan design (iii) hydrological analysis. A hands-on Civil engineering computer design using Softdesk, application of computer analysis, application and modeling, (formerly SCA) software and AutoCadd.

ETC 4454 Reinforced Concrete I (3) Prereq: ETC 2530. ETC 445LL Reinforced Concrete I Laboratory (1). Basic theory of ultimate strength and working stress design methods. 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. 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. Spread footings, mat foundations.

ETC 4501 Transportation II (3) Prereq: ETC 2500 Transportation I. Advanced topics in transportation to include roadway systems, airports, rail, mass transit, and ports. Applications and analysis of geometric design, transportation planning, traffic analysis, and alternate analysis.

ETC 4905 Directed Individual Study (3-6) Prereq: Consent of the instructor. Students pursue a special project or study related to the field.

ETC 4940 Civil Engineering Technology Internship (3-12) Prereq: Senior level standing and approval of instructor. The student will be given specific assignments related to the Engineering Technology discipline either involving field work, design office, laboratory work in an engineering organization. To satisfy the requirements of this course the student will have to furnish a related written report on the tasks performed. Comments of the immediate supervisor under whom the student worked may be required.

ETC 4970 Technical Project (2) Prereq: Senior standing. Research and presentation of an acceptable written project, including in-depth study and/or application of engineering principles.

ETG 2510 Dynamics (3) Prereq: ETG 2502 Statics. Kinematics of rectilinear and curvilinear motion of rigid bodies, kinetics of translation, rotation of particles and plane motion of rigid bodies, work and energy relations, impulse and momentum principles.

ETG 2530 Strength of Materials and ETC 2530L (3) Prereq: ETG 2502(1) Axial load, normal and shearing stresses, Hook's Law, torsion, shear and bending moments diagrams for simply supported and continuous beams, pure bending and transverse loading. Bending and shear stresses in beams. Composite beams.

ETG 3612 Operations Research for Engineering Technology II (3) Prereq: ETG 3611 Operations Research for Engineering or permission of instructor. Research techniques in project management, scheduling, logic analysis, precedence, critical path analysis, PERT analysis, computer graphics, computerized scheduling techniques.

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 Calculus with Analytic Geometry I. The mathematics of compound interest with emphasis on time value of money. Equipment replacement and investment decisions. Topics on depreciation and taxes.

ETM 3316 Hydraulics (3) ETM 3316L Hydraulics Laboratory (1) Prereq: ETG 2502 Statics. Hydrostatic forces. Stability of floating bodies and center of pressure on submerged areas. Bernoulli's theorem and its applications, fluid flow in pipes and channels, distribution of flow in

ETM 3820 Engineering Materials (3) ETM 3820L Engineering Materials Laboratory (1) Construction materials, including aggregates for concrete and asphalt, asphalt cements, and concrete. Ferrous materials, wood and other construction materials.

FOR 3093 Forestry in Rural and Urban Environment (3) Discussion on forests and forest types in the USA. Urban forestry and conventional forestry. Wood and wood products.

FOR 4502 Introduction to Global Agroforestry (4) Prereq: AGG 2004 OR FOR 3093. Concepts of growing and producing agronomic crops and trees as well as livestock will be covered. These concepts include agro-forestry, silvipastoral systems, and agri-silvipastoral systems. Systems practiced by geographical regions will be covered especially as they apply to resource rich versus resource poor farmers.

FOS 2002 Food and Man (3) This course is designed for both science and non-science majors. A general overview of the historical origins and development of factors affecting food patterns, trends and cultural aspects of foods is done. The impact of modern life on various aspects of food, health and nutrition problems are also addressed.

FOS 3004 Global Food Situation (3) Course will critically review the

global food supply and demand as related to major food products.

FOS 3042 Introduction to Food Science (3) A general introductory course in food science that includes aspects of food preservation and processing, food safety, food additives, food legislation and regulation.

FOS 3042L Introduction to Food Science Lab (1) Coreq: FOS 3042. A laboratory course to accompany FOS 3042. Students are able to test the theoretical principles covered through laboratory experiment. They are given the opportunity to further improve their skills in the areas of observation, measurement, recording, reasoning, and reporting.

FOS 3121 Sensory Science (3) Prereq: FOS 3042; STA 2023. Trains students to measure sensory characteristics of food and use the results to evaluate the impact of factors such as ingredients, processing technology, and storage methods on food quality.

FOS 3429 Processing of Plant Foods (3) Prereq: FOS 3042. The scientific principles involved in the various methods of fruit and vegetable harvesting, pre-processing and processing techniques are discussed using lectures and demonstrations. Emphasis is placed on the transformation of grape and citrus fruits into value-added products.

FOS 4005 Global Food Requirements of Humans and Animals (3) Course will examine issues that impact the food requirements for humans and animals. It will also review alternative models for meeting these requirements.

FOS 4202 Food Sanitation (3) Prereq: FOS 3042; Coreq: FOS 4222C. Describes the principles associated with sanitation in food processing and preparation operations. Emphasizes the identification of hazards, assessment of risks and systems required for an effective food sanitation program.

FOS 4222C Food Microbiology and Safety (4) Prereq: BSC 1010, BSC 1011; CHM 1045, CHM 1046. The role and significance of microorganisms in foods with particular reference to food productions, spoilage, preservation, sanitation and poisoning. Emphasis on the use of microorganisms in bioprocessing and also their public health significance. Study of safety aspects related to food production and consumption.

FOS 4311 Food Chemistry (3) Prereq: CHM 1045, CHM 1046. The chemical composition of foods is examined especially as related to food properties and function. Reaction mechanisms of chemical processes affecting food quality are discussed. Emphasis is placed on the impact of processing on the quality of foods.

FOS 4321C Food Analysis (4) Prereq: CHM 1045, CHM 1046. Application of physical and chemical analytical methods to the quantitative determination of various food constituents and additives. Emphasis on the evaluation of methods and interpretation of results.

FOS 4425 Principles of Food Manufacturing and Safety (3) Prereq: CHM 1045, 1046. The scientific principles governing the various methods of food manufacturing and storage are explained using lectures and demonstrations. The role of food manufacturing and storage practices in food safety and consumer convenience is discussed as well as the need for excellent food quality and food regulation. Ethnic foods are a special feature.

FOS 4435C Food Product Development (3) Coreq: FOS 4311; FOS 4222C; FOS 4321C. A capstone course that integrates knowledge gained in prior courses. It provides an opportunity for students to utilize their knowledge in the conceptualization and development of a new food product(s).

FOS 4454C Food Fermentations (3) Prereq: FOS 3042; Coreq: FOS 4222C. Microbiological, chemical and physical aspects of diverse food fermentations are discussed with emphasis on grape fermented products. Economic aspects of different processes to produce fermented value-added products from indigenous food are covered.

FOS 4641 Functional Foods (3) Prereq: FOS 3042; BCH 4033. Discusses the physiological effects of foods and food components capable of promoting good health and preventing or alleviating diseases. It examines past, current and future uses and describes evaluation and manufacturing techniques of these foods.

FOS 4731 Food Laws and Regulation (3) Prereq: FOS 3042; Coreq: FOS 4311; FOS 4321C; FOS 4222C. Reviews the history of food law, enactment of laws and regulations, legal research, and regulatory agencies. Examines the impact of mandatory and optional food laws and regulations exercised by state, federal and international agencies on food quality, safety, wholesomeness, and nutrition

FOS 4930 Seminar in Food Science (1) Seminar presentation of topics in areas at the cutting edge of food science. Instruction in leadership and professional development is also done and on and off campus field trips are organized.

FOS 4940 Practical Food Experience (3-4) Advisor's permission

required. Supervised attachments at various food laboratories. Provides hands on experience and exposes the students to a working environment in food research thereby bringing them into contact with a variety of novel equipment and methodologies.

FOS 4942 Food Safety Practicum (3-4) Advisors permission required. Prereq.: FOS 4222 or MCB 3020 and FOS 3042. This is intended to be a capstone class in food safety. It is a practical class that is designed to expose students to the actions of the government and the food industry in dealing with current and emerging issues in food safety. The students will obtain information primarily through "hands-on" experiences, laboratory exercises and lectures done during visit to government agencies involved in food safety and food companies with active food programs.

FRS 3801 Introduction to Viticulture (4) Prereq: General Biology (BBC 1010C, 1011C). The nature of the vine, strategy for grape production, vine management, crop hazards, and grape growing and wine making at home. Course consists of two lectures of one hour each and one discussion demonstration laboratory period of two hours each per week.

FRS 4906 Directed Individual Studies (1-5) This course is designed to provide students of advanced junior or senior standing, the opportunity to pursue independent study or research in the area of fruit crops. The topic of study or research project must have been decided upon by the student, and approved by the instructor prior to registration.

GLY 2010 Principles of Geology. (3 credit hours). This course is an introduction to physical geology. Course topics include earth materials and related processes of volcanism and weathering; geological time; the geological work of gravity, water, wind, and ice in modifying landscapes; earth's internal structure and processes that deform rocks and create mountains; rock types and the rock cycle; mass wasting; earthquakes; plate tectonics; energy and mineral resources; and planetary geology.

HOS 3010C Horticultural Science (3) Prereq: BOT 1010C. Scientific concepts on which horticulture is based, including biology techniques and industry. Pruning, propagation, plant classification, and pest control are studied.

HUN 2401 Nutrition (3) Examine the nutrition, their physiological function and food sources as related to human development and growth throughout the life cycle. The class includes discussions on the dangers of over- and under-nutrition, and nutrition related diseases.

LDE 1210 Landscape Graphics I (2) Lectures and exercises designed to develop the landscape designer's skills in graphic communications utilizing freehand and perspective drawing.

LDE 1222 Landscape Graphics II (2) Lectures and exercises designed to broaden the landscape designer's graphic vocabulary to include axonometric and perspective drawings as well as presentation techniques.

LDE 2515 Landscape Graphics III (2) Computer Aided Design using AutoCAD to generate professional landscape plans and elevations.

LDE 3016 History of Landscape Architecture (3) History of landscape architecture researches the history of the development of the art of landscape design. Objectives to present the historical significance of plants in the landscape. The interfacing of landscape and the natural environment is traced.

LDE 3415 Landscape Design Studio I (4) This course serves as an introduction to landscape design and management. The course stresses the basic principles of site analysis and design through the student's development of landscape plans and maintenance specifications for a residential scale project.

LDE 3425 Landscape Design Studio II (4) This course deals with a landscape design and management problem in an institutional/environment such as a university campus, state or federal office building complex, etc. Students are responsible for site analysis of an existing site preparation of a planting plan and written specifications for installation and continuing maintenance.

LDE 4303C Site Improvement and Drainage (3) The study of site improvements and tangible objects such as design and construction of drives, walls, and other concrete structures; grading and water control, and outdoor lighting.

LDE 4406 Theory and Principles of Landscape Design (3) Theory and principles of landscape design and their application to the practice of landscape design.

LDE 4435 Landscape Design Studio III (4) This course focuses on the basic requirements involved in the design, construction and management of landscapes for parks and public spaces. Course study addresses federal, state, and local regulations as they relate to landscape construction and maintenance practices.

LDE 4445 Landscape Design Studio IV (4) This course deals exclusively with development of plans, specifications and management of

Landscape Restoration projects.

LDE 4610 Professional Administration (3) The preparation of cost estimates and specifications; contracts, programming of landscape construction; office administration.

MAN 3600 International Business (3) The study of the international, economic, and political environment in which trade and investment takes place and the management responses in international firms.

MAP 2400 Circuit Analysis with Calculus (4) Prereq: MAC 2311 Calculus with Analytic Geometry I. Application calculus to analysis and synthesis of electronic circuits and electronic networks.

MCB 3013C General Bacteriology (4) Prereq: BSC 1011, CHM 1046. Biology of microorganisms and viruses including taxonomy and pathogenic relationships.

NSC 1110 Introduction to Naval Organization (3) Structure and principles of Navy organizational concepts are examined, including lines of command and control to the various major, intermediate, and basic shore establishments and sea-based units of the Navy and Marine Corps.

NSC 1140 Seapower Naval History from American Revolution. 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 Ships Systems I (3) General introduction to naval ship engineering systems. Particular emphasis upon ship compartmentation, 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 2122 Naval Ship Systems II (3) Provides an indepth understanding of Naval Weapons, their associated systems and the integration of the weapon systems into the overall battleplan 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 student 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 is placed on the evolution of amphibious warfare in 20th century; WWII, current capabilities, and projected use in the future are explored.

NSC 2231 Principles of Naval Management I (3) Comprehensive advanced-level course in organizational behavior and management. Topics include survey of 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 and total quality leadership (TQL).

NSC 4232 Principles of Naval Management II (3) Study of naval junior officers' responsibilities in naval administration. Course 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.

ORH 3222 Turfgrass Culture (3) Comparisons of turfgrass for their landscape and recreational uses. Growth characteristics, method of propagation, and basic management requirements, including control of important pest problems, are covered.

ORH 3513 Landscape Plants I (4) Identification, characteristics, and landscape use of woody plants commonly grown in nurseries and used in Florida landscape planting. Studies will also include some tropical and subtropical.

ORH 3518 Landscape Plants II (4) Prereq: ORH 3513. Identification and characterization and landscape of woody ornamental (shrubs, vines, trees), bulbs, annuals, biennials, perennial bedding plant and turfgrasses. Studies will include temperate, subtropical, and tropical species.

ORH 4232 Arboriculture (3) Prereq: BOT 1010C. Advanced training in diagnosis of tree and shrub troubles. Theory and practice in pruning,

transplanting, fertilizing and structural enhancement. Student upon successful completion may receive certification by the National Arborist Association.

ORH 4253 Nursery Management (3) Prereq: HOS 2010C. Application of scientific developments to principles and practices involved in the production, harvesting, grading, and distribution of plants grown in modern nurseries.

ORH 4261 Commercial Floriculture (3) Prereq: HOS 2010C. Construction and management of glass and plastic structures. Production of cut flowers, foliage, and flowering pot plants. Storage, transportation and distribution practices.

ORH 4860 Landscape Contracting I (3) Interpretation of the landscape architect's plans and specifications; estimating quantities of materials; and, computing costs procedures for bidding and executing landscape construction.

ORH 4864 Landscape Contracting II (3) Advanced interpretation of the landscape architect's plans and specifications, estimating quantities of materials, and computing costs procedures for bidding and executing landscape construction for larger scale and advanced landscape projects.

ORH 4942 Landscape Design Internship (2-6) Program coordinator's permission required. Juniors and seniors only; designed to meet needs and interests of individual's major.

PLS 2221C Plant Propagation (3) Sexual and asexual reproduction of plants, including propagation by seed, cuttings, and grafts to other structures.

SUR 1100C Surveying (3) SUR 1100L (1) This course includes lecture and field practice covering use, care and limitations of various surveying instruments and related equipment. Students are shown how to properly record in field notes the data taken from rod, tape, differential level, etc. Students conduct field exercises and prepare related reports. Principle subjects included are leveling and measurement of angles.

SUR 2140 Elementary Surveying (3) SUR 2140L Elementary Surveying Laboratory (1) Prereq: MAC 1147 Pre-Calculus Mathematics. Combination of theory and practice of surveying, care of tape, level, theodolite and other surveying equipment. Traverse surveys, measurement of areas from survey of lands, and introduction to use of computerized instruments.

SUR 3141 Engineering Surveys (3) SUR 3141L Elementary Laboratory (1) Prereq: Prereq: SUR 2140 Elementary Surveying. Principles of surveying as applied to engineering practice. Major topics include control surveys, geodetic surveys, cadastral surveys, horizontal and vertical surveying, construction applications.

SUR 3201 Highway Surveying (3) SUR 3201L Highway Surveying Laboratory (1) Prereq: SUR 2140 Elementary Surveying. Basic Surveying Methods to include route layouts and construction, design, equipment uses, vertical & horizon control, planning and construction surveys for highways; circular reverse, compound, parabolic and spiral curves; cross sections, mass curves, related earthwork. Basic Surveying Methods to include route layouts and construction, design, equipment uses, vertical & horizontal control.

SUR 3331 Photogrammetry (3) Principles of stereoscopic instruments preparation of maps and charts from aerial photographs; delineations of land forms; physiographic, geographic, and geological features of aerial surveys.

SUR 3393 Geographic Information Systems (3) SUR 3393L Geographic Information Systems Laboratory (1) This course incorporates GIS concepts, surveying and mapping inputs in GIS development, comparison of GIS systems, and applications in the natural and physical sciences, engineering and planning.

SUR 3403C Legal Aspects of Surveying (3) Prereq: SUR 2140 Elementary Surveying. Legal aspects of land descriptions, U.S. system of land subdivision, boundary surveys, writing legal descriptions of real property, and recording deeds are covered. Practical exercises will include computer generated descriptions from coordinates and visits to Leon County public records.

SUR 3451C Land Information Systems (3) SUR 2140 Elementary Surveying (1). Introductory course in land information systems for managing growth, development, and large amounts of spatially related data. Sources and types of information, systems to utilize information, and practical applications will be covered. Field trips will be made to locally operating systems.

SUR 3501C Modern Surveying Instrumentation (3) Prereq: SUR 2140 Elementary Surveying. Theory, development and operating principles of electronic distance measuring equipment, digital theodolites and data collectors, inertial surveying systems, satellite positioning systems and future trends. This dynamic technology is presented in lectures, field exercises,

and manufacturers demonstrations.

SUR 4300 Topography Contour Surveying and Drainage (3) SUR 4300L Topographic Contour Surveying & Drainage Laboratory (1) Prereq: SUR 2140 Elementary Surveying. Theory and methods of contour surveying, altimetry, and topographic surveying; hydrology and hydraulic systems involve in storm water analysis design; study of the different hydrologic analysis methodology; surface water profile; storm sewer piping analysis design. This course involves mathematical and computer analysis and modeling.

SUR 4380 Remote Sensing Applications in Civil Engineering Technology (3) Prereq: SUR 3451C Land Information Systems. Remote sensing applications to growth management and facility or site planning, including land use assessment. Topics covered include aerial photography and space based information such as Landsat data, SPOT and Thematic Mapper.

SWS 3022C and 3022L Nature and Properties of Soils (4) Prereq: CHM 1045. Fundamental principles of soil science: origin, formation composition, and classification of soils and their properties as related to growth of higher plants.

SWS 3211C Soil and Water Conservation (3) Land measurement; contours and contour running; planning, designing, and layout farm ponds; and designing and operation of farm irrigation systems.

SWS 4021 Tropical Soils (3) Prereq: SOS 3022. Characteristics and management of tropical soils with emphasis to technologies, which minimize industrial inputs.

SWS 4131C Soil Fertility and Fertilizers (3) Prereq: SOS 3022, CHM 1046. Principles underlying maintenance and improvement of soil productivity. Sources, manufacture, properties of fertilizer materials, and principles of fertilizer application.

SWS 4427 Soil and Plant Analysis (3) Prereq: SOS 3022, CHM 1046. Principles applied in the analysis of soil and plant samples, sampling procedures, relationship of nutrient deficiencies and symptoms exhibited in plants, utilization of the results of analysis in the management of soil for plant productivity.

SWS 4732C Soil Survey (3) Prereq: SOS 3022. Classification of soils, use of soil survey equipment, and preparation of soil survey map. Several extended field trips required.

VEC 3228C Vegetable Production (3) Prereq: HOS 2010. Production, harvesting and preparation of vegetables for home and market; emphasis on Florida crops.

VME 4117 Animal Sanitation and Disease Control (3) Prereq: ANS 3006; MCB 3020 Economically important diseases and parasites of livestock discussed from the standpoint of causes, spread, protection, and treatment.

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 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.

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 reserves 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 apprised of current graduation requirements by regular consultation with his or her advisor. All admissions to the professional program of the College of Pharmacy, effective fall semester 1997, will be to the Doctor of Pharmacy program. Students are alerted that a Student Handbook for the College is published annually and contains the details of the academic and matriculation policies of the College.

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 (MS) in pharmaceutical sciences with concentrations in pharmacology/toxicology, medicinal chemistry, pharmaceuticals, pharmacoepidemiology, and pharmacoconomics. The Master of Public Health (MPH) and Doctor of Public Health (Dr.PH) degrees are offered through the Institute of Public Health. The Doctor of Philosophy (Ph.D.) in pharmaceutical sciences is offered with concentrations in pharmacology/toxicology, medicinal chemistry, pharmaceuticals or environmental toxicology.

Faculty

Basic Sciences

Professors: Ablordeppey, S.; Holder, M.; Kolta, M.; Lewis, B.; Redda, K.; Sachdeva, M.; Samaan, S.; Soliman, K.; Soliman, M.; Thomas, R.

Associate Professors: Cooperwood, J.; Goodman C.; Lamango, N.; Oriaku, E.; Palm, D.; Reams-Brown, R.

Assistant Professors: Jackson, T.; Kandimallah, K.; Spencer, S.

Pharmacy Practice

Professors: Branch, E.; Kirksey, O.; Lewis III, H.; Massey-Hill, A.;Thompson, M.

Associate Professors: Ghazvini, P.; Honeywell, M.; Larose-Pierre, M.; Norwood, D.; Rappa L.; Scrivens, J.; Simon, W.; Thomas, R.L.; Thornton, A.

Assistant Professors: Bailey, C.; Boozer, T.; Colquitt, C.; Emanuel, F.; Eraikhuemen, N.; Harrison, S.; Jones, J.; King, J.; King, K.; Robertson, G.; Scott, M.; Singh, A.; Warthen, J.; Wolf, A.

Instructors: Brickler, M.

Economic, Social and Administrative Pharmacy

Professor: Odedina, F.

Associate Professor: Xiao, H.; Campbell, E.

Assistant Professors: Barber, J.

Public Health:

Professors: Brown, C.; Harris, C.

Associate Professors: Chase, F.; Kiros, G.

Assistant Professors: Ashford, A.; Lopez, I; Rahman, S.; Ross, L.; Suther, S.; Tan, F.; Wiltshire, J.

Limited Access Program

The College of Pharmacy and Pharmaceutical Sciences' Doctor of Pharmacy (PharmD), a professional degree program, is among the limited access programs at Florida A&M University. The College accepts students into this program during the fall semester only. Acceptance at the first professional (third year of college) is determined by availability of space, not the size of the applicant pool. Students admitted to the program maintain a slot as long as the required grade point average is maintained and adherence to the policies of the College and University are observed. Students admitted to the professional program compete for positions at the first professional year level ONLY.

Accreditation

Florida A&M University's Doctor of Pharmacy program is accredited by the Accreditation Council for Pharmacy Education; 20 North Clark Street; Chicago, Illinois 60602; Telephone (312) 664-3575, (800) 553-3606; Fax (312) 664-4652. www.acpe-accredit.org.

Goals and Objectives

The College of Pharmacy recognizes its responsibility to prepare students for the professional and business aspects of community and hospital pharmacy practice and to provide a fundamental background for further study in other areas of the profession. The curriculum is designed to equip the student for citizenship in the world of intellectual and moral responsibility based on a thorough knowledge of his or her own profession. Specifically, the College of Pharmacy aims to:

- I. prepare students to enter the practice of pharmacy with competencies demanded by his or her role in health care and to provide breadth of scientific and professional background so as to allow versatility of practice within the subsystems of pharmacy practice;
- II. stimulate and nurture in the student the processes of intellectual creativity, imagination, curiosity, problem-solving, and public service;
- III. instill attitudes of professionalism and ideas for the cultivation of

- optimum execution of duties and responsibilities in rendering quality health care service;
- IV. develop knowledgeable appreciation of the pharmacist's legal, ethical, moral and social responsibilities;
 - V. convey a positive attitude about on-going and continuous updating of professional knowledge and competencies;
 - VI. promote membership in professional organizations and learned societies as an integral part of competent growth and development; and
 - VII. emphasize appropriate relationships with other health care professionals, especially with co-professionals on the health care team.

General Graduation Requirements

The following general requirements must be met for the Doctor of Pharmacy degree:

- I. Satisfactory completion of not less than 134 semester hours of university level upper-division professional course work for the doctor of pharmacy degree.
- II. The selection of a specialty area of study, if other than general practice, and the preparation of a program of study which is oriented toward a realistic educational objective with a clear professional purpose. This program must be developed with and approved by the student's advisor and filed with the Office of the Dean at the beginning of the upper-division professional program (3rd year of the undergraduate curriculum).
- III. Satisfactory completion of the minimum course work requirements prescribed below in the context of a program of study relating to specific specialty areas of emphasis. (The grade of 'C' or better is required in all pre-professional and professional courses.)
 - A. Freshman English and humanities, six (6) hours each;
 - B. Other general education courses as prescribed by the University;
 - C. History, behavioral sciences-including sociology, psychology, geography, political science, and history of the U.S.;
 - D. Mathematics-six (6) hours of pre-calculus and calculus or more advanced equivalent.
 - E. Biological sciences-eight (8) hours, including zoology and botany or the equivalent.
 - F. Physical sciences-twenty-four (24) hours, including general chemistry, qualitative analysis, organic chemistry, and physics. (Labs are required.)
 - G. Minimum keyboard skills of 40 words per minute with acceptable error rate will be required of students prior to the second year of the professional curriculum. The College of Pharmacy does not have a formal course in keyboard skills.
 - H. Students must demonstrate competency on the comprehensive examination during the senior year with minimum score of 75 prior to graduation.
 - I. Students must complete 800-2000 contact hours of clerkship/internship training at a clinical site approved by the College of Pharmacy and Pharmaceutical Sciences.
 - J. Completion of a minimum of 50 hours (200 total) per year of volunteer community service learning.
 - K. All candidates for graduation must have been enrolled full time in the professional component of the curriculum of the College of Pharmacy for a minimum of eight (8) semesters regardless of the number of credit hours of study completed in other fields.
 - L. Active membership in the Academy of Students of Pharmacy/Student National Pharmaceutical Association each academic year of enrollment in the College of Pharmacy.

Policies

Matriculation - The College has promulgated matriculation policies for the Doctor of Pharmacy program. Due to dynamic forces impacting pharmacy professional practice direction, accreditation guidelines, peer academic consensus, standards of practice, licensure requirements, and other external, as well as in-house considerations, the College may implement curricular changes which are required not only of incoming students but also of the currently enrolled matriculate. Students are admonished of their responsibility to avail themselves of these policies from the dean's office and/or the academic notices bulletin board to keep abreast of these policies and any changes that may occur. An Academic Policy Handbook is printed annually to document these changes.

Sequence of Courses - The student is expected to enroll in and com-

plete courses in sequence, adhering at each point to all prerequisites. It is essential, then, that the student keep 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). (i.e. All 3rd year courses must be completed before any 4th year courses are attempted).

Student Organizations- The College of Pharmacy has several active professional organizations and class organizations, each of which sponsors its own professional and social events. All students are expected to participate actively in ASP/SNPHA and one or more of the other groups.

Class Attendance - Compulsory attendance to classes is demanded of all students in the College of Pharmacy. In addition to the University's mandatory class attendance policies, the College of Pharmacy has regulations regarding class attendance that are specific and are enforced by the faculty. Students are alerted of the need to familiarize themselves with the academic consequences of failure to comply with mandatory class attendance.

Dress Code - Students are required to subscribe to the dress code promulgated jointly by the faculty and students. Faculty members enforce this dress code in the classroom and laboratory and during clinical experiences as an integral part of the training of student professionals. The student has a responsibility to adhere to the dress code.

Pharmacy Forum and Colloquium - Students are required to attend the pharmacy forum and colloquium series each semester of enrollment in didactic courses. Attendance and participation is mandatory. Failure to participate will result in receipt of a failing grade and must be repeated prior to graduation.

Advisors - Advisement is a continuous and active process in the College of Pharmacy and Pharmaceutical Sciences. Each student is assigned to an advisor for advisement on matters relative to the student's academic program and professional activities. The advisor should be the student's first line of communication in addressing academic, professional, and/or other perceived problems. The advisor will maintain a record of advisement activities for each student.

Graduation Competency - The College of Pharmacy and Pharmaceutical Sciences' administration and faculty recognize their responsibility to graduate only the student whom they judge to be ready to accept the challenges of the pharmacy profession academically, ethically, and professionally. Consequently, the dean of the College of Pharmacy and Pharmaceutical Sciences, upon recommendation of an appropriate committee or the faculty, reserves the right to withhold the recommendation for graduation of any student who does not conform to these expectations.

Externship Experiences - The professional programs in the College of Pharmacy and Pharmaceutical Sciences have as part of their academic requirements an externship experience. The experiences vary in length and may occur away from the University site in Tallahassee. Students are advised that they will be required to relocate to the city of the clerkship/externship experience site. Each student is expected to assume responsibility for all costs associated with the clerkship/externship experiences required for graduation.

Clinical Experiences - The professional programs in the College of Pharmacy and Pharmaceutical Sciences have as part of their academic requirements a clinical experience. The experiences vary in length and most occur away from the University site in Tallahassee. Students are advised that they will be required to relocate to the city of the clinical experience site. Each student is expected to assume responsibility for all costs associated with the clinical experiences required for graduation.

Career Opportunities

The profession of pharmacy offers a wide range of career opportunities that are limited only by the imagination and motivation of the person involved. The profession also offers great flexibility in choosing an area of practice that is both challenging and satisfying.

Graduates of the College have found outstanding professional positions in chain drugstores, community pharmacies, hospitals, academics, and clinical practice settings such as clinics, nursing homes and ambulatory centers. Outstanding career opportunities are also available with pharmaceutical manufacturing companies, the federal government, military and veteran facilities, as well as regulatory drug affairs. Positions for pharmacists can also be found in managed care organizations, insurance companies and other third-party providers. Career placement opportunities will be made available to the student during matriculation.

Specific information pertaining to entry and graduation require-

ments may be obtained by writing the College of Pharmacy and Pharmaceutical Sciences, Office of Pharmacy Student Affairs, Florida A&M University, Tallahassee, Florida 32307-3800.

Registered Pharmacist Licensure (Florida)

Licensure as a registered pharmacist is available to graduates of the pharmacy curriculum at the Florida A&M University College of Pharmacy and Pharmaceutical Sciences, by examination in all states and in the District of Columbia.

Additional information concerning licensure in Florida may be obtained by writing the Florida Board of Pharmacy, P.O. Box 6330, Tallahassee, Florida 32314-6330.

Doctor of Pharmacy Degree

The fundamental goal of the Doctor of Pharmacy Program at Florida A&M University is to provide a combined academic and clinical experience for pharmacy students whose abilities and career aspirations suggest potential for innovative leadership roles in professional pharmacy practice.

The major emphasis in the academic portion of the Doctor of Pharmacy Program is therapeutics and pharmacokinetics. Other areas of study include biostatistics, patient care, drug literature evaluation, clinical pharmacology, laboratory medicine, and clinical research. Candidates may elect courses in advanced toxicology, neuro-pharmacology, endocrine pharmacology, sociological aspects of health care, special research, and any of a number of other approved electives.

Through a series of clinical clerkships, covering approximately 1,500 hours, candidates receive training in general medicine, psychiatry, pediatrics, ambulatory care and elective drug rotations. Advanced clinical clerkship sites require candidates to transfer to Miami, Jacksonville, or Tampa, Florida, after completion of the academic portion in Tallahassee, for the final year of training.

Curriculum Notice

The College of Pharmacy and Pharmaceutical Sciences is currently undergoing an extensive curriculum revision, effective Fall 2008. Academic announcements of these changes will be made available in a timely fashion to allow students to prepare and register for the appropriate revised courses in consultation with their academic advisors.

Pre-Professional Core Curriculum

| Semester 1 (Fall) | Sem. Hrs. |
|--------------------------------------------|-----------|
| PHA 1001 Introduction to Pharmacy | .1 |
| CHM 1045 General Chemistry I | .3 |
| CHM 1045L General Chemistry I Lab | .1 |
| ENG 1101 Freshman Communication Skills I | .3 |
| MAC 1147 Pre-Calculus | .4 |
| AMH 2091 Afro-American History | .3 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| General Education Elective | .3 |
| | 18 |
| Semester 2 (Spring) | |
| CHM 1046 General Chemistry II | .3 |
| CHM 1046 General Chemistry II Lab | .1 |
| ENC 11 02 Freshman Communication Skills II | .3 |
| CSG 1160 Introduction of Microcomputers | .3 |
| PHA 1720 History of Pharmacy* | .1 |
| SYG 2000 Introduction to Sociology | .3 |
| MAC 2311 Calculus | .4 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| | 18 |
| Semester 3 (Fall) | |
| BSC 1010 General Biology I | .3 |
| BSC 1010L General Biology I Lab | .1 |
| PHA 2004 Medical Terminology* | .1 |
| HUM 2211 Humanities I | .3 |

| | |
|-------------------------------------------|----|
| PHY 2053 College Physics I | .3 |
| PHY 2053L College Physics I Lab | .1 |
| CHM 2210L (3210) Organic Chemistry I | .3 |
| CHM 2210L (3210L) Organic Chemistry I Lab | .1 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| | 16 |

Semester 4 (Spring)

| | |
|------------------------------------------|----|
| BSC 1011 General Biology II | .3 |
| BSC 1011L General Biology II Lab | .1 |
| HSC 1402 Emergency Medical Care* | .1 |
| HUM 2230 Humanities II | .3 |
| PHY 2054 College Physics II | .3 |
| PHY 2054L College Physics II Lab | .1 |
| CHM 2211/3211 Organic Chemistry II | .3 |
| CHM 2211L/3211L Organic Chemistry II Lab | .1 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
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*Must be completed by end of the first professional year of study.

This curriculum is for information only and should not be construed as the basis of a contract. The College of Pharmacy and Pharmaceutical Sciences reserves the right to amend or alter the curriculum in order to provide an educationally sound professional program. FOR FURTHER INFORMATION, WRITE TO: Florida A&M University, College of Pharmacy and Pharmaceutical Sciences, New Pharmacy Building - Room 354, Pharmacy Student Services Office, Tallahassee, FL 32307-3800, (850) 599-3016.

Professional Curriculum

First Professional Year

| Semester 5 | Sem. Hrs. |
|--------------------------------------------------------|-----------|
| PHA 3580 Human Structure & Functions & Lab | .5 |
| PHA 3110 Pharmaceutics I & Lab | .4 |
| PHA 3426 Physiological Chemistry & Drug Analysis & Lab | .4 |
| PHA 3721 Pharmaceutical Care I/Communications | .2 |
| PHA 3241 Pharmacy Automated Systems | .2 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| | 17 |

Semester 6

| | |
|------------------------------------------------|----|
| PHA 3751 Medical Microbiology & Immunology | .3 |
| PHA 3111 Pharmaceutics II & Lab | .4 |
| PHA 3581 Pathophysiology | .5 |
| PHA 3242 Pharmaceutical Care II/Communications | .2 |
| PHA 3450 Clinical Chemistry (Lab. Med) | .1 |
| PHA 3713 Elements of Biostatistics | .2 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| | 17 |

Summer - Supervised Externship

Second Professional Year

Semester 7

| | |
|------------------------------------------------------|----|
| PHA 4120 Pharmacokinetics and Biopharmaceutics & Lab | .4 |
| PHA 4510 General Pharmacology I & Lab | .4 |
| PHA 4430 Pharmacomedicinal Chemistry I & Lab | .4 |
| PHA 4724 Pharmacy Health Care and Behavior | .4 |
| PHA 4608 Pharmaceutical Care III | .2 |
| PHA 3951 Pharmacy Forum & Colloquium | .0 |
| | 18 |

Semester 8

| | |
|---------------------------------------------------------------|-------|
| PHA 4210 Pharmacy Management of Health Care Systems | 2 |
| PHA 4511 General Pharmacology/Toxicology II & Lab | 5 |
| PHA 4431 Pharmacomedicinal Chemistry II & Lab | 4 |
| PHA 4769 Counsel Nonprescription Drugs | 2 |
| PHA 4604 Pharmaceutical Care IV | 3 |
| PHA 3951 Pharmacy Forum & Colloquium | 0 |
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Summer - Supervised Externship**Third Professional Year****Semester 9**

| | |
|--------------------------------------------------------------|-------|
| PHA 5605 Pharmacotherapeutics I | 4 |
| PHA 4230 Pharmacy Juris and Ethics | 2 |
| PHA 5786 Patient Assessment | 2 |
| Or PHA 5794 Drug Information Systems & | |
| PHA 5792 Drug Literature Evaluation | 2 |
| PHA 4126 Pharmacokinetics | 3 |
| PHA 3951 Pharmacy Forum & Colloquium | 0 |
| PHA 5746 Counseling Skills | 1 |
| Professional Elective: (PHA 5566,PHA 5602,PHA 5232,PHA 5745, | |
| PHA 5601,PHA 4728,or PHA 5768) | 3 |
| | <hr/> |
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Semester 10

| | |
|-----------------------------------------------------------|-------|
| PHA 5606 Pharmacotherapeutics II | 4 |
| PHA 5810 Applied Immunology | 2 |
| PHA 5786 Patient Assessment | 2 |
| Or PHA 5794 Drug Information Systems & | |
| PHA 5792 Drug Literature Evaluation | 2 |
| PHA 5930 Issues in Contemp Pharmacy Practice | 2 |
| PHA 4103 Prescription Analysis & Interpretation | 4 |
| PHA 3951 Pharmacy Forum & Colloquium | 0 |
| Professional Elective (PHA 5566,PHA 5602,PHA 5232,PHA | |
| 5745,PHA 5601,PHA 4728, or PHA 5768) | 3 |
| | <hr/> |
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Summer - Supervised Externship**Fourth Professional Year****Semester 11 and Semester 12**

| | |
|----------------------------------------------|-------|
| PHA 5694 Medicine I | 4 |
| PHA 5695 Medicine II | 4 |
| PHA 5692 Ambulatory Care I | 4 |
| PHA 5676 Ambulatory Care II | 4 |
| PHA 5696 Psychiatry | 4 |
| PHA 5681 Pediatrics | 4 |
| Elective Clerkships (2) | 8 |
| PHA 5932 Clinical Seminar I | 1 |
| PHA 5933 Clinical Seminar II | 1 |
| PHA 5718 Clinical Research Methods | 1 |
| | <hr/> |
| | 35 |

Course Descriptions

PHA 1001 Introduction to Pharmacy (1) Assessment of pharmacy as a profession; discussion of major professional organizations. Components of the curriculum and professional practice options. One (1) hour per week.

HSC 1402 Emergency Medical Care (1) Basic lay care of the injured prior to involvement of the emergency medical system.

PHA 1720 History of Pharmacy (1) Epochal development of pharmacy as a component of health care; impact of other cultures and times in pharmacist-patient interaction today. One (1) hour lecture per week.

PHA 2004 Medical Terminology (1) Introduction to basic prefixes, suffixes, and root words utilized in medical vocabulary. One (1) hour lecture 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 Laboratory (2) Coreq: PHA 3110. Laboratory accompaniment of Pharmaceutics I. Six (6) hours per week.

PHA 3111 Pharmaceutics II (3) Prereq: PHA 3110. Continuation of PHA 3110. Three (3) hours lecture per week.

PHA 3111L Pharmaceutics II Laboratory (1) Coreq: PHA 3111. Laboratory accompaniment of Pharmaceutics II. Three (3) hours per week.

PHA 3420 Drug Metabolism (4) Prereq: CHM 3211. 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 3421 Pharmacy Automation Systems (2) The understanding and use of technology aids to enhance research problem solving, information management, and related pharmaceutical interests. One (2) hour lecture, demonstration, or practice per week.

PHA 3242 Pharmaceutical Care II - Communications (1) Prereq: Completion of third professional year Fall semester courses. All the knowledge acquired in pharmacy school can only be put to practice through the effective communication skills to be presented in this course. Specific course topics are discussed within the frame work of two themes: Patient-centered communication and colleague-centered communication.

PHA 3242L Pharmaceutical Care II -Communications Laboratory (1) Coreq: Concurrent enrollment in PHA 3242. Laboratory accompaniment to PHA 3242. Two (2) hours per week.

PHA 3426, 3426L Physiological Chemistry & Drug Analysis & Lab (4) Prereq: 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 3450 Clinical Chemistry (Lab Medicine) (1) Prereq: Concurrent enrollment in PHA 3581: Introduction to various clinical laboratory tests used to diagnose disease and in monitoring drug-related problems. Provides foundation for Pharmaceutical Care III/IV and pharmacotherapeutics.

PHA 3580, 3580L Human Structure/Functions (4,1) Prereq: CHM 3211, BSC 1010 Gross anatomy of body structure. Individual organ systems and normal body functions discussed. Four hours lecture and two hours laboratory per week.

PHA 3581, Pathophysiology (5) Prereq: PHA 3580. Concurrent enrollment in PHA 3450. Effect of disease on normal physiologic function of various organ systems throughout the body. Specific emphasis on physiologic alterations of organ systems presented. Five (5) hours lecture per week.

PHA 3713 Elements of Biostatistics (2) Statistical parameters essential to understanding, interpreting and evaluating health-care periodical literature. Two (2) hours lecture per week.

PHA 3721 Pharmaceutical Care I and Communications laboratory (1) Introduction of student to the various areas of pharmacy practice (i.e. retail, hospital, nursing homes, home health and industry). Educational requirements, specific responsibilities of the pharmacist, legal implications and interdisciplinary relationships discussed.

PHA 3721L Pharmaceutical Care I and Communications Laboratory (1) Laboratory accompaniment to Pharmaceutical Care I lecture. Communication between pharmacist and patient, as well as pharmacist and other health professionals is emphasized. Dynamics involved with interviewing techniques and the importance of nonverbal communication discussed. Two (2) hours per week.

HSC 3722 Spanish for Pharmacists and Health Professionals I (3) An intensive Spanish oral-aural approach to Spanish for students with no previous training in the language. The student will be able to apply functional language communication skills by using specialized terminology in his/her area related with pharmacy program. Students, whether professionals already working in the field or career/goal-oriented students in an occupational training program, are presented key vocabulary in a comprehensible input format, focusing on easily mastered core expressions. Photographs, and brief dialogues supported by brief grammar

explanations, reinforce needed terms. In class, students will practice communicative survival using key vocabulary essential to each context to enable them to utilize their Spanish in the real world at work.

HSC 3723 Spanish for Pharmacists and Health Professionals II (3) Prereq. HSC XXXX. This is a continuation course. The student will be able to apply functional language communication skills, speak, read, and write sample standard themes in his/her area of specialization. Advanced Grammar will be integrated into the learning process. Students will focus on communicative survival using essential vocabulary to the topic to enable them to utilize their Spanish in the real world of their job environment.

PHA 3751 Medical Microbiology and Immunology (3) Prereq: CHM 3211. Fundamental principles underlying activities of microorganisms. Special emphasis on pathogenic bacteria, viruses, etc.; their pathogenicity, symptomology, host-parasite relationship, prevention, and treatment. Two (2) hour lecture/demonstration per week.

PHA 3951 Pharmacy Forum and Colloquium (0) Colloquium involving national speakers, informational presentations and career opportunities along with student discussions. Students are required to be knowledgeable of the company each speaker represents and ask questions of each speaker. Only one (1) excused absence is allowed per semester. An unsatisfactory grade will require the student to repeat that semester forum schedule. Registration is required in PHA 3951 for ten (10) consecutive semesters or each semester of enrollment while admitted to the professional program. One (1) hour presentation as scheduled.

PHA 4103, Principles of Medication Dispensing and Compounding. (3) Prereq: Completion of semester 9 course work. Interpretation and evaluation of prescription orders including compounding, dispensing and education of patients receiving prescribed therapy. Various types of prescription orders including oral, parenteral and topical therapies are prepared. Specific emphasis on evaluating preparation technique, analysis of the prescription for completeness, drug-interactions and appropriateness of therapy, labeling as well as the ethical and legal principles involved with the drug preparation and dispensing process.

PHA 4103, Principles of Medication Dispensing and Compounding Laboratory (1) Prereq: Concurrent enrollment in Principles of Medication Dispensing and Compounding. Laboratory accompaniment of lecture course. Three (3) hours per week.

PHA 4120 Pharmacokinetics and Biopharmaceutics (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. Three (3) hours lecture per week, two hours laboratory.

PHA 4126 Clinical Pharmacokinetics (3) Prereq: PHA4122. Primary focus on clinically functional approach to design of dose regimens, including special problems due to hepatic and renal functional impairment, drug interactions, and immaturity of enzyme systems.

PHA 4210, 4210L Pharmacy Management of Health Care System (2) Prereq: Completion of semester 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 4230 Pharmacy Jurisprudence and Ethics (2) Prereq: Completion of 4th semester. Various state, local and federal laws governing practices of pharmacy; ethical dilemmas, conflict of moral issues and law; the judiciary system. Two (2) hours per week.

PHA 4430, 4431 Pharmacomedicinal Chemistry I, II (3,3) Prereq: PHA 3420. Chemistry of natural and synthetic drugs, their physicochemical properties, synthesis/biosynthesis, sources, derivatives, metabolism, structure-activity correlation. Three (3) hours lecture per week. PHA 4430 is prerequisite to PHA 4431.

PHA 4430L, 4431L Pharmacomedicinal Chemistry I, II Laboratory (1,1) Coreq: PHA 4430, 4431 respectively. Companion laboratory to Pharmacomedicinal Chemistry 1, 11. Two (2) hours per week.

PHA 4510 General Pharmacology & Lab (3) Prereq: PHA 3420, PHA 3580. Effects of drugs on normal and disordered organ systems. Demonstrations, lectures, discussions, and experiments relating to use of drugs in health and disease. Three (3) hours per week.

PHA 4510L General Pharmacology I Laboratory (1) Coreq: PHA 4510. Companion laboratory to General Pharmacology. Three (3) hours per week.

PHA 4511 Pharmacology II and Toxicology (4) Prereq: PHA 4510. Continuation of PHA 4510, General Pharmacology. Emphasis on toxic effects and their management. Four (4) hours lecture per week.

PHA 4511L Pharmacology II and Toxicology Laboratory (1) Coreq: 4511. Companion laboratory to Pharmacology and Toxicology II. Three (3) hours per week.

PHA 4604 Pharmaceutical Care IV. (3) Prereq: Successful completion of Pharm Care III. Concurrent enrollment in PHA 4511 Continuation of Pharmaceutical Care III.

PHA 4608 Pharmaceutical Care III (2) Concurrent enrollment in PHA 4510. This therapeutic course is integrated with pharmacology and medicinal chemistry. Use of drugs presented is pharmacology and pharmacomedicinal chemistry in managing patients with various disease states is discussed. Specific emphasis will be placed on disease management principles, monitoring drug therapy effectiveness, care plan development, selection of most appropriate drug for specific indications. Introduction to the problem oriented medical record.

PHA 4724 Pharmacy Health Care & Behavior (4) Social Economic and behavioral fundamentals of health care and pharmacy practice in particular.

PHA 4728 Gerontology and Nutrition (3) Prerequisite: enrollment in Semesters 9/10. A course designed to explore major diseases experienced in the geriatric population and effective therapeutic management. Considerations for pharmacodynamic and pharmacokinetic changes in the elderly.

PHA 4769 Counseling in Non-Prescription Drugs (3) Professional and pharmacological aspects of non-prescription medications. Patient counseling and management of disease states. Product selection.

PHA 4905 Directed Individual Study (2-5) Prereq: Consent of instructor.

PHA 5232 Evolution of Pharmacy Law and Ethics. (3) Prerequisite: enrollment in Semesters 9/10. Review of the pharmacists ethical role in practice and the laws influencing ethical behavior.

PHA 5566 Cardiovascular Wellness and Prevention (3) Prerequisite: enrollment Semesters 9/10. Course designed to explore and present the factors and lifestyle changes required to prevent cardiovascular diseases.

PHA 5601 Pediatric Ambulatory Care (3) Prerequisite: enrollment in Semesters 9/10. pharmacotherapeutic management of selected diseases in pediatric patients encountered in ambulatory settings.

PHA 5602 Pediatric Pharmacotherapy in the Acute Care Setting (3) Prerequisite: enrollment Semesters 9/10. Review of pharmacotherapeutic management of various disease states encountered in pediatrics as seen in the acute care setting.

PHA 5605 Pharmacotherapeutics I . (4) Prereq: Pharm Care IV. Continuation of Pharmaceutical Care IV. Therapeutic management of various diseases with emphasis on developing plans of care, monitoring and evaluation of drug therapy regimens. Use of advanced technology in the diagnosis and therapeutic management of diseases. Development and use of algorithms in the disease management process. Process for documenting therapeutic recommendations/interventions.

PHA 5606 Pharmacotherapeutics II (4) The course is a continuation of PHA 5605 Pharmacotherapeutics I. Therapeutic management of selected disease states is presented. Students learn basic skills required for effective disease management. Critical problem solving utilizing actual patient case scenarios and the ability to design, implement, and evaluate therapeutic regimens is expected.

PHA 5681, 5676, 5692, 5694, 5695, 5696, 5697, 5698 Clinical Clerkships I, II, III, IV, V, VI, VII Each candidate is required to complete full-time rotations in each of the following: psychiatry, internal medicine, pediatrics, drug information, ambulatory care.

PHA 5699 Clinical Clerkship VIII (I -10) Selected clerkship. Advanced study in a clerkship of choice.

PHA 5745 Pharmacy Communications (3) Prerequisite: enrollment in Semesters 9/10. A study of basic concepts in effective communication techniques with specific emphasis of the role of the pharmacist in improving patient understanding of medication regimens and health related issues.

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.

PHA 5768 Alternative Medicine (3) This course will allow students to learn about the medicinal uses of alternative medicine, the role of the pharmacist in educating consumers about alternative medicine, and the risks and benefits associated with alternative medicine.

PHA 5786 Patient Assessment Skills (2) Designed to develop knowledge in clinical methods of evaluation, and data collection and

interpretation. Techniques of patient interviewing, charting, medication profiling, and patient advisement will be covered.

PHA 5794 Drug Information Systems (1) & Drug Literature Evaluation (1) Sem. 9 & 10. Review of principles and techniques employed in evaluation of clinical literature, with emphasis on effective use of available literature sources. The types of drug information centers and of the operation and management of a drug information center with emphasis on the retrieval systems utilized.

PHA 5810 Applied Immunology (2) Directed elective. 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.

PHA 5915 Special Research Studies (2-5) Consent of instructor. An individual clinical research project of the candidate's interest designed to identify and offer solutions to clinical problems.

PHA 5930, Issues in Contemporary Pharmacy Practice. (2) Prereq: Completion of semester 9 course work. Current topics of interest to the profession of pharmacy. This course has been designed to assist in shaping student philosophy and overall understanding of controversial issues affecting pharmacy practice.

PHA 5932, 5933, Clinical Seminars (1,1) Weekly discussion of current topics of interest in the area of clinical pharmacy will be presented by faculty, students, and invited outside lectures.

PHA 6614 Pharmacotherapy of Infectious Diseases (3) The therapeutic management of various infectious diseases discussed. Specific emphasis is placed on building an effective patient database to provide for rational empiric antimicrobial selection. Students are expected to design, implement and evaluate drug therapy recommendations to achieve positive clinical, economic and humanistic outcomes. Prospective patient monitoring experiences, case presentations and development and evaluation of a theoretical proposal for justification of clinical services in this area required.

PHA 6729 Fundamentals of Pharmaceutical Care (3)**:This foundational course provides the fundamental skills required for effective monitoring of drug therapy and for the design and evaluation of therapeutic regimens. The course provides the necessary skills to administratively evaluate clinical services provided in various health-care settings. The course is divided into two (2) major portions: Part I: Laboratory Medicine and Applied Pharmacokinetics (i.e. review of general principles with application). Part II: A review of basic concepts in Pharmacoeconomics including economic evaluations (i.e. cost of illness, cost minimization, cost-benefit, cost-effectiveness and cost-utility) as well as humanistic evaluations (i.e. quality of life, patient preferences and patient satisfaction). Strategies to incorporate pharmacoeconomics into pharmacotherapy will be explored. A clerkship component will be included and will consist of case-analysis, a paper and evidence of patient monitoring with approved preceptors.

***Note:** This course is required for every person entering into the program. This program combined with the ASHP Clinical Skills Program will insure that candidates are on the appropriate level for future offerings and will negate differences between students based upon years out of school and basic foundation knowledge. This course will be offered each semester. Upon completion of this course, the student will be allowed to take subsequent courses as offered.

PHA 6772 Therapeutic Management of Gastrointestinal and Nutritional Disorders (3) Common diseases affecting the gastrointestinal tract are presented. Specific emphasis placed on the pharmacotherapeutic management of diseases such as peptic ulcer disease, gastroesophageal reflux disease, pancreatitis, hepatitis, liver cirrhosis as well as nutritional disorders; including total parenteral nutrition, vitamin and nutritional supplements/enteral therapy, impact of various disease states on nutritional therapy selection and monitoring, appetite stimulants and other disorders. Prospective monitoring of patients and case presentations required.

PHA 6787 Cardiac and Respiratory Therapeutics (3)This course has been designed to teach students basic skills required to manage basic disease therapy for patients with common cardiac and respiratory disorders. Basic pathophysiology of selected cardiac and pulmonary disorders presented with corresponding symptomatology and therapeutic management to insure positive therapeutic outcomes. Students will be acquainted with basic techniques utilized in diagnosis and treatment of cardiac and pulmonary disorders.

PHA 5718 Research Methods. (1) Completion of semester 10 course work. Students will work collaboratively with assigned professors to complete a research project and paper of publishable quality. Emphasis placed on research design, proposal writing, problem solving,

abstract and manuscript preparation.

PHA 6594 Pharmaceutical Care for Patients with Endocrine and Genitourinary Disorders (3)Selected endocrine and genitourinary diseases are discussed. Emphasis on the pharmacotherapeutic management of these disease states including the design, implementation and evaluation of recommendations. Prospective monitoring of patients. Topics include acute and chronic renal failure, neurogenic bladder and glomerulonephritis, gender-specific problems(e.g. prostate disorders, impotence, endometriosis, hormonal replacement and other complications), diabetes and thyroid and other related diseases. Prospective monitoring of patients and case presentations are required.

PHA 6789 Neuropsychiatric Pharmacotherapy (3) Pharmacotherapy of selected psychiatric disorders presented ranging from topics such as eating disorders, schizophrenia, substance abuse, depression, obsessive-compulsive and bipolar disorders. Neurologic disorders such as multiple sclerosis, epilepsy, pain management and Parkinson's Disease. Prospective monitoring of patients and case presentations required. Use of pharmacoeconomic principles to determine effect of various therapies on selected outcomes.

PHA 6780 Hematologic and Oncologic Disorders (3) Pharmacotherapy of selected hematologic and oncologic disorders ranging from anemia to selected neoplasms. Specific emphasis on management of neoplasms utilizing chemotherapeutic regimens as well as drug therapy for associated complications such as nausea, vomiting, myelosuppression and effective monitoring for different disease types. Specific emphasis on humanistic and economic evaluations and the impact of therapy. Case presentations and prospective monitoring of patients.

PHA 6787 Allergic and Cardiopulmonary Disorders (3): Emphasis on the therapeutic management of various allergic cardiac and pulmonary disorders. Disease management of selected cardiac disorders including cardiac hemodynamic monitoring, congestive heart failure, hypertension, arrhythmias and related complications. Asthma, COPD and management of other pulmonary disorders will be discussed. Students are required to receive CPR Certification.

PHA 6795 Drug Literature Evaluation, Technology and Research Methods (3) Review of biostatistics and research study design. Evaluation of drug literature and use of various retrieval systems to access drug literature. Critical analysis of original research to identify well-designed trials and how to identify faults in research study design. How to write an effective proposal for service implementation and for research projects required.

PHA 6261 Health Outcomes Evaluation and Pharmacoeconomics in Pharmacy Practice (3) Evaluation of pharmacy services on patient and various health-system outcomes explored. Use of pharmacoeconomic principles to evaluate drug therapy. Assessment of specific drug therapies on various humanistic outcomes. Case scenarios and discussion.

FAMU-FSU College of Engineering

Dean: Ching-Jen Chen

Associate Deans: Reginald Perry, Norman Thagard

Assistant Dean: Braketta Ritzenthaler

Director of Student Services: Sheldon White

The accelerating pace of technological developments has created an ever-increasing demand for highly qualified, professional engineers to maintain the high-tech momentum already achieved and to extend and direct its course. 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 use scientific knowledge and problem-solving skills to determine the best solutions to the problems of today and the future.

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 the world in which they work.

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 (BS) degree or an advanced research-oriented graduate program leading to the master of science (MS) or doctor of philosophy (PhD) degrees.

An engineer usually works as a member of a team in solving a problem or designing products or processes. The engineer's responsibility may include some of the following: 1) the conception of an idea, including a careful delineation of the problem; 2) the design of an item or process, including operational and production requirements; 3) the selection of materials; 4) the determination of markets; 5) the assessment of sociological effects and determination of methods for controlling these effects; 6) the design or selection of machines for production; and 7) the control of costs. Currently, over two-thirds of all technical positions and a large percentage of managerial positions in industry are occupied by engineers.

History and Goals

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 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 graduate and undergraduate 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. The

college also offers interdisciplinary specializations in bioengineering, biomedical, environmental, and materials engineering. More complete information can be found at the College Web site (<http://www.eng.fsu.edu/>) and in the department sections of this General Bulletin.

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 engineering are housed in the **Dirac Science Library** at Florida State University and in the **Coleman Library** at Florida A&M University. The college also maintains an engineering library resource and reading room (also referred to as the engineering reading room or the college library) that functions as a satellite to the two university libraries relative to engineering needs. Collections at the college library include monographs, texts, and reference works that directly support instruction and research at the college. Library computer facilities enable extensive electronic literature search throughout the university libraries and other sources. Library services include literature search training sessions for students and faculty. The college library is headed by a full-time librarian who is also a staff member of one of the two university libraries. Other college library personnel include assistants supported by the college.

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. Over 230 of these machines for general student use are high-end Pentium-class workstations supported by a cluster of Sun servers backed by a Storage Area Network. 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. Additionally, both universities provide on-campus facilities that are available to all students. Available software includes major general-purpose packages as well as special applications oriented toward particular disciplines. The college's research labs contain dozens of machines clustered together to provide enhanced research capabilities as well as Sun and other servers and Linux-based computing clusters to perform complex number crunching for simulations.

The college's computing infrastructure uses a gigabit core Layer 3 switch interconnected to edge switching via gigabit fiber. The college internet connection is a gigabit link connecting through the Florida State University backbone (Florida State University acts as the Internet services provider for the college) allowing for fast access to the Internet2 and the new LambdaRail network. Florida A&M University's computing facilities

also are connected to the Tallahassee MAN, thus providing a link to the college for its students.

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); these rooms have two studio cameras and one document camera connected to a desktop PC with a scan converter to display Web pages. A two-way live videoconferencing link via dedicated Fractional T-1 to the FSU-Panama City campus provides interactivity to synchronous distance delivery of classes to those students.

A Real Video G2 server is used to stream live and recorded programs, classes, and events from the college. The PolyCom VS4000 provides for 4-point IP videoconferences.

Supporting Facilities

Other nearby resources include the School of Computational Science (SCS); the Office of Technology Integration (OTI); the National High Magnetic Field Laboratory (the 'Mag Lab'); the Center for Advanced Power Systems (CAPS); the Challenger Learning Center in downtown Tallahassee that houses a 3-D IMAX theatre, planetarium, and a Challenger Space Mission and Control Center; Northwest Regional Data Center (NWRDC); Florida Department of Transportation research facilities; and WFSU Public Broadcasting television and radio stations as well as FAMU Computing Services.

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 Web site at <http://www.eng.fsu.edu/scholar.php>.

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, and internship co-op opportunity 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.

Honors in the Major

The College of Engineering offers honors in the major in several departmental programs. For requirements and other information, see the "University Honors Office and Honor Societies" chapter of this General Bulletin.

College of Engineering Florida A&M University - Florida State University

Academic Requirements for Admission and Retention in an Engineering Major (May 1, 2007)

Requirements for Admission and Retention in an Engineering Major

Engineering is a profession 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 ABET, Inc.

(the recognized accreditor for college and university programs in applied science, computing, engineering, and technology), 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 and make progress toward satisfying engineering major degree requirements. They are reviewed and revised as needed by the College of Engineering.

Pre-Engineering Requirements

All first-year engineering students (first-time-in-college or first-year transfer students) are initially coded as pre-engineering students until they satisfy the following pre-engineering requirements:

1. A grade of "C" or better in EGN 1004L, First Year Engineering Laboratory (1 hour). One repeat attempt is permitted. A student who needs more than one repeated attempt will not be allowed to continue in the engineering program. A transfer student may be eligible for an exemption of this requirement provided the student has completed requirement (2) listed below upon matriculation to the College of Engineering.
2. Students must achieve a grade of "C" or better, from any institution attended, in 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 four (4) courses listed above with no more than one grade of "C-" is allowed. Any student who needs two repeated attempts to complete the four courses or has two or more grades of "C-" may be considered for continuation in engineering. Contact the Office of the Associate Dean for details. Any student who needs three or more repeated attempts to complete the four courses listed above does not satisfy this requirement and will not be allowed to continue in the engineering program.
3. 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 must complete all course requirements during the next term of the student's enrollment.

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 the engineering dean and Council of Academic Program Coordinators (CAPS).

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 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.

Course Withdrawal/Drop Policy

1. Engineering students who seek to withdraw from or drop a course should do so by the drop deadline established by the College of Engineering. Please note that the engineering drop deadline is generally several weeks BEFORE the university's late course-drop deadline. Engineering students will not be permitted to drop or withdraw from a course after the engineering deadline except for a medical emergency, military obligation, or administrative reason.
2. An engineering student with excessive course withdrawals/drops may be transferred from his/her current engineering major to the pre-engineering major until he/she has met with an academic adviser to determine what steps are needed to improve the student's academic performance. The student may be reinstated back to his/her original engineering major only upon the approval of his/her academic department, the engineering dean, and the Council of Academic Program Coordinators (CAPS).

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 pre-engineering requirements as students who take all their course work at FSU. Students are advised to consult with the college as early as possible concerning their first two years of study. Students who transfer out of 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 Student Services 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) may need to attend one additional summer session.

The engineering curriculum is made up of five components: liberal studies, first-year engineering laboratory, engineering core, required courses in the engineering major area, and technical electives.

Liberal Studies

All students must meet University requirements for baccalaureate degrees stated in the "Undergraduate Degree Requirements" chapter of this General Bulletin. Of the thirty-six (36) semester hours required in liberal studies, thirteen (13) of these semester hours are automatically satisfied by the engineering core courses listed herein. The engineering student must take a total of twenty-four (24) semester hours in the areas of English, history, humanities, and social sciences. Students unprepared to begin calculus at the university level must, of course, also complete the necessary mathematics course work preparatory to calculus. All prospective engineering students should select humanities and social science courses to meet the above requirements.

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.

Engineering Core

All graduates of the college must master a common body of knowledge about their profession. This has been addressed by the adoption of an engineering core for all students seeking the BS in engineering. Some of these courses may be completed at a community college that offers a pre-engineering track. Others are only offered within the college.

The engineering core, which consists of basic science, mathematics, and professional courses, ensures that every student is provided with a solid background education regardless of his or her option. The required courses are listed below:

| | |
|---------------------------------------------------------|----|
| CHM 1045C General Chemistry | 4 |
| CHM 1045L General Chemistry I Lab | .0 |
| EEL 3003 Introduction to Electrical Engineering*** | .3 |
| EEL 3003L Introduction to Electrical Engineering Lab*** | .1 |
| EGM 3512 Engineering Mechanics** | .4 |
| EGN 2123 Computer Graphics for Engineers**** | .2 |
| EGN 3613 Principles of Engineering Economy* | .2 |
| EML 3100 Thermodynamics* | .2 |
| 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 |
| PHY 2048C General Physics A | .5 |
| PHY 2049C General Physics B | .5 |

* Except for chemical and mechanical engineering majors.

** Except for mechanical engineering majors.

*** Except for electrical and computer engineering majors.

**** Except for chemical, mechanical, electrical, and computer majors.

State of Florida Common Course Prerequisites

The State of Florida has identified common course prerequisites for engineering degree programs. These prerequisites are lower-level courses that are required for preparation for an engineering major prior to a student receiving a baccalaureate degree from Florida State University. They may be taken either at a community college or in a university lower-division program. It is preferred that these common course prerequisites be completed in the freshman and sophomore years.

The following lists the common course prerequisites or approved substitutions necessary for our engineering degree programs :

1. ENC X101
2. ENC X102
3. MAC X311*
4. MAC X312*
5. MAC X313*
6. MAC X302
7. CHM X045/X045L**
8. PHY X048/X048L
9. PHY X049/X049L
10. Six (6) semester hours of humanities
11. Six (6) semester hours of social sciences
12. Three (3) additional semester hours in humanities or social sciences

* or MAC X281, MAC X282, MAC X283

* or CHS X440

Engineering Major Area

Course requirements for engineering major areas consist of additional mathematics and basic science courses, engineering science courses, and engineering design 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
 PHY—Physics taught on Main Campus
 CHM—Chemistry taught on Main Campus
 MAC,MAP—Mathematics taught on Main Campus

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. Laboratory 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) 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. 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.

EML 3100 Thermodynamics (2) Prerequisites: MAC 2312; PHY 2049. 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.

CHEMICAL AND BIOMEDICAL ENGINEERING

Department of Chemical and Biomedical Engineering Faculty

Rufina Alamo, Professor; Ph.D., Madrid, 1981. Polymer Crystallization and Characterization, Structure – Property Relations, Morphology of Semi-Crystalline Polymers.

Ravindran Chella, Associate Professor; Ph.D., Massachusetts, 1984. Polymer Blends and Composites, Phase Separations in Polymers, Patterns of Multiphase Flow.

Chi-Kai Kevin Chen, Assistant Professor, Ph. D., Virginia, 2001. Neuroengineering, Physiology of Drug Delivery Systems.

John R. Collier, Professor; Ph.D., Case Institute, 1966. Polymer Rheology, Textiles and Fibers; Fluid Flow; Whisky Making.

Wright C. Finney, Research Associate; M.S., Florida State, 1978. Environmental Science and Engineering, Aerosol Dynamics and Characterization, Biomedical Engineering.

Samuel Grant, Assistant Professor, Ph.D., Illinois-Chicago, 2000. Transport Properties in Biomedical Applications using Nuclear Magnetic Resonance and Magnetic Resonance Imaging (NMR/MRI).

Egwu E. Kalu, Associate Professor; Ph.D., Texas A&M, 1991. Electrochemical Engineering, Electrophysiological Processes.

Milen Kostov, Assistant Professor, Ph.D., Penn State, 2003. Computational Molecular Dynamics; Modeling of Chemical Reactions in Nano-porous Materials.

Bruce R. Locke, Professor; Ph.D., North Carolina State, 1989. Transport/Reaction in Tissues and Complex Media, Transport Processes using NMR/MRI, Reaction Kinetics in Non-Thermal Plasmas.

Teng Ma, Assistant Professor; Ph.D., Ohio State, 1999. Cell and Tissue Engineering, Biomaterials.

Anant Paravastu, Professor; Ph.D., U. California - Berkeley, 2004. Molecular Structure Characterization of Filamentous Proteins, Nuclear Magnetic Resonance and Atomic Force/Electron Microscopy Techniques.

Subramanian Ramakrishnan, Assistant Professor; Ph.D., Illinois, Urbana-Champaign, 2001. Colloidal Science and Engineering; Nano-

structured Materials.

Loren B. Schreiber, Adjunct Professor; Ph.D., California Institute of Technology, 1975. Engineering Education, Batch Reaction and Batch Distillation, Physical Properties of Fine Organic Chemicals.

Sachin Shanbhag, Assistant Professor; Ph.D., Michigan, 2004. Computer Modeling of Polymer Rheology; Modeling of Biological Cell Morphology and Interactions.

John C. Telotte, Associate Professor; Ph.D., Florida, 1985. Chemical Thermodynamics, Radon Transport, Semiconductor Processing.

Affiliate Faculty

P. Bryant Chase, Professor of Biological Science; Ph.D., University of Southern California, 1984. Biomechanics of cardiac and skeletal muscle; Bio-nanotechnology.

Ching-Jen Chen, Affiliate Professor and Dean of the College of Engineering, Ph.D., Case Western Reserve, 1967. Heat Transfer, Fluid Mechanics, Numerical Simulation, Biomagnetics.

Mandip Sachdeva, Professor of Pharmacy, Ph.D., Dalhousie University, 1994. Drug Delivery Systems, Pharmaceuticals.

G. Dale Wesson, Associate Professor, College of Engineering Sciences and Agriculture, Fluid Mechanics; Separations Processes; Hydrocyclone Stability.

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 chemical and biomedical engineering education and life-long learning, and to maintain a national research leadership in several 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 Accreditation Board for Engineering and Technology (ABET), and other professional societies. The departmental undergraduate committee is responsible for planning, maintaining, and reviewing its curricular content in accordance with the perceived demands of its stakeholders. The Department Chair and the degree program coordinators implement the curricula as determined by the department curriculum committee, while consulting with the faculty as needed.

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 production. The chemical engineer is 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 Department has made a 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 undergraduate curriculum emphasizes the application of computer analysis in chemical engineering, as well as laboratory instruction in modern, state-of-the-art facilities in the transport phenomena/measurements and unit operations laboratories. In order to meet newly developed interests in chemical engineering and related fields, elective courses are available in bioengineering, polymer engineering, materials engineering, molecular engineering, electrochemical engineering, environmental engineering, and biomedical engineering, with additional courses under development.

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.

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 four departmental educational objectives for the Bachelor of Science Degree in Chemical Engineering:

1. To educate students in the design and analysis of chemical processes and systems;
2. To train students on issues of product quality, safety, and environmental impact;
3. To develop student professionalism in the field of chemical engineering through departmental and classroom activities and student involvement in local and national professional organizations; and
4. To provide educational diversity to meet the needs of emerging sub-fields within chemical engineering and related disciplines.

Program Outcomes. These objectives are further expanded and detailed through eleven student outcomes:

- a. An ability to apply a knowledge of mathematics, physics, chemistry, and chemical engineering (C3.a);
- b. An ability to design and conduct experiments, and analyze and interpret data of importance to the design and analysis of chemical processes (C3.b);
- c. An ability to design and analyze new and existing chemical systems and processes to meet desired needs (C3.c);
- d. An ability to function on multi-disciplinary teams (C3.d);
- e. An ability to identify, formulate, and solve engineering problems (C3.e);
- f. An understanding of professional and ethical responsibility (C3.f);
- g. An ability to communicate effectively (C3.g);
- h. The broad education necessary to understand the impact of engineering solutions in a global and societal context (C3.h);
- i. An ability to engage in life-long learning (C3.i)
- j. A knowledge of contemporary issues (C3.j); and
- k. An ability to use the techniques, skills, and modern engineering tools necessary for chemical engineering practice (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. Our 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 continuous reactor configurations, and a liquid/liquid continuous extraction process system, to name a few. 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 facil-

ities accessible by remote terminals, students have access to College of Engineering computer labs that have either timeshared remote terminals using UNIX or desktop personal computers connected to college-wide servers. Within the Department of Chemical and Biomedical Engineering, undergraduate students working on research projects utilize laboratory computer terminals connected to the college servers and PCs 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.

Majors (Areas of Study)

Although the Department offers one bachelor of science degree (chemical engineering), students may choose from among five diverse areas of study that reflect new directions in the broader field of chemical engineering. These major options include Chemical Engineering, Chemical-Environmental - Engineering, Bioengineering, 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-Environmental Engineering. Chemical engineers will play a pivotal role in developing future pollution prevention strategies by improving and replacing current products and processes. Upcoming efforts will focus on integrating the design and production of goods with their ultimate disposal and re-use. Chemical engineers will provide the means to not only prevent pollution, but move to the concept of creating a sustainable society where most products are recycled repeatedly.

Bioengineering. Biochemical engineering is a highly interdisciplinary field that has arisen from the application of chemical engineering principles to the production of materials derived from living systems. A number of processes and products, including fermentation for making alcohols and various foods, the efficient use of enzymes for tanning leather, the use of bacteria for biological waste treatment, and the production of antibiotics from mold culture, have been developed and utilized in the past. Bioengineering combines biochemical engineering with other aspects of life sciences applied to engineering, such as pharmacology and biotechnology.

Chemical-Materials Engineering. 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.

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 sub-disciplines 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 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 Course Prerequisites

The State of Florida has identified common course prerequisites for this University degree program. These prerequisites are lower-level

courses that are required for preparation for the University major prior to a student receiving a baccalaureate degree from Florida A&M University. They may be taken either at a community college or in a university lower-division program. It is preferred that these common course prerequisites be completed in the freshman and sophomore years.

The following lists the common course prerequisites or approved substitutions necessary for this degree program:

1. ENC X101;
2. ENC X102;
3. MAC X311*;
4. MAC X312*;
5. MAC X313*;
6. MAP X302;
7. CHM X045/X045L*;
8. PHY X048/X048L;
9. PHY X049/X049L;
10. Six (6) semester hours in humanities;
11. Six (6) semester hours in social science;
12. Three (3) additional semester hours in humanities or social science.

Note: 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 (45) 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.

Five majors exist within the Chemical Engineering bachelor's degree program. These include Chemical Engineering, Chemical-Environmental Engineering, Bioengineering, Chemical-Materials Engineering, and Biomedical Engineering. Most of the curriculum is common to all five majors, and includes topics in liberal studies, 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 requirements. Students in all five majors should successfully complete the following courses in addition to the general education, other University, and College of Engineering requirements:

Freshman Year

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 |
| <u>EGN 1004L</u> | <u>.1</u> |
| | 15 |

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 |
| <u>Humanities Elective</u> | <u>.3</u> |
| | 14 |

Summer Semester

| | |
|--------------------------------------------|-----------|
| Humanities Elective II | .3 |
| Humanities Elective III | .3 |
| <u>ECO 2023 Principles of Economics II</u> | <u>.3</u> |
| | 9 |

Sophomore Year

Fall Semester

| | |
|------------------------------------------------|-----------|
| ECH 3023 Mass and Energy Balances I | .3 |
| CHM 2210 Organic Chemistry I | .3 |
| CHM 2210L Organic Chemistry I Lab | .1 |
| MAC 2313 Calculus with Analytical Geometry III | .5 |
| <u>PHY 2048C General Physics I w/Lab</u> | <u>.5</u> |
| | 18 |

Spring Semester

| | |
|------------------------------------------------------|-----------|
| ECH 3024 Mass and Energy Balances II | .3 |
| ECH 3301 Introduction to Process Analysis and Design | .3 |
| PHY 2049C General Physics II w/Lab | .5 |
| <u>EGM 3512 Engineering Mechanics</u> | <u>.4</u> |
| | 15 |

Junior Year

Fall Semester

| | |
|----------------------------------------------|-----------|
| ECH 3101 Chemical Engineering Thermodynamics | .3 |
| ECH 3266 Introductory Transport Phenomena | .3 |
| ECH 3854 Chemical Engineering Computations | .4 |
| CHM 4410 Physical Chemistry I | .3 |
| <u>CHM 4410L Physical Chemistry I Lab</u> | <u>.1</u> |
| | 14 |

Spring Semester

| | |
|-------------------------------------------------------------|-----------|
| ECH 3274L Measurements/Transport Phenomena Lab | .3 |
| ECH 3418 Separations Processes | .3 |
| ECH 4267 Advanced Transport Phenomena | .3 |
| CHM 4411 Physical Chemistry II | .3 |
| CHM 4411L Physical Chemistry II Lab | .1 |
| EEL 3003 Introduction to Electrical Engineering | .3 |
| <u>EEL 3003L Introduction to Electrical Engineering Lab</u> | <u>.1</u> |
| | 17 |

Senior Year

Fall Semester

| | |
|----------------------------------------------------------|-----------|
| ECH 4404L Unit Operations Lab | .3 |
| ECH 4504 Kinetics and Reactor Design | .3 |
| ECH 4604 Chemical Engineering Process Design I | .4 |
| ECH 4XXX Chemical Engineering Elective I | .3 |
| <u>CHM/BCH XXXX Advanced Chemistry Elective with Lab</u> | <u>.4</u> |
| | 17 |

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 |
| <u>Humanities Elective IV</u> | <u>.3</u> |
| | 13 |

Total Semester Hours131

Major Requirements

In addition to the courses listed above that are required for all majors, the following courses are specifically required for each of the five 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 science specifically approved by the Chair of the Department of Chemical Engineering.

| | |
|------------------------------------------------------|---|
| CHM 2211/2211L Organic Chemistry II w/Lab | 4 |
| or | |
| CHM 3120C Introduction to Analytical Chemistry w/Lab | 4 |
| or | |
| CHM 4130C Instrumental Analysis w/Lab | 4 |
| or | |
| BCH 4033/4033L Biochemistry I with Lab | 4 |

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 Engineering.

Major in Chemical-Environmental Engineering

Advanced Chemistry Elective.

| | |
|--------------------------------------------------------------|---|
| CHM 3120C & 3120L Introduction to Analytical Chemistry w/Lab | 4 |
| or | |
| CHM 4130C & 4130L Instrumental Analysis w/Lab | 4 |

Chemical Engineering Electives.

| | |
|-----------------------------------------------|---|
| ECH 4781 Chemical Engineering - Environmental | 3 |
| and | |
| BSC 1010 Biological Science I | 3 |
| BSC 1010L Biological Science I Laboratory | 1 |
| or | |
| GLY 2010C Physical Geology | 4 |

Major in Bioengineering

Advanced Chemistry Elective.

| | |
|---------------------------------------|---|
| BCH 4033 & 4033L Biochemistry I w/Lab | 4 |
|---------------------------------------|---|

Chemical Engineering Electives.

| | |
|------------------------------------------------|---|
| ECH 4743 Chemical Engineering - Bioengineering | 3 |
| and | |
| BSC 1010 Biological Science I | 3 |
| BSC 1010L Biological Science I w/Lab | 1 |
| or | |
| MCB 3020 Microbiology | 3 |

Major in Chemical-Materials Engineering

Advanced Chemistry Elective.

| | |
|--------------------------------------------------------------|---|
| CHM 3120C & 3120L Introduction to Analytical Chemistry w/Lab | 4 |
| or | |
| CHM 4130C & 4130L Instrumental Analysis w/Lab | 4 |

Chemical Engineering Electives.

| | |
|-------------------------------------------------------------------------|---|
| One of | |
| ECH 4823 Intro. to Polymer Science and Engineering | 3 |
| or | |
| ECH 4824 Chemical Engineering - Materials | 3 |
| or | |
| ECH 4937 Special Topics in Chemical Engineering - Molecular Engineering | 3 |
| and one of | |
| PHY 3101 Modern Physics | 3 |

| | |
|-------------------------------------------------------------------------------|---|
| or | |
| PHY 4221 Mechanics I | 3 |
| or | |
| EML 3234 Materials Science and Engineering | 3 |
| or a second course from the choices above [ECH 4323, ECH 4824, ECH 4937] (3). | |

Major in Biomedical Engineering

Biological Science Prerequisite

| | |
|-------------------------------------------|---|
| BSC 1010 Biological Science I | 3 |
| BSC 1010L Biological Science I Laboratory | 1 |

Psychology Liberal Studies Course

| | |
|-----------------------------|---|
| PSY 2012 General Psychology | 3 |
|-----------------------------|---|

Advanced Chemistry Elective

| | |
|------------------------------------------------|---|
| BCH 4033 & 4033L General Biochemistry I w/ Lab | 4 |
|------------------------------------------------|---|

Note: (CHM 4411 & 4411L, Physical Chemistry II w/Lab, is not required for the biomedical engineering major).

Chemical & Biomedical Engineering Science and Design

| | |
|----------------------------------------------------------------------------------------|------|
| ECH 4937 (or BME 4403C/BME 4404C) - Quantitative Anatomy and Systems Physiology I & II | 3, 3 |
|----------------------------------------------------------------------------------------|------|

Biomedical Engineering Elective (take one)

| | |
|---------------------------------------------------|---|
| ECH 4741 Biomedical Engineering | 3 |
| ECH 4743 Chemical Engineering - Bioengineering | 3 |
| ECH 4904 Undergraduate Research Project | 6 |
| ECH 4906 Honors Work in Chemical Engineering | 6 |
| BME 4937 Special Topics in Biomedical Engineering | 3 |

Pre-Med Electives (recommended)

| | |
|------------------------------------------------|---|
| BCH 4034 & 4034L General Biochemistry II w/Lab | 3 |
| BSC 1011 & 1011L Biological Science II w/ Lab | 4 |
| CHM 2211 & 2211L Organic Chemistry II w/Lab | 4 |
| PCB 3063 General Genetics | 3 |
| PCB 3743 Vertebrate Physiology | 3 |

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 Program and Honor Societies" chapter of this General Catalog.

Course Descriptions

Definition of Prefixes

| |
|----------------------------|
| BME—Biomedical Engineering |
| ECH—Engineering: Chemical |
| EGN—Engineering: General |

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: BSC 2010, BSC 2210L, CHM 2210, ECH 3023, ECH 3024, and ECH 3301 with grades of "C-" or better, PHY 2049C. Co-requisites: CHM 4410, ECH 3101, ECH 3266, ECH 3854, EGM 3512. This is the first course of an introductory, two-semester sequence on anatomy and physiology from a biomedical engineering perspective. The course brings together fundamental concepts from biological science, biochemistry, engineering, and mathematics in order to describe the chemical and phys-

ical functionality of the human system. Content includes an examination of each of the macro subsystems, such as skeletal, integumentary, circulatory, muscular, nervous, and reproductive systems, from a systems engineering perspective. Each subsystem examination includes laboratory lessons and experiments designed to reinforce and illustrate key biomedical engineering concepts and problems. Some clinical correlations and pathologies also are introduced.

BME 4404C Quantitative Anatomy and Systems Physiology II (3). Prerequisites: BME 4403C, CHM 4410, ECH 3101, ECH 3266, ECH 3854, EGM 3512. Co-requisites: ECH 3274L, ECH 3418, ECH 4267. This is the second course of an introductory, two-semester sequence on anatomy and physiology from a biomedical engineering perspective. The course brings together fundamental concepts from biological science, biochemistry, engineering, and mathematics in order to describe the chemical and physical functionality of the human system. Content includes an examination of each of the macro subsystems, such as skeletal, integumentary, circulatory, muscular, nervous, and reproductive systems, from a systems engineering perspective. Each subsystem examination includes laboratory lessons and experiments designed to reinforce and illustrate key biomedical engineering concepts and problems. Some clinical correlations and pathologies also are introduced.

BME 4801 Biomedical Engineering Process Design I (3). Prerequisites: BME 4404C, ECH 3274L, ECH 3418, ECH 4267. Co-requisites: BCH 4053, ECH 4404L, ECH 4504, ECO 2023. This is the first course 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: BCH 4053, BME 4801, ECH 4404L, ECH 4504. Co-requisites: ECH 4323, ECH 4323L. This is the second course 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 in Biomedical Engineering (1–3). Prerequisite: BME 4403C, CHM 4410, ECH 3101, ECH 3266, ECH 3854; 3.0 GPA; permission of instructor. Co-requisites: ECH 3274L, 3418, ECH 4267. Completion in this course of a research project for six (6) semester hours with a grade of "C" or higher may be used to satisfy the program elective requirement. May be repeated to a maximum of six (6) semester hours.

BME 4906r Honors in Biomedical Engineering (1–3). Prerequisite: BME 4403C, CHM 4410, ECH 3101, ECH 3266, ECH 3854; 3.2 GPA; permission of instructor; admission to honors program. Co-requisites: ECH 3274L, 3418, ECH 4267. Completion in this course of an honors research project for six (6) semester hours with a grade of "C" or higher may be used to satisfy the program elective requirement. May be repeated to a maximum of six (6) semester hours.

BME 4937r Special Topics in Biomedical Engineering (1–3). Prerequisite: BME 4404C, ECH 3274L, ECH 3418, ECH 4267. Co-requisites: ECH 4404L, ECH 4504, ECH 4604. Topics in this course emphasize 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 involves lectures and a final project on a topic in biomedical engineering. May be repeated to a maximum of twelve (12) semester hours.

ECH 2050 Chemical Engineering Communications (2). Techniques for effective oral communication in settings most frequently encountered by the practicing engineer. Speaking skills will be applied in informal presentations, formal presentations, and interviews.

ECH 3023 Mass and Energy Balances I (3). Prerequisites: CHM 1046 and MAC 2312. Co-requisites: CHM 2210, MAC 2313, and PHY 2048C. This course examines the effect of mass and energy balances on chemical-process systems, process measurements and development of problem-solving methodologies in mass-energy balances, and single or complex multiphase systems. The course introduces general chemical-engineering concepts, lays the foundation for mass and energy balances of chemical processes, and applies fundamental knowledge about stoichiometry and chemical equilibrium to simple combustion or product separation reactions.

ECH 3024 Mass and Energy Balances II (3). Prerequisites: CHM 2210, ECH 3023, MAC 2313, PHY 2048C. Co-requisites: ECH 3301, PHY

2049C. This course is the second in a two-part series introducing the general concepts of chemical engineering and laying the foundation to establish both the mass and the energy balances of a chemical process. Analysis of energy and mass balances in equilibrium chemical reaction processes is introduced. Transient mass and energy balances are applied to chemical systems. Case studies are analyzed using computational methods. The basic principles of error analysis and data fitting to models are applied to selected examples in chemical engineering.

ECH 3101 Chemical Engineering Thermodynamics (3). Prerequisites: ECH 3023, ECH 3024, and ECH 3301 with grades of "C-" or better, PHY 2049C. Co-requisites: CHM 4410, ECH 3266, ECH 3854, EGM 3512. Energy balances and entropy analysis for systems of chemical engineering interest. Computer calculations involving real fluids, mixtures, phase equilibrium, and chemical equilibrium.

ECH 3266 Introductory Transport Phenomena (3). Prerequisites: ECH 3023, ECH 3024, and ECH 3301 with grades of "C-" or better, PHY 2049C. Co-requisites: CHM 4410, ECH 3101, ECH 3854, EGM 3512. This course examines integral balance equations for conservation of momentum, energy, and mass. Topics include the following: application to chemical processes involving fluid flow and heat and mass transfer; estimation of friction factors, and heat and mass transfer coefficients; pump selection and sizing and piping network analysis; and design of heat exchangers.

ECH 3274L Measurements and Transport Phenomena Laboratory (3). Prerequisites: CHM 4410, ECH 3101, ECH 3266, ECH 3854. Co-requisites: CHM 4411, ECH 3418, ECH 4267. Course reinforces principles of physical property measurement and transport phenomena through a series of laboratory experiments. The main emphasis of the course is placed on the written and oral communication of the lab results. There will be lecture material pertaining to the analysis of data, numerical and error analysis, and design of experiments.

ECH 3301 Introduction to Process Analysis and Design for Chemical Engineers (3). Prerequisite: MAC 2312. Co-requisites: ECH 3023, MAC 2313. This course will examine the development of process models for equilibrium and dynamic systems, including stagewise processes, that arise in chemical engineering applications, and their analysis using exact and appropriate techniques.

ECH 3418 Separations Processes (3). Prerequisites: CHM 4410, ECH 3101, ECH 3266, ECH 3854. Co-requisites: CHM 4411, ECH 3274L, 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 3023, ECH 3024, and ECH 3301 with grades of "C-" or better, PHY 2049C. Co-requisites: CHM 4410, ECH 3101, ECH 3266, EGM 3512. The first part of this course is an introduction to computational tools available for the solution of chemical-engineering problems, with emphasis on the use of spreadsheets, high-level programming languages (such as MATLAB), and chemical process simulators. The second part of this course is an introduction to practical numerical techniques for using computers to solve chemical-engineering problems, with emphasis on solutions of equations in one variable, interpolation and polynomial approximation, numerical differentiation and integration, initial-value problems for ordinary differential equations, direct methods of solving linear systems, iterating techniques in matrix algebra, and numerical solutions in nonlinear systems of equations.

ECH 4267 Advanced Transport Phenomena (3). Prerequisites: CHM 4410, ECH 3101, ECH 3266, ECH 3854. Co-requisites: CHM 4411, ECH 3274L, ECH 3418. This course examines the following topics: molecular mechanisms for momentum, heat, and mass transport; differential balance equations for conservation of momentum, energy, and mass; application of steady and unsteady-state chemical processes involving diffusive and convective mass transfer in solids, liquids, and gases; interphase transfer mechanisms; and boundary layer theory and turbulent transport.

ECH 4323 Process Control (3). Prerequisites: ECH 4504 and ECH 4604. Co-requisite: ECH 4615. 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 Laboratory (1). Prerequisites: ECH 4504 and ECH 4604. Co-requisite: ECH 4615. Experiments designed to illustrate and apply control theory, measurement techniques, calibration, tuning of controls, characterization of sensors, and control circuits.

ECH 4404L Unit Operations Laboratory (3). Prerequisites: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4504, ECH 4604.

Familiarizes students with the principles taught in ECH 4267. Preparing experimental plans and doing the required experimental work with unit operations equipment to meet specific objectives. Emphasis is on computer data analysis and on oral/written communication skills.

ECH 4504 Kinetics and Reactor Design (3). Prerequisites: ECH 3274L, ECH 3418, ECH 4267. 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, ECH 4267. Corequisite: ECH 4404L, ECH 4504, ECO 2023. Engineering economics review and cost-estimation techniques. Design of chemical process equipment. Computer-aided design calculations.

ECH 4615 Chemical Engineering Process Design II (3). Prerequisites: ECH 4504, ECH 4604. Co-requisite: ECH 4323, ECH 4323L. Design of chemical process facilities and computer-aided design. An individual design project is completed by each student.

ECH 4741 Biomedical Engineering (3). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4404L, ECH 4504, ECH 4604. An introduction to the field of biomedical engineering with particular emphasis on the general engineering role. Emphasis is placed on hemodynamics, human physiology, pharmacodynamics, artificial organs, biomaterials, biomechanics, and clinical engineering.

ECH 4743 Chemical Engineering-Bioengineering (3). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4404L, ECH 4504, ECH 4604. Introduction to the major principles of the life sciences (microbiology, biochemistry, biophysics, genetics) that are important for biotechnological applications. Extension 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). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4404L, ECH 4504, ECH 4604. 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 4823 Introduction to Polymer Science and Engineering (3). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4404L, ECH 4504, ECH 4604. Introduction to the physical chemistry, reaction kinetics, reaction engineering, and processing of polymeric systems.

ECH 4824 Chemical Engineering-Materials (3). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4404L, ECH 4504, ECH 4604. 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 4904r Undergraduate Research Project (1-3). Prerequisites: ECH 3101, ECH 3266, ECH 3854, CHM 4410; 3.0 GPA; permission of instructor. Co-requisite: ECH 3418, ECH 4267, CHM 4411. This course consists of independent research on a topic relevant to chemical engineering. May be repeated to a maximum of nine (9) semester hours.

ECH 4905r Directed Individual Study (1-3). Prerequisite: Permission of Department Chair. May be repeated to a maximum of twelve (12) semester hours.

ECH 4906r Honors Work in Chemical Engineering (1-6). Prerequisites: ECH 3101, ECH 3266, ECH 3854, CHM 4410; 3.2 GPA; permission of instructor; admission to honors program. Co-requisite: ECH 3418, ECH 4267, CHM 4411. May be repeated to a maximum of nine (9) semester hours.

ECH 4937r Special Topics in Chemical Engineering (1-3). Prerequisite: ECH 3274L, ECH 3418, ECH 4267. Co-requisite: ECH 4504. Topics in chemical engineering with emphasis on recent developments. May be repeated to a maximum of twelve (12) semester hours.

EGN 3032 Engineering Ethics (3). Prerequisite: Junior standing in engineering. This course introduces the key theories, concepts, principles, and methodology relevant to the development of professional engineering ethics. The student will be guided in his/her development of a code of professional ethics through written work, class discussion, and case analysis.

Graduate Courses

| | |
|------------|----------------------------------------------------------------------|
| BME 5005 | Engineering and Applied Science Aspects of Biology and Medicine (3). |
| BME 5020 | Biophysical Chemistry and Biothermodynamics (3). |
| BME 5030 | Biochemical Transport Phenomena (3). |
| BME 5086 | Biomedical Engineering Ethics (3). |
| BME 5105 | Biomaterials (3). |
| BME 5385 | Animal Surgical Techniques (3). |
| BME 5500 | Biomedical Instrumentation (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 5971r | Thesis (1-9). (S/U grade only.) |
| BME 6210 | Biomechanics of Human Structure and Motion (3). |
| BME 6330 | Tissue Engineering (3). |
| BME 6530 | NMR and MRI Methods in Biology and Medicine (3). |
| BME 6550 | Computer Aided Design and Control in Medicine and Surgery (3). |
| BME 6720 | Biostatistical Mechanics (3). |
| BME 6938r | Special Topics in Biomedical Engineering (3). |
| BME 6980r | Dissertation (1-9). |
| BME 8965r | Doctoral Qualifying Exam (0). |
| BME 8976 | Thesis Defense (0). (S/U grade only.) |
| BME 8985 | Dissertation Defense (0). (S/U grade only.) |
| ECH 5052 | Research Methods in Chemical Engineering (3). |
| ECH 5126 | Advanced Chemical Engineering Thermodynamics I (3). |
| ECH 5128 | Advanced Chemical Engineering Thermodynamics II (3). |
| ECH 5261 | Advanced Transport Phenomena I (3). |
| ECH 5262 | Advanced Transport Phenomena II (3). |
| ECH 5263r | Special Topics in Transport Phenomena (3). |
| ECH 5325 | Advanced Process Control (3). |
| ECH 5526 | Advanced Reactor Design (3). |
| ECH 5626 | Chemical Process Optimization (3). |
| ECH 5740 | Fundamentals of Biomolecular Engineering (3). |
| ECH 5784 | Chemical Engineering Environmental (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 5934. | Special Topics in Chemical Engineering (3). |
| ECH 5935r | Chemical Engineering Seminar (0). (S/U grade only.) |
| ECH 5971r. | Thesis (1-12). (S/U grade only.) |
| ECH 6127. | Phase Equilibria (3). |
| ECH 6272. | Molecular Transport Phenomena (3). |
| ECH 6283. | Microrheology (3). |
| ECH 6506. | Chemical Engineering Kinetics (3). |
| ECH 6536. | Surface Science and Catalysis (3). |
| ECH 6848. | Operator- Theoretic Methods in Engineering Sciences (3). |
| ECH 6980r. | Dissertation (1-24). (S/U grade only.) |
| ECH 8965r. | Doctoral Preliminary Exam (0). (S/U grade only.) |
| ECH 8976. | Thesis Defense (0). (S/U grade only.) |
| ECH 8985. | Dissertation Defense (0). (S/U grade only.) |

For listings relating to graduate course work for thesis, dissertation, and master's and doctoral examinations and defense, consult the Graduate section of the General Catalog.

CIVIL AND ENVIRONMENTAL ENGINEERING

Faculty

Chair: Tawfiq, Kamal S.

Professors: Nnaji, Soronadi; 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

Associate in Civil Engineering: Adalier

Assistant in Civil Engineering: Liu, Pamuk

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, tri-axial, 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 Crashworthiness and Impact Analysis Laboratory, which is a well equipped state-of-the-art, high-performance computing environment for the pursuit of transportation-related research. The equipment includes a Silicon Graphics Origin 2000 technical server with sixteen parallel processors and 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 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. Desktop computers are supported by a cluster of Sun, DEC, and SGI servers. Other

nearby resources include the School of Computational Science and Information Technology (CSIT). Additional information about the department can be obtained from the college home page: <http://www.eng.fsu.edu>.

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 engineering 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 doctoral (PhD) degrees in civil engineering. These programs provide areas of concentration in structural, geotechnical, environmental/water resources, and construction/transportation engineering. The department also offers a certificate in water and environmental resources engineering in partnership with the Center for Professional Development. Students may enroll as special students if they intend to use the certificate credits later. Students who do not wish to receive academic credit may sign up for continuing education units (CEU's). Twelve (12) semester hours are required to complete the program. Information and registration may be found at <http://www.eng.fsu.edu/certificateprogram/>. In order to be admitted to the MS program, a student must have a bachelor's degree in civil engineering, a 3.0 grade point average (GPA) in the last two years of undergraduate school, and a Graduate Record Examination (GRE) score of at least 1000. Exceptions may be granted where other evidence indicates an ability to perform satisfactory graduate work. A student without a bachelor's degree in civil engineering may be required to complete undergraduate engineering articulation courses prior to attempting more advanced work. Admission to the doctoral program requires possession of a master's degree in civil or environmental engineering or a closely allied academic discipline from an accredited college or university, good standing in the academic institution last attended, evidence of a 3.0 GPA on a 4.0 scale as an upper level undergraduate or graduate student, and a minimum score of 1100 on the GRE. Exceptional applicants with a BS degree may be admitted to the PhD program, provided they complete an MS degree in the department before obtaining the PhD degree. For more details, refer to the Graduate Bulletin.

Program Educational Objectives

Upon completion of their course of study, graduates of the program in civil engineering are expected to be able to accomplish the following:

1. Progress in successful professional careers in civil, environmental or related engineering fields, or intent to continue their studies at the graduate level;
2. Engage in design or management issues, both professional activities needed by society, which are based on sound academic knowledge, gained management, oral and written communication and leadership skills, and on engineering practices;
3. Become recognized professional engineers with a demonstrated commitment to life-long learning and continuous self-improvement in order to respond to the rapid pace of change in the profession of civil and environmental engineering; and
4. Contribute to work force diversity as members and leaders of inter/multi-disciplinary teams.

Program Outcomes. These objectives are further expanded and detailed through twelve program outcomes. The program outcomes are intellectual abilities that each student must gain from the program before he/she graduates. The following program outcomes are closely linked to program educational objectives:

- a. An ability to apply knowledge of the following: mathematics, through differential equations and probability and statistics; science, including calculus-based physics and general chem-

- istry; and engineering, to subsequent problems;
- b. An ability to design and conduct field and laboratory experiments, as well as to critically analyze and interpret data in more than one of the recognized civil engineering areas;
 - c. An ability to design systems, components, or processes gained through design experiences integrated throughout the curriculum;
 - d. An ability to function on interdisciplinary and multidisciplinary teams;
 - e. An ability to identify, formulate, and solve civil and environmental Engineering problems;
 - f. An understanding of ethical and professional practice issues, including project design, execution, and delivery; and the importance of professional licensure and continuing education;
 - g. An ability to communicate effectively;
 - h. The broad education necessary to understand the impact of engineering solutions in a global/societal context;
 - i. A recognition of the need for and an ability to engage in life-long learning;
 - j. Knowledge of contemporary civil and/or environmental issues;
 - k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice; and.
 - l. Knowledge in a minimum of four recognized areas within the civil engineering program.

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. Faculty of the Department of Civil and Environmental Engineering have 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 and 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, CWR 3201 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.

Computer Skills Competency. All undergraduates at Florida State University must demonstrate basic computer skills competency prior to graduation. As necessary computer competency skills vary from discipline to discipline, each major determines the courses needed to satisfy this requirement. Undergraduate majors in Civil and Environmental Engineering satisfy this requirement by earning a grade of "C" or higher in EGN 2212.

State of Florida Common Course Prerequisites

The State of Florida has identified common course prerequisites for this University degree program. These prerequisites are lower-level courses that are required for preparation for the University major prior to a student receiving a baccalaureate degree from Florida State University. They may be taken either at a community college or in a university lower-division program. It is preferred that these common course prerequisites be completed in the freshman and sophomore years.

The following lists the common course prerequisites or approved substitutions necessary for this degree program:

1. ENC X101
2. ENC X102
3. MAC X311*
4. MAC X312*
5. MAC X313*
6. MAP X302
7. CHM X045/X045L*
8. PHY X048/X048L
9. PHY X049/X049L
10. Six (6) semester hours in humanities
11. Six (6) semester hours in social science
12. Three (3) additional semester hours in humanities or social science

Note: Courses marked with an asterisk (*) have at least one acceptable substitute. Contact the department for details.

Requirements for the Bachelor of Science in Civil Engineering: Civil Engineering Major

In addition to college requirements, a candidate for the B.S. degree in civil engineering will be expected to successfully complete the following requirements:

Mathematics and Basic Engineering Sciences

- CCE 3101 Construction Materials (3)
- CCE 3101L Construction Materials Laboratory (1)
- CEG 2202C Site Investigation (4)
- CGN2327L Civil Engineering Graphic Lab (1)
- EGM3512 Engineering Mechanics (4)
- EGN 1004L First Year Engineering Lab (1)
- EGN 2123 Computer Graphics for Engineers (2)
- EGN 2212 Engineering Statistics and Computation (3)
- EGN 3331 Strength of Materials (3)
- EGN 3331L Strength of Materials Lab (1)
- EGN 3613 Principles of Engineering Economy (2)
- EEL 3003 Introduction to Electrical Engineering (3)
- OR
- EML 3100 Thermodynamics (2)
- Civil Engineering Science and Design Core Courses (Breadth)
- CEG 3011 Soil Mechanics (3)
- CEG 3011L Soil Mechanics Lab (1)
- CES 3100 Structural Analysis (4)
- CWR3201 Hydraulics (3)
- CWR3201L Hydraulics Lab (1)
- EES 3040 Introduction to Environmental Engineering Science (3)
- EES 3040L Introduction to Environmental Engineering Science Lab (1)
- TTE 3004 Transportation Engineering (3)

Civil Engineering Science and Design Courses (Depth)

Students must take the following courses in five (5) areas plus two additional Technical Electives* for a total of twenty-four (24) hours credit. To meet the requirement, students may select elective courses (as indicated below) to specialize their degree program to suit their individual objectives.

1. Structures
 - CES 4605 Steel Design (3)
 - CES 4702 Concrete Design (3)
2. Geotechnical
 - CEG 4801 Geotechnical Design (3)
3. Construction
 - CCE 4004 Construction Engineering (3)
4. Transportation

- TTE 4XXX Transportation elective (3)
- 5. Environmental/Water Resources
- ENV 4001 Environmental Engineering (3)
- OR
- CWR4202 Hydraulic Engineering I (3)
- Additional Technical Electives*
- Elective 4XXX (3)
- Elective 4XXX (3)

Note: *Technical Proficiency Electives are defined as 4000 level civil and environmental engineering courses. Other courses might be suitable to meet this requirement. Please see your adviser for details.

Major Design Experience

- CGN 4800 Pre-senior Design and Professional Issues (2)
- CGN 4802 Senior Design Project (3)

Students are encouraged to meet with their advisor at least once each semester. Five core courses are required for 18 credits along with four out of five proficiency course areas with electives resulting in 24 out of 30 possible credits. CGN 4800 Pre-Senior Design (1) and CGN 4802, Senior Design (3) are required courses for all students.

Below is a suggested curriculum subject to change. See a department advisor for current requirements.

Freshman Year

| Fall Semester | Sem. Hours |
|--------------------------------------|------------|
| ENG 1004L First-year Engineering Lab | 1 |
| MAC 2311 Calculus I | 4 |
| CHM 1045C General Chemistry I | 3 |
| CHM 1045L General Chemistry I Lab | 1 |
| ENC 1101 Communication Skills I | 3 |
| CEG 2202 Site Investigation | 3 |
| | 15 |

| | |
|----------------------------------|----|
| Spring Semester | |
| MAC 2312 Calculus II | 4 |
| ENC 1102 Communication Skills II | 3 |
| PHY 3048C Physics I with Lab | 5 |
| Humanities Elective | 3 |
| | 15 |

Sophomore Year

| | |
|-------------------------------------------------|----|
| Fall Semester | |
| MAC 3313 Calculus III | 5 |
| PHY 3049C Physics II with Lab | 5 |
| EGN 2123 Engineering Graphics | 2 |
| EGN 2212 Engineering Statistics and Computation | 3 |
| | 15 |

| | |
|----------------------------------------------|----|
| Spring Semester | |
| EML 3100 Thermodynamics. | 2 |
| or EEL 3003 Intro. to Electrical Engineering | 3 |
| EGM 3512 Engineering Mechanics | 4 |
| EGN 2123L Civil Engineering Graphics Lab | 1 |
| MAP 3305 Engineering Mathematics I | 3 |
| EGN 3613 Engineering Economy | 2 |
| History/Social Science Elective | 3 |
| | 15 |

| | |
|---------------------------------|---|
| Summer Semester | |
| History/Social Science elective | 3 |
| History/Social Science elective | 3 |
| Humanities Elective | 3 |
| | 9 |

Junior Year

| | |
|---------------------------------------------------------------|----|
| Fall Semester | |
| CWR 3201 Hydraulics with Lab. | 4 |
| EES 3040 Intro. to Environmental Engineering Science with Lab | 4 |
| EGN 3331 Strength of Materials with Lab | 4 |
| Humanities/Social Science Elective | 3 |
| | 15 |

| | |
|------------------------------------------|----|
| Spring Semester | |
| CCE 3101 Construction Materials with Lab | 4 |
| CEG 3011 Soil Mechanics with Lab | 4 |
| CES 3100 Structural Analysis I | 3 |
| TTE 3004 Transportation Engineering | 3 |
| | 14 |

Senior Year

| | |
|----------------------------------------------------|----|
| Fall Semester | |
| Design Proficiency Electives | 9 |
| CGN 4800 Pre-Senior Design and Professional Issues | 1 |
| CES 4605 Steel Design or CES 4702 Concrete Design | 3 |
| | 13 |

| | |
|--------------------------------|----|
| Spring Semester | |
| Design Proficiency Electives | 12 |
| CGN 4802 Senior Design Project | 3 |
| | 15 |

Total Semester Hours128

Requirements for the Bachelor of Science in Civil Engineering: Environmental Engineering Major

In addition to college requirements, a candidate for the B.S. 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

- CEG 2202C Site Investigation (4)
- CGN 2327L Civil Engineering Graphic Lab (1)
- EES 3040 Introduction to Environmental Engineering Science (3)
- EES 3040L Introduction to Environmental Engineering Science Lab (1)
- EGM 3512 Engineering Mechanics (4)
- ENG 1004L First Year Engineering Lab (1)
- EGN 2123 Computer Graphics for Engineers (2)
- EGN 2212 Engineering Statistics and Computation (3)
- EGN 3331 Strength of Materials (3)
- EGN 3613 Principles of Engineering Economy (2)
- EEL 3003 Introduction to Electrical Engineering (3)
- OR
- EML 3100 Thermodynamics (2)

Environmental Engineering Science and Design Core Courses (Breadth)

- CCE 3101 Construction Materials (3)
- CEG 3011 Soil Mechanics (3)
- CEG 3011L Soil Mechanics Laboratory (1)
- CWR 3201 Hydraulics (3)
- CWR 3201L Hydraulics Laboratory (1)
- ENV 4001 Environmental Engineering (3)
- ENV 4031 Applied Environmental Engineering Microbiology (3)
- OR
- ENV 4xxx Applied Environmental Engineering Chemistry(3)
- TTE 3004 Transportation Engineering (3)

Environmental Engineering Science and Design Courses (Depth)

Students are required to take the following courses in four areas plus two additional Technical Electives* for a total of twenty-four (24) credit hours. To meet the requirement, students may select elective courses (as indicated below) to specialize their degree program to suit their individual objectives.

| | |
|----------------------------------------------------------------|--|
| 1. <u>Environmental</u> | |
| ENV 4611 Environmental Impact Analysis (3) | |
| OR | |
| ENV 4341 Solid and Hazardous Waste Engineering (3) | |
| ENV 4XXX Environmental Engineering elective (3) | |
| 2. <u>Water Resources</u> | |
| CWR 4101 Engineering Hydrology (3) | |
| OR | |
| CWR 4202 Hydraulic Engineering (3) | |
| CWR 4XXX Water Resources, Hydraulics or Hydrology elective (3) | |
| 3. <u>Geotechnical</u> | |
| CEG 4801 Geotechnical Design (3) | |
| 4. <u>Construction /Transportation</u> | |
| TTE 4XXX Transportation elective (3) | |
| OR | |
| CCE 4XXX Construction elective (3) | |
| Additional Technical Proficiency Electives* | |
| Elective 4XXX (3) | |
| Elective 4XXX (3) | |

Note: *Technical Electives are defined as 4000 level civil and environmental engineering courses. Other courses might be suitable to meet this requirement. Please see your adviser for details.

Major Design Experience

| | |
|--------------------------------------------------------|--|
| CGN 4800 Pre-senior Design and Professional Issues (2) | |
| CGN 4802 Senior Design Project (3) | |

Students are encouraged to meet with their advisor at least once each semester. In addition to college requirements, a candidate for the B.S. degree with an environmental engineering major will be expected to successfully complete the following requirements:

Freshman Year

| | |
|------------------------------------|-------|
| Fall Semester | |
| EGN 1004L First Year Engineering | 1 |
| MAC 2311 Calculus I | 4 |
| CHM 1045C General Chemistry I | 3 |
| CHM 1045 C General Chemistry I Lab | 1 |
| ENC 1101 Communications Skills I | 3 |
| CEG 2202 Site Investigation | 3 |
| | <hr/> |
| | 15 |

Spring Semester

| | |
|----------------------------------|-------|
| MAC 2312 Calculus II | 4 |
| ENC 1102 Communication Skills II | 3 |
| PHY 3048C Physics I with Lab | 5 |
| Humanities elective | 3 |
| | <hr/> |
| | 15 |

Sophomore Year

| | |
|-------------------------------------------------|-------|
| Fall Semester | |
| EGN 2212 Engineering Statistics and Computation | 3 |
| MAC 3313 Calculus III | 5 |
| PHY 3049C Physics II with Lab | 5 |
| EGN 2123 Engineering Graphics | 2 |
| | <hr/> |
| | 15 |

Spring Semester

| | |
|------------------------------------------|-------|
| EGM 3512 Engineering Mechanics | 4 |
| MAP 3305 Engineering Mathematics I | 3 |
| EGN 2123L Civil Engineering Graphics Lab | 1 |
| History/Social Science Elective | 3 |
| | <hr/> |
| | 11 |

Summer Semester

| | |
|----------------------------------|---|
| History/ Social Science elective | 3 |
| History/ Social Science elective | 3 |

| | |
|---------------------|-------|
| Humanities elective | 3 |
| | <hr/> |
| | 9 |

Junior Year

Fall Semester

| | |
|-----------------------------------------------|-------|
| EES 3040 Intro. to Env. Eng. Science with Lab | 4 |
| CWR 3201 Hydraulics | 3 |
| EGN 3331 Strength of Materials | 3 |
| TTE 3004 Transportation Engineering | 3 |
| Humanities/Social Science elective | 3 |
| | <hr/> |
| | 16 |

Spring Semester

| | |
|----------------------------------------------|-------|
| EML 3100 Thermodynamics | 2 |
| or EEL 3003 Intro. to Electrical Engineering | 3 |
| CEG 3011 Soil Mechanics | 3 |
| CEG 3011L Soil Mechanics Lab | 1 |
| ENV 4001 Environmental Engineering | 3 |
| ENV 4611 Environmental Impact Analysis | 3 |
| EGN 3613 Engineering Economy | 2 |
| | <hr/> |
| | 14 |

Senior Year

Fall Semester

| | |
|--------------------------------------------------|-------|
| CGN 4800 Pre-Senior Design & Professional Issues | 2 |
| Design Proficiency electives | 12 |
| | <hr/> |
| | 1 |

Spring Semester

| | |
|--------------------------------|-------|
| CGN 4802 Senior Design Project | 3 |
| Design Proficiency electives | 12 |
| | <hr/> |
| | 15 |

Total Semester Hours128

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 math, science or engineering course that is required or a prerequisite in the curriculum after declaring civil or environmental engineering as a major.
2. Accrues a total of three grades below C in math, science, or engineering courses that are required or a prerequisite in the curriculum and attempted after declaring civil or environmental engineering as a major.
3. Has an overall GPA below 2.0.

Consequences: A student on probationary status will have their major changed administratively to Pre-Engineering.

Reinstatement: To be reinstated to the program, the student will have one semester to raise his/her GPA above 2.0 and achieve a grade of C or better on all applicable courses. Permission to enroll in other civil and environmental engineering courses during the probationary semester will only be granted after consultation with an academic advisor. No more than one reinstatement is permitted.

Dismissal: There are two causes for dismissal from the CEE program: 1) If a student is on probation and does not, during the probationary semester, raise his/her GPA above 2.0 and/or achieve a grade of C or better in the math, science, or engineering course(s) that was(were) cause for probation or in any other math, science, or engineering course taken during the probationary semester, the student will be permanently dismissed from and will not be reinstated to the CEE program 2) If a student who has been reinstated to the program 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, then the student will be permanently dismissed from and will not be reinstated to the CEE program.

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.

Oral Communication Competency

If the following three courses are taken in the listed sequence, the Oral Communication Competency requirement as defined in the "Undergraduate Degree Requirements" section of this Bulletin will be satisfied.

| | |
|----------|---------------------------------------------------|
| EES 3040 | Introduction to Environmental Engineering Science |
| CGN 4800 | Pre-Senior Design and Professional Issues |
| CGN 4802 | Senior Design Project |

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.

Requirements for a Minor in Environmental Engineering Science

A minor in environmental engineering science requires a minimum of twelve (12) semester hours of course work in environmental engineering, which includes EES 3040 and ENV 4001 plus six (6) additional hours in courses with prefixes EES or ENV at the 3000 level or above, with no more than one (1) of the following courses counting towards the minor: ENV 4341, ENV 4611. Students must consult with the department and obtain written approval before taking courses towards the minor. Students also must satisfy stated prerequisites before enrolling in any environmental engineering course. Grades of "C" or better must be earned in each course accepted for minor credit. If an environmental engineering science minor is combined with a civil engineering major, EES 3040 and one other course, up to six (6) credits total, may count toward both the major and the minor.

Undergraduate Course Descriptions

Definition of Prefixes

| | |
|-----|---------------------------------------------|
| CEE |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) Prereq: EGN 3331, Properties and characteristics of construction materials for civil and highway engineers; metals, aggregates, cements, concrete, asphalt and timber.

CCE 3101L Construction Materials Lab (1) Prereq/Coreq: CCE 3101, Prepare concrete and asphalt specimens, test construction materials under compression, tension, torsion loading. Write formal laboratory reports.

CCE 4004 Construction Engineering (3) Prereq: ENG 3613, CCE 3101, Theories, principles, and applications of engineering professionalism and ethics. Emphasis on pre-design planning, scheduling, contracts and specification, construction methods, equipment and safety.

CCE 4014 Construction Cost Estimating (3) Prereq: CCE 3101; EGN 3613. Corequisite: CCE 4004. 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) 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).

CEG 2202C Site Investigation (3). Prereq/Coreq: MAC 1114. Methods and procedures of surface mapping and subsurface sectioning including distance measurements, traverse computations and topographic mapping, photogrammetry, data collection, landform and terrain analysis, field instrumentation, and characterization of geologic materials. Use of field equipment and procedures to measure angles and distance, photo interpretation, and geological materials characterization.

CEG 3011 Soil Mechanics (3). Prereq: CEG 2202, ENG 3331. Study of physical properties of soils and their behavior under stress and strain under idealized conditions. Use of laboratory methods to determine soil properties. Written formal reports are required.

CEG 3011L Soil Mechanics Laboratory (1). Prereq: CEG 3011. Determine physical and mechanical properties of different types of soil using laboratory and field testing techniques. Write formal report on experiments.

CEG 4111 Foundation Engineering (3). Prereq: CEG 4801. Design of spread footings, pile and caisson foundations, retaining structures, and waterfront structures. Investigation of slope stability. Choice between alternative designs.

CEG 4701 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.

CEG 4801 Geotechnical Design (3). Prereq: CEG 2202C. Design of different geotechnical structures including shallow foundations, slopes and embankments, and earthwork with geosynthetics. Determine soil properties in the laboratory and write formal reports.

CES 3100 Structural Analysis (3). Prereq: EGM 3512; EGN 2212. Pre- or corequisite: EGN 3331. Loads on structures. Reactions, shear, and bending moment. Trusses. Influence lines. Deflection of determinate structures; introduction to indeterminate structures.

CES 4101 Advanced Structural Analysis (3). Prereq: CES 3100, EGN 3331. Review of matrix algebra. Direct stiffness method for truss analysis. Computer applications. Statically indeterminate structures. Slope-deflection and moment distribution methods. Computer modeling of structures. Application of modern computer commercial codes for structural analysis.

CES 4330 Optimal Structural Engineering (3). Prereq: CES 4605, 4702; EGN 2212; MAP 3305. Course covers standard theories of structural design plus classical optimization and latest structural optimization methods.

CES 4605 Steel Design (3). Prereq: CES 3100; EGN 3331. Design of tension, compression, and flexural steel member according to AISC specifications. Bolted and welded connections for steel members. Choice between design alternatives, introduction of plastic design methods.

CES 4702 Concrete Design (3). Prereq: CES 3100; EGN 3331. Design of reinforced concrete beams, columns, one-way slabs, etc., for bending, shear deflection, cracking and bond. As part of this class, students will learn computer and oral communication skills relevant to concrete design.

CES 4704 Advanced Concrete Design (3). Prereq: EGN 3331; CES 3100, 4702. Advanced topics pertaining to complex reinforced concrete elements and structures. Analysis and design of beams for torsion, biaxial and long columns, two-way slabs, shear walls, plates and shell design.

CES 4711 Prestressed Concrete (3). Prereq: CES 4702. Theoretical background of prestressed concrete. Losses in prestressing. Design of pre-

stressed concrete beams and slabs. Serviceability of prestressed concrete members. Precast members.

CES 4800 Timber Design (3). Prereq: CES 3100. Design of basic timber structures such as beams, columns, walls and diaphragms. SBC and the NDS code applications are used.

CES 4830 Masonry Design (3). Prereq: CES 3100. Design of basic reinforced masonry structures such as walls, columns, and foundations. SBC and code applications are used.

CGN 3949r Cooperative Work Experience (0). (S/U grade only.) Field work in an approved civil engineering agency program for integration of theory and professional practice.

CGN 4800. Pre-senior Design and Professional Issues (1). Prereq: senior standing. Topics in this course include engineering and professional ethics; professional practice issues; and design under engineering and societal constraints. Preparation of proposals for multidisciplinary design projects are completed the following semester in CGN 4802, Senior Design Project.

CGN 4802 Senior Design Project (3). A capstone senior level design course integrating the knowledge gained in undergraduate studies. Completion of a team-based design project covering several sub-disciplines in civil or environmental engineering. Industry participation.

CGN 4930r Special Topics (1 - 3). Topics in civil and environmental engineering with an emphasis on recent developments. Topics and credit may vary. May be repeated to a maximum of 12 semester hours.

CWR 3201 Hydraulics (3). Prereq: EGM 3512; EGN 2212; MAP 3305. Fundamental concepts of fluid properties, hydrostatics, kinematics, ideal flow viscous effects, transport phenomena; drag, laminar, and turbulent flow in pipes and channels; dimensional analysis, network design.

CWR 3201L Hydraulics Lab (1). Prereq: EGM 3512; EGN 2212; MAP 3305. Coreq: CWR 3201. Participation in hydraulics experiments and demonstrations and reporting experimental results in formal technical reports.

CWR 4101 Engineering Hydrology (3). Prereq: CWR 3201, 3201L; EGN 2212; or their equivalents. Study of the processes of the hydrologic cycle, hydrologic analyses for the planning and design of water management systems, use of application program packages.

CWR 4103 Water Resources Engineering (3). Prereq: CWR 4202; EGN 2212. Systems approach to complex water resources problems; application of systems analysis of water resources operations, design, and planning.

CWR 4120 Groundwater Hydrology (3). Prereq.: CWR 3201, EES 3040. Fundamentals of groundwater flow and contaminant transport. Topics include Darcy's Law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties, groundwater flow, circulation, unsaturated flow, recharge stream-aquifer interaction, well hydraulics, slug test analyses and contaminant transport processes.

CWR 4202 Hydraulic Engineering I (3). Prereq: CWR 3201, 3201L; EGN 2212; or their equivalents. Review principles of hydrology and hydraulics. Apply principles to design of water supply, urban drainage, flood control, and hydraulic energy conversion systems. Computer-aided design of hydraulics systems.

CWR 4203 Hydraulic Engineering II (3). Prereq: CWR 4202. Present methods for analyzing a broad range of unsteady flow conditions and for the design of facilities to cope with problems that may result. Apply computer programs, based on these methods, for practical water distribution and open channel systems.

CWR 4306 Urban Stormwater Runoff (3). Prereq.: CWR 3201, or consent of instructor. Coreq: ENV 4001. This course is intended to provide an understanding of (1) storm events, stormwater runoff and effects of urbanization on stormwater quantity and quality; (2) methods of analysis; and (3) planning and design procedures for stormwater facilities.

CWR 4822 Coastal and Estuarine Hydraulics (3). Prereq.: CWR 3201, MAC 2313. Coastal hydraulic principles and waves in estuaries and coastal ocean, 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 Science (3). Prereq: CHM 1045, 1045L. Application of environmental sciences to fundamentals of environmental engineering. Emphasis on water and air pollution, their sources and treatment; solid and hazardous waste management.

EES 3040L Introduction to Environmental Engineering Science Laboratory (1). Prereq: CHM 1045, 1045L. Coreq: EES 3040. Course covers use of field and laboratory instruments for measuring air and water quality indicators. Includes site visits.

EGN 2212 Engineering Statistics and Computations (3). Prereq: use of www and Internet resources; EGN 1004L; MAC 2311. Course covers problem formulation; algorithm development and programming; measurement and computational error assessment; application of statistical and numerical modeling tools for data analysis; and use of Mathcad software package.

EGM 3512. Engineering Mechanics (4) Prereq: MAC 2312; PHY 2048. Coreq: MAC 2313. Topics in this course include statistics 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.

EGN 3331 Strength of Materials (3). Prereq: EGN 3311; Coreq: CES 3100. Axial, torsional, and flexural stresses and strains, normal stress and shear stress. Mohr's circle; torsion bending, stress, transformation of stress; safety factors; engineering applications.

EGN 3331L Strength of Materials Lab (1). Prereq: EGM 3512; Coreq: EGN 3331. Main topics to be covered include: stress-strain relationship, tensile members, members under the torsion, flexural behavior, thin walled vessels and column buckling. (Lab not required for environmental majors.)

EGN 4906r Directed Individual Study (1-3). Directed special project/research in an area of civil engineering science or design not covered in the curriculum. This course may be repeated.

ENV 401 Environmental Engineering (3). Prereq: CHM 1045; CWR 3201; EES 3040, 3040L. Design of water and wastewater treatment plants, wastewater collection systems; air and water pollution control; solid waste management; contemporary environmental issues.

ENV 4022. Remediation Engineering (3). Prereq: ENV 4001 or equivalent. Coreq: CWR 4202 or equivalent. 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, hydraulic and pneumatic fracturing pump-and-treat systems.

ENV 4031 Applied Environmental Microbiology (3) Prerequisite: 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 4041 Environmental Systems Analysis (3). Prereq: EES 3040, 3040L; ENV 4001; MAC 2311. 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). Prereq: CWR 3201 or equivalent; EES 3040. Study of the processes of pollutant transformation and their 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 4341 Solid and Hazardous Waste Engineering (3). Prereq: EES 3040, 3040L; ENV 4001. Course covers definitions and characteristics of solid and hazardous wastes. History, growth and magnitude of the problem. Legislative, regulatory, and technical aspects of waste generation, storage, collection, transportation, processing, transformation and disposal. Design of waste minimization and recycling programs. Case studies of waste management.

ENV 4405 Water Reuse Engineering (3). Prereq: CHM 1045, 1045L; EES 3040. Sources of water for reuse, treatment processes and systems, monitoring and control instrumentation, health and social aspects of wastewater reclamation/water reuse, design of facilities/systems.

ENV 4500 Environmental Unit Processes and Operations. (3). Prereq: CWR 3201; ENV 4001. Corequisite: CWR 4202. The operational and design features of the physical, chemical, thermal, and biological treatments used in engineering for the management of solid and hazardous waste.

ENV 4561 Design of Water Quality Management Facilities (3). Prereq: CWR 3201; EES 3040, EES 3040L; EGN 2212. 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 wastewater treatment plants and systems for disposal of residuals from such facilities.

ENV 4611 Environmental Impact Analysis (3). Prereq: EES 3040, 3040L. Analysis of various measures of environmental quality. Impact of human activity on water, land, and air resources. Benefit-cost analysis in

environmental impact assessment.

TTE 3004 Transportation Engineering (3). Prereq: CEG 2202C; EGN 2212; junior standing. An introductory study of all modes of transportation in the United States with special emphasis on highway planning and design, construction, operation, management, and safety.

TTE 4201 Traffic Engineering (3). Prereq: TTE 3004. Nature, characteristics, and theories of traffic problems. Traffic survey procedures, origin-destination studies. Introduction to theory and design of automatic control of traffic systems.

TTE 4250 Traffic Operations (3). Prereq: EGN 2212; TTE 3004. Operation of transportation systems, monitoring, regulation, and control traffic.

TTE 4271 Intelligent Transportation Systems (ITS) (3). Prereq: EGN 3443; 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 4804 Highway Geometric Design (3). Prereq: CEG 2202C; TTE 3004. 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. The 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).

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

The bachelor of science in electrical engineering (BSEE) degree program prepares its graduates for a successful career in the rapidly evolving and intellectually challenging field of electrical engineering. The Department requires its graduates to develop a strong understanding of the relevant mathematics, computer programming and natural science concepts needed by practicing electrical engineers.

Graduates must demonstrate an ability to apply this knowledge in several fundamental areas of electrical engineering including analog circuit design, digital logic design, electromagnetics, signal and linear system analysis, communications, and microprocessor based design. They also must successfully demonstrate sufficient knowledge and the technical skills needed to complete a major design experience and to function as a member of a multi-disciplinary team.

With the addition of electrical engineering technical electives, graduates have an opportunity to prepare for advanced graduate-level training or a professional career in a variety of electrical engineering application areas including digital systems, communication systems, digital signal processing, control systems, microelectronics, power systems, or electromagnetics.

In addition, in the several years after graduation graduates are expected to accomplish the following:

1. Participate in either the research, development or application of engineering solutions that have a positive impact on society;
2. Make contributions to workforce diversity;
3. Show a commitment to life-long learning and continuous self-improvement; and
4. Become proficient in the oral and written communication of their work and ideas.

Bachelor of Science in Computer Engineering - Program Educational Objectives

The bachelor of science in computer engineering (BSCpE) degree program prepares its graduates for a successful career in the interdisciplinary field of computer engineering. The program is built firmly on the foundation of the department's well established bachelor of science in electrical engineering (BSEE) degree program. Consequently, graduates from the BSCpE degree program complete all of the required core coursework of BSEE majors, additional core computer engineering coursework, and a set of specialized courses offered through the Department of Computer and Information Sciences at the Florida A&M University. BSCpE graduates have an opportunity to prepare for advanced graduate-level training or a professional career in or built upon a variety of computer engineering application areas including digital systems, digital signal processing, computer networks and VLSI design.

Graduates from the BScPE degree program must develop a strong understanding of relevant mathematics, programming and physical science concepts needed by practicing computer engineers. They also must demonstrate an ability to apply this knowledge in several fundamental areas of electrical engineering (e.g. analog circuit design, electromagnetics, signal and linear system analysis, communications), computer engineering (e.g. digital logic design, microprocessor-based system design, and computer architecture), and computer science (e.g. object-oriented programming, data structures, computer algorithms and operating systems.) Graduates also must demonstrate successfully sufficient knowledge and the technical skills needed to complete a major design experience and to function as a member of a multi-disciplinary team.

In addition, in the several years after graduation graduates are expected to accomplish the following:

1. Participate in either the research, development or application of engineering solutions that have a positive impact on society;
2. Make contributions to workforce diversity;
3. Show a commitment to life-long learning and continuous self-improvement; and
4. Become proficient in the oral and written communication of their work and ideas.

Program Review

The department faculty has established a process to periodically review and revise its two 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 breadth 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.

Faculty

- Chairman:** DeBrunner, Victor E.
- Associate Chairman:** Harvey, Bruce A.
- Eminent Scholar:** Thagard, Norman E.
- Professors:** Arora, Rajendra K.; DeBrunner, Victor E; Foo, Simon Y.; Perry, Reginald J.; Roberts, Rodney G.; Thagard, Norman E.; Zheng, Jim P.
- Associate Professors:** Arora, Krishna; Baldwin, Thomas L.; DeBrunner, Linda S.; Harvey, Bruce A.; Kwan, Bing W.; Li, Hui; Meyer-Baese, Anke D.; Meyer-Baese, Uwe H.; Tung, Leonard J.
- Assistant Professors:** Andrei, Petru; Edrington, Chris S.; Weatherspoon, Mark H.; Yu, Ming;
- Associate in Electrical Engineering:** Brooks, Geoffrey W.
- Assistants in Electrical Engineering:** Rajagopalan, Ramesh; Skinner, Dave

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(3)
- EGM 3512 Engineering Mechanics(4)
- EML 3100 Thermodynamics(2)
- MAC 2311 Calculus with Analytical Geometry I(4)
- MAC 2312 Calculus with Analytical Geometry II(4)
- MAC 3313 Calculus with Analytical Geometry III(5)
- MAP 3305 Engineering Mathematics I(3)
- MAP 3306 Engineering Mathematics II(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)

Required Electrical Engineering Courses (34 Credits)

EEL 3111 Introduction to Circuit Analysis(3)
 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 3512 Introduction to 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 thirteen (13) 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 3530 Program, Data and File Structures(3)
 COP 3610 Operating Systems(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

| Fall Semester | Sem. Hours |
|----------------------------------------------------|------------|
| 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 |
| | <u>15</u> |

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 |
| | <u>15</u> |

Summer Semester

| | |
|---------------------------------------------------------------------------|----------|
| AMH 2091 Introduction to African American History (Soc. Sci. I) | 3 |
| Social Science Elective II | 3 |
| Humanities Elective III (Gordon Rule) | 3 |
| | <u>9</u> |

Second Year

| Fall Semester | Sem. Hours |
|-----------------------------------------------------|------------|
| 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 |
| | <u>16</u> |

Spring Semester

| | |
|-----------------------------------------------------|-----------|
| MAP 3305 Engineering Math I | 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 | 4 |
| | <u>15</u> |

Third Year

| Fall Semester | Sem. Hours |
|----------------------------------------|------------|
| MAP 3306 Engineering Math II | 3 |

| | |
|----------------------------------------------|----|
| EML 3100 Thermodynamics | 2 |
| EEL 3135 Signals and Linear Systems Analysis | 3 |
| EEL 4746 Microprocessors | 3 |
| EEL 4746L Microprocessors Laboratory | 1 |
| <hr/> | |
| | 12 |

Spring Semester

| | |
|-------------------------------------------------------|----|
| EEL 4021 Statistical Topics in Electrical Engineering | 3 |
| EEE 3300 Electronics I | 3 |
| EEE 3300L Electronics I Laboratory | 1 |
| EEL 3472 Electromagnetic Fields I | 3 |
| EEL 3512 Introduction to Communications | 3 |
| EEL Tier-2 Course I | 3 |
| <hr/> | |
| | 16 |

Fourth Year

Fall Semester

| | |
|--------------------------------------|----|
| EEL Tier-2 Course II and III | 6 |
| EEL 4911C Senior Design Project I | 3 |
| Humanities Elective IV (Gordon Rule) | 3 |
| EE Elective Laboratory | 1 |
| EEL Tier-2 Course IV | 3 |
| <hr/> | |
| | 16 |

Spring Semester

| | |
|-----------------------------------------------------------|----|
| EE Technical Electives I, II, III and IV | 12 |
| EEL 4915C Electrical Engineering Senior Design Project II | 3 |
| <hr/> | |
| | 15 |

Total Semester Hours128

Suggested Course Sequence for Computer Engineering Major (starting with Calculus I)

First Year

| | |
|------------------------------------------|------------|
| Fall Semester | Sem. Hours |
| 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 |
| <hr/> | |
| | 15 |

Spring Semester

| | |
|-------------------------------------------|----|
| ENC 1102 Freshman Communicative Skills II | 3 |
| COP 2221 Programming in C Language | 3 |
| MAC 2312 Calculus II | 4 |
| PHY 2048 General Physics I | 4 |
| PHY 2048L General Physics I Laboratory | 1 |
| <hr/> | |
| | 15 |

Summer Semester

| | |
|-----------------------------------------------------------------|---|
| AMH 2091 Introduction to African American-History (Soc. Sci. I) | 3 |
| Humanities Elective II (Gordon Rule) | 3 |
| <hr/> | |
| | 6 |

Second Year

Fall Semester

| | |
|--------------------------------|---|
| CPHY 2049 General Physics II | 4 |
| PHY 2049L General Physics II | 1 |
| COT 3100 Discrete Structures I | 3 |
| MAC 3313 Calculus III | 5 |

| | |
|-------------------------------------------|----|
| EEL 3111 Introduction to Circuit Analysis | 3 |
| <hr/> | |
| | 15 |

Spring Semester

| | |
|----------------------------------------------------|----|
| COP 3014 Fundamentals of Programming | 3 |
| COP 3014L Fundamentals of Programming Laboratory | 1 |
| MAP 3305 Engineering Math I | 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 |
| <hr/> | |
| | 15 |

Third Year

Fall Semester

| | |
|----------------------------------------------|----|
| COP 3530 Program, File and Data Structures | 3 |
| MAP 3306 Engineering Math II | 3 |
| EEL 3135 Signals and Linear Systems Analysis | 3 |
| EEL 3100 Thermodynamics | 2 |
| EEL 4746 Microprocessors | 3 |
| EEL 4746L Microprocessors Laboratory | 1 |
| <hr/> | |
| | 15 |

Spring Semester

| | |
|------------------------------------------|----|
| COP 3610 Operating Systems | 3 |
| EEE 3300 Electronics | 3 |
| EEE 3300L Electronics Laboratory | 1 |
| EEL 3472 Electromagnetic Fields I | 3 |
| EEL 4710 Introduction to FPLDs | 3 |
| Social Science Elective II (Non-History) | 3 |
| <hr/> | |
| | 16 |

Fourth Year

Fall Semester

| | |
|-------------------------------------------------------|----|
| EEL 4021 Statistical Topics in Electrical Engineering | 3 |
| EEL 3512 Introduction to Communications | 3 |
| EEL 4713 Computer Architecture | 3 |
| EEL 4911C Senior Design Project I | 3 |
| Humanities Elective III (Gordon Rule) | 3 |
| <hr/> | |
| | 15 |

Spring Semester

| | |
|---------------------------------------------------------|----|
| EEL 4914C Computer Engineering Senior Design Project II | 3 |
| EE Technical Elective | 3 |
| EE or Non-EE Technical Elective | 3 |
| EGM 3512 Engineering Mechanics | 4 |
| Humanities Elective IV (Gordon Rule) | 3 |
| <hr/> | |
| | 16 |

Total Semester Hours128

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; phasors; impedance's; sinusoidal steady-state analysis.

EEL 3112 Advanced Circuits with Computers (3) *Prerequisite:* EEL3111; *Corequisite:* MAP3305. 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; 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. 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; 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. 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. 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; *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. *Corequisite:* EEL 3512. 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, waveshaping and waveforming 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, beamforming, beampatterns, 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.

EEL 4450 Modeling and Simulation of Semiconductor Devices (3) Prereq.: EEL 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 3473; EEL 3512. 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). Prerequisite: EEL3512. 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). Prerequisites: EEL3112; EEL4562. Design and application of sensors and transducers commonly used in industrial control and laboratory automation. Concepts and application of statistical process control are introduced.

EEL 4710 Introduction to Field Programmable Logic Devices (3). Prerequisites: EEL 3705; EEL 3705L. Overview of PLD, CPLD and FPGA devices; introduction to hardware description languages (HDLs); combinatorial, sequential and FSM design using HDLs; introduction to top down design methodologies.

EEL 4713 Computer Architecture (3). Prerequisites: COP 2221; EEL 4746. Modern computer architectures are presented by studying how the relationships between hardware and software impact performance, machine language definition, processor data path and control designs, interfacing, and advanced topics, such as caching and pipelining.

EEL 4746 Microprocessor-Based System Design (3). Prerequisites: EEL3705; EEL3705L. Fundamental topics in basic computer design, structured assembly-language software design, RTL, CPU design, pipelining and superscaling, computer arithmetic, memory and I/O organization and interface, cache, and design tools.

EEL 4746L Microprocessor-Based System Design Laboratory (1). Prerequisites: EEL3705; EEL3705L; Corequisite: EEL4746. Laboratory software development, hardware projects, and experiments in support of EEL4746.

EEL 4748 Embedded Microcomputer Design Project (3). Prerequisites: EEL4746; EEL4746L. Individual projects selected with consent of instructor. Selected lectures and an "open-door" Motorola 68000 laboratory.

EEL 4810 Introduction to Neutral Networks (3). Prerequisites: EEL3135; EEL3300. Fundamentals of neutral networks: dynamical systems, associative memories, perceptions, supervised/unsupervised learning algorithms. Applications in signal processing, pattern recognition, control, optimization and communications.

EEL 4905r Directed Individual Study (1-3). Prerequisite: Junior-level standing and "B" average in electrical engineering courses. Normally may be repeated to a maximum of six (6) semester hours. Requires department approval.

EEL 4906r Honors Work in Electrical Engineering (1-6). Prerequisite: Acceptance in honors program. Independent or directed research in a specialized area beyond the current curriculum in electrical engineering. May be repeated to a maximum of six (6) semester hours.

EEL 4911C Senior Design Project I (3). Senior standing; completion of all required EE courses; permission of instructor. Introduction to design for electrical and computer engineers. System design concepts of specifications, analysis, synthesis, and manufacturability are introduced. Project management skills and team dynamics concepts are developed. Oral and written presentations are required.

EEL 4914C Computer Engineering Senior Design Project II (3) Prerequisite: EEL 4911. This course consists of a major multi-disciplinary design project in computer engineering which involves hardware, software, and/or theoretical design. Project should incorporate engineering standards and realistic constraints. Formal oral and written presentations of the project are required.

EEL 4915C Electrical Engineering Senior Design Project II (3). Prerequisite: EEL 4911. This course consists of a major multi-disciplinary design project in electrical engineering which involves hardware, software, and/or theoretical design. Project should incorporate engineering standards and realistic constraints. Formal oral and written presentations of the project are required.

EEL 4930r Special Topics in Electrical Engineering (1-3). Prerequisite: Instructor consent. Special topics in electrical engineering with emphasis on recent developments. Topics and credit vary; consult the instructor. May be repeated to a maximum of twelve (12) semester hours.

INDUSTRIAL ENGINEERING

The mission of the Department of Industrial 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

Chuck Zhang, Ph.D., Professor and Chairman, University of Iowa, Precision Machining and Metrology, Intelligent Processing of Composite Materials

Samuel A. Awoniyi, Ph.D., Professor, Cornell University, Applied Optimization.

David Jack, Ph.D., Assistant Professor, University of Missouri-Columbia, Composite Materials, Process Simulation, Anisotropic Material Characterization, Engineering Numerical Methods.

Richard Liang, Ph.D., Associate Professor, Beijing University of Aeronautics and Astronautics, Composite Materials, Polymer Materials, Property Characteristic Modeling.

Tao Liu, Ph.D., Assistant Professor, Georgia Institute of Technology, Carbon Nanotube-Based Functional Materials, Processing-Structure-Property Relationship of Polymer and Polymer Nanocomposites, Non-Destructive Optical Characterization Techniques.

Okenwa I. Okoli, Ph.D., Associate Professor, University of Warwick, Composites Manufacturing, Metallurgic Properties of Casting.

Yaw A. Owusu, Ph.D., Associate Professor, Pennsylvania State University, Manufacturing Processes and Materials, Rapid Prototyping.

Joseph J. Pignatiello, Jr., Ph.D., Associate Professor, Ohio State University, Quality Engineering, Applied Statistics.

Ben Wang, Ph.D., Professor, Pennsylvania State University, Integrated Product & Process Design, Predictive Maintenance.

Changchun Zeng, Ph.D., Assistant 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 curriculum is designed to comply with the current Accreditation Board for Engineering and Technology (ABET) criteria for accrediting engineering programs. The educational objectives that are 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.

Curriculum

For All Majors at Florida A&M University Who Start With Calculus (MAC 2311)

| | <i>Sem. Hrs.</i> |
|-----------------------------------------------------------------------------------------------------|------------------|
| Freshman Year | |
| 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 |
| | 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 |
| | 9 |
| Sophomore Year | |
| First Semester | |
| MAC 3313 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 |
| | 15 |
| Second Semester | |
| MAP 3305 Engineering Math I (Prereq. MAC 3313) | 3 |
| EML 3100 Thermodynamics (Prereq. CHM 1045, PHY 2048 MAC 2311) | 2 |
| EGN 3613 Principles of Engineering Economy (Prereq. MAC 2313) | 2 |
| 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 2221 Programming in C Language | 3 |
| | 14 |

Junior Year

First Semester

EIN 3391 Introduction to Engineering Management
(Prereq. EGN 3613, EGN 2123)3
 EIN 3390C Manufacturing Processes And Materials
Engineering w/ Lab (Prereq. CHM 1045, Coreq: EGN 2123)5
 EGN 3443 Statistical Topics in IE
(Prereq. MAC 2312)3
 ESI 3312 Operations Research I (Prereq. MAP 3305)3

14

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
 Advanced Math Elective (with approval of IE advisor)3
 EIN 4312 Tool and Process Engineering (Prereq. EIN 3390C)3
 EGM 3512 Engineering Mechanics (Prereq. PHY2048C,
MAC 2312; Co-req. MAC 2313)4

16

Senior Year

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 2221)3
 EIN 4891 Senior Design I3

15

Second Semester

ESI 4523 Simulation of IE Systems (Prereq. ESI 4234)3
 EIN 4891 IE Senior Project II (Final Semester)3
 Advanced IE Department Elective3
 Technical Elective3

12

Total Semester Hours125

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 Engineering (IE) requires that the IE major achieve a grade of "C" or better in all engineering core courses and in all required IE courses. This requirement may be waived by the academic dean upon recommendation of the department chair for no more than two (2) such courses.

ABET/EC2000 Requirements

The BSIE Curriculum complies with ABET EC2000 requirements. Students are advised to obtain the latest requirements from their advisor. These requirements may also be viewed at our website at www.ie.eng.fsu.edu.

Course Descriptions

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 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 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 4891 Industrial Engineering Senior Design Project (3) Prereq: Must be taken twice in final year (F/S). 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 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 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) Prerequisites: 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 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 3390C Manufacturing Processes and Materials Engineering (5) Prereq: CHM 1045. Coreq: EGN 2123. 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 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 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.

MECHANICAL ENGINEERING

FAMU-FSU College of Engineering

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, 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 The 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. We expect our graduates in the first five years upon graduation from our program to:

1. Excel in industrial, research, or graduate work in mechanical engineering or allied fields;
2. Design and analyze devices and products that meet the needs of society, based on sound scientific knowledge and engineering practices;
3. Become an engineering professional by engaging in professional activities and continuous self-development; and
4. Function effectively in increasingly multi-cultural and multidisciplinary environments across regional and national borders.

Program Outcomes

In fulfilling the undergraduate educational objectives, the desired outcomes are that our graduates demonstrate the following:

- An ability to apply knowledge of mathematics, calculus based science and engineering to mechanical engineering problems;
- An ability to design and conduct experiments, as well as to analyze and interpret data;
- An ability to design thermal and mechanical systems, components, or processes to meet desired needs;
- An ability to function on multi-disciplinary teams;
- An ability to identify, formulate, and solve engineering problems;
- An understanding of professional and ethical responsibility;
- An ability to communicate effectively with written, oral and visual means;
- The broad education necessary to understand the impact of engineering solutions in a global and societal context, and knowledge of contemporary issues;
- Recognition of the need for, and an ability to engage in lifelong learning;
- An ability to use modern engineering techniques, skills, and computing tools necessary for engineering practice; and
- Familiarity with statistics and linear algebra.

Five-year combined BS-MS Program

The department offers a five-year combined undergraduate-graduate program leading to the Bachelor of Science and Master of Science degrees. The objective of this program is to produce, in five years of full-time study, an engineer who is fully qualified to enter into professional practice in industry. Students begin taking core graduate courses in their fourth year. Successful 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 B.S. degree, should individual circumstances arise that preclude a student from taking the fifth year. This program also includes a summer internship in industry between the fourth and fifth years.

Admission to the dual degree program is open to juniors who have attained a GPA of 3.2 in the mechanical engineering curriculum and whose applications are reviewed by a faculty committee. Applicants are normally invited in the spring, during the second semester of the student's junior year, for fall entry. Details on the curriculum may be obtained from the mechanical engineering department office.

Faculty

Chair: Shih, Chiang

Associate Chair: Luongo, Cesar

Professors: Alvi, Farrukh; Chen, Ching-Jen; Collins, Emmanuel; Gielisse, Peter; Hellstrom, Eric; Kalu, Peter; Krothapalli, Anjaneyulu; Larbaletier, D.; Lourenco, Luiz; Luongo, Cesar; Schwartz, Justin; Shih, Chiang; Van Dommelen, Leon; Van Sciver, Steven.

Associate Professors: Cartes, David; El-Azab, Anter; Hollis, Patrick; Hruda, Simone Peterson; Moore, Carl

Assistant Professors: Clark, Jonathan; Englander, Ongi; Oates, W.; Ordonez, Juan Carlos.

Affiliated Faculty: Chandra, Namas; Garmestani, Hamid; Greska, B.; Gunsburger, M.; Han, K.e; Haik, Yousef; Han, Ke; Hussaini, M.Y.; Tam, Christopher.

Adjunct Faculty: Bickley, Bruce; Boeshaghi, Farhad; Moore, Melodee; Seely, J.

Professor Emeritus: Buzyna, George

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 ABET 2000 accreditation guidelines.

The following core courses comprise the mechanical engineering curriculum:

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------|
| First Semester | |
| MAC 2311 Calculus I | .4 |
| CHM 1045 General Chemistry I | .3 |
| CHM 1045L General Chemistry I Lab | .1 |
| ENC 1101 Freshman Communications Skills I | .3 |
| AMH 2091 African-American History or | |
| AFA 3104 African-American Experience | .3 |
| EGN 1004L First Year Engineering Lab | .1 |
| | 15 |
| Second Semester | |
| MAC 2312 Calculus II | .4 |
| PHY 2048 General Physics I | .4 |
| PHY 2048L General Physics I Lab | .1 |
| ENC 1102 Freshman Communications Skills II | .3 |
| Humanities Elective (select from approved list) | .3 |
| | 15 |
| Summer | |
| MAC 2313 Calculus III | .5 |
| Social Science Elective (Select from approved list) | .3 |
| Humanities Elective (Select from approved list) | .3 |
| | 11 |
| Sophomore Year | |
| First Semester | |
| PHY 2049 General Physics II | .4 |
| PHY 2049L General Physics II Lab | .1 |
| MAP 3305 Engineering Math I | .3 |
| EML 3002C Mechanical Engineering Tools | .4 |
| EML 3004C Introduction to Mechanical Engineering | .4 |
| | 16 |
| Second Semester | |
| Math Option (Choose from MAP3306, or STA3034. Alternates; MAD3401, *MAD3703, *MAP4341, or MAS3103) ...*courses offered FSU campus | .3 |
| EML 3011C Mechanics and Materials I | .4 |
| EML 3013C Dynamic Systems I | .4 |
| EML 3234 Materials Science and Engineering | .3 |
| | 14 |
| Junior Year | |
| First Semester | |
| EML 3012C Mechanics and Materials II | .3 |
| EML 3015C Thermal Fluids I | .4 |
| EML 3017C Mechanical Systems I | .4 |

| | |
|---------------------------------------------------------|------------|
| EEL 3003 Introduction to Electrical Engineering | .3 |
| EEL 3003L Introduction to Electrical Engineering Lab | .1 |
| | 15 |
| Second Semester | |
| EML 3014C Dynamic Systems II | .4 |
| EML 3016C Thermal Fluids II | .4 |
| EML 4304L Experimentation in Fluid and Thermal Sciences | .3 |
| EML 3018C Mechanical Systems II | .4 |
| | 15 |
| Senior Year | |
| First Semester | |
| EML 4550 Engineering Design Methods | .3 |
| EML 4551C Senior Design Project I | .3 |
| EML 4935 Senior Seminar | .0 |
| XXX 4XXX ME Technical Elective I | .3 |
| XXX 4XXX ME Technical Elective II | .3 |
| Social Science Elective (Select from approved list) | .3 |
| | 15 |
| Second Semester | |
| EML 4552C Senior Design Project II | .3 |
| XXX 4XXX ME Technical Elective III | .3 |
| XXX 4XXX ME Technical Elective IV | .3 |
| Humanities/Social Science Elective | .3 |
| (select from approved list) | |
| | 12 |
| Total Semester Hours | 128 |

Technical Electives are generally intended to develop depth in an area of interest and must form a coherent area of concentration. A minimum of three (3) technical electives (nine [9] semester hours) must be in the Department of Mechanical Engineering.

The Math Option is intended to provide additional math expertise oriented towards various areas of engineering. Students must choose from the following; MAP3306 or STA3034 with alternates; MAD3401, *MAD3703, *MAP4341 or MAS3103 (*courses offered FSU campus).

EML3004C 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 EML3004C.

Definition of Prefixes

- EAS - Aerospace Engineering
- EGM - Engineering Mechanics
- EGN - General Engineering
- EMA - Materials Engineering
- EML - Mechanical Engineering

Undergraduate Courses

EAS 4101 Principles of Aerodynamics (3) Prerequisite: EML 3016C. Atmospheric flight vehicles; the reason for configuration and the nature of airflows; two-dimensional subsonic thin air; airfoils prediction of pressure, lift, and other properties of airfoils.

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. 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 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 3002C Mechanical Engineering Tools (4) Prerequisites: MAC 2311; PHY 2048, 2048L. Course covers communication and data handling, computer aided design, basic thermofluids, introductory programming concepts, machine shop practice.

EML 3004C Introduction to Mechanical Engineering (4) Prerequisites: MAC 2312; PHY 2048, 2048L. Course covers the engineering profession, drafting, measurements, ethics, statics, the application of chemistry, calculus and physics to engineering problems, and an overview of the engineering design process.

EML 3011C Mechanics and Materials I (4) Prerequisites: CHM 1045, 1045L; EML 3002C, 3004C; MAC 2313; PHY 2048, 2048L. This course is the first part of a two-part sequence integrating concepts of mechanics and principles of materials. It will provide 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; PHY 2049, 2049L. 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 3002C, 3004C. Corequisite: MAP 3305. 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 (4) 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 3013C; MAC 2313. 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. Required corequisite: EML 4304L. 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, 3013C; MAP 3305. This is the first course 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 mechanical systems.

EML 3018C Mechanical Systems II (4) Prerequisites: EML 3012C, 3017C. This is the second course 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 involving dissection of existing machines and design and manufacture of new mechanical systems.

EML 3050 Analytical Tools in Mechanical Engineering (3) Prerequisites: MAP 3305, EML 3002C, EML 3004C. Corequisite: EML 3011C, EML 3013C. Mathematical and numerical tools relevant to practical applications in mechanical engineering. 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 methods, and finite element methods; numerical interpolation and integration.

EML 3100 Thermodynamics (2) Prerequisites: CHM 1045; MAC 2312; PHY 2048. 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. Includes concepts of materials science and their relevance to engineering design. Recent advances in engineering materials science.

EML 3949 Cooperative Work Experience (0) (S/U grade only.)

EML 4161 Cryogenics (3) Prerequisites: EML 3012C; 3016C. 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 4304L Experimentation in Fluid and Thermal Systems (3) Prerequisites: EML 3015C, 3012C. Corequisite: EML 3016C. Engineering laboratory 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. 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. 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 4421 Fundamentals of Propulsion Systems (3) Prerequisite: EML 3016C. 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). Prerequisite: 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 - 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 4512 Thermal-Fluid Design (3) Prerequisite: EML 3016C. This course is intended to develop the students 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. Introduction to the theory and practice of computer-aided design: computer graphics, homogeneous transformations; parametric solid modeling, optimization, finite element analysis.

EML 4536 Design Using FEM (3) Prerequisite: EML 3018C. The Finite Method - what it is, elementary FEM theory, structures and ele-

ments, 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) Prerequisite: EML 3012C; senior standing in mechanical engineering The application of materials predicated on material science and engineering case studies covering most engineering applications.

EML 4550 Engineering Design Methods (3) Prerequisites: EML 3012C, EML 3014C, EML 3016C, EML 3018C. Corequisite: EML 4551C. This 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, 3014C, 3016C, 3018C. Corequisite: EML 4550. 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) Prerequisites: EML 4550, 4551. 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. 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 4905r Directed Individual Study (1-3) Prerequisites: Junior standing, a "B" average in mechanical engineering courses. May be repeated to a maximum of twelve (12) semester hours.

EML 4930r Special topics in Mechanical Engineering (1-4) Prerequisite: Approval of instructor. Topics in mechanical engineering with emphasis on recent developments. Content and credit will vary. Consult the instructor. May be repeated to maximum of twelve (12) semester hours.

EML 4945r Practical Work in Mechanical Engineering (1-3) (S/U grade only.) Prereq: Approval of adviser. May be repeated to a maximum of three (3) semester hours.

EML 4970r Honors Work (3) Prerequisite: Acceptance into honors program. 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 (6) required semester hours.

EML 5451 Energy Conversion Systems for Sustainability (3)
 EML 5453 Sustainable Power Generation (3)
 EML 5524 Experimentation in Mechanical Engineering (3)
 EML 5537 Design Using FEM (3)
 EML 5543 Materials Selection in Design (3)
 EML 5709 Fluid Mechanic Principles with Selected Applications (3)
 EML 5710 Introduction to Gas Dynamics (3)
 EML 5725 Introduction to Computational Fluid Dynamics (3)
 EML 5802 Introduction to Robotics (3)
 EML 5831 Introduction to Mobile Robotics (3)
 EML 5905r Directed Individual Study (1-6). (S/U grade only.)
 EML 5910r Supervised Research (1-5). (S/U grade only.)
 EML 5930r Special Topics in Mechanical Engineering (1-6)
 EML 5935r Mechanical Engineering Seminars (0). (S/U grade only.)
 EML 5946 Professional Internship Experience in Mechanical Engineering (4)
 EML 6365 Robust Control (3)
 EML 6716r Advanced Topics in Fluid Dynamics (3-6)

For listings relating to graduate course work for thesis, dissertation, and master's and doctoral examinations and defense, consult the Graduate Bulletin.

Graduate Courses

EGM5444 Advanced Dynamics (3)
 EGM5611 Introduction to Continuum Mechanics (3)
 EGM5653 Theory of Elasticity (3)
 EGM5810 Viscous Fluid Flows (3)
 EGM6845 Turbulent Flows (3)
 EGN 5456 Introduction to Computational Mechanics (3)
 EMA 5226 Mechanical Metallurgy (3)
 EMA 5514 Optical and Electron Microscopy (3)
 EML 5060 Analysis in Mechanical Engineering (3)
 EML 5072 Applied Superconductivity (3)
 EML 5152 Fundamentals of Heat Transfer (3)
 EML 5155 Convective Heat and Mass Transfer (3)
 EML 5162 Cryogenics (3)
 EML 5311 Design and Analysis of Control Systems (3)
 EML 5317 Advanced Design and Analysis of Control Systems (3)
 EML 5361 Multivariable Control (3)



School of Allied Health Sciences

The School of Allied Health Sciences is one of three health professional schools at The Florida Agricultural and Mechanical University. The school was established in recognition of the need to provide access to quality education in a group of rapidly growing health professions—cardiopulmonary science, health care management, health information management, occupational therapy, and physical therapy. The objectives of the School of Allied Health Sciences are as follows:

1. To produce highly trained professionals who are qualified to assume leadership roles in their particular disciplines and who possess the potential to become proficient in the areas of academics and clinical instruction, supervision, and administration.
2. To provide an environment in which students may develop their fullest potential toward the realization of vocational aspirations in selected allied health professions.
3. To inspire a thirst for the creation, understanding, transmission, and utilization of basic and new knowledge related to health care delivery.
4. To promote respect for the rights and dignity of humankind, dedication to the furtherance of humanitarian principles of health preservation, and a sense of responsibility for the advancement of professional health care.
5. To maximize the interrelatedness of programs in allied health through innovative approaches to the education of health professionals.
6. To provide access to allied health educational programs for qualified individuals in Florida, the southern region, and the nation.
7. To foster a commitment to continued personal and professional development for self-realization and responsible citizenship.

The School of Allied Health Sciences is organized into five divisions, through which degree programs are offered. The Division of Occupational Therapy offers the Master of Science in Occupational Therapy degree, the Division of Physical Therapy currently offers the Master's degree in Physical Therapy and has been granted the approval to offer the Doctorate degree in Physical Therapy starting Fall 2008 Semester. The Division of Health Care Management offers degrees at both the Master's and Baccalaureate levels. The remaining two divisions, Cardiopulmonary Science and Health Information Management offer degrees at the baccalaureate level. Additionally, the School of Allied Health Sciences offers baccalaureate degrees in Health Sciences and in Health Sciences with a concentration on Occupation and Wellness, which allow students to graduate as generalists, prepared to enter the health care work force into certain positions immediately. The Health Sciences degrees also serve as feeders to the graduate degree programs offered by the School. The Occupational Therapy Division has discontinued the undergraduate program.

For undergraduate applicants, the pre-professional curriculum refers to those courses needed to complete the general education requirements of the University, as well as courses required as prerequisites to the professional program content. For applicants to one of the graduate programs, a completed baccalaureate degree is required as well as courses identified as prerequisites to the graduate program content.

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 Sciences, Health Administration, Health Care Management, Health 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 require-**

ments.

****The school may implement curricular changes which are required not only of incoming students, but also for currently enrolled matriculants.**

Admissions Qualifications

The School of Allied Health Sciences is comprised of five professional programs and the 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 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.

Policies

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 and 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.

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 within five (5) days of the student return to class or campus. The approved excused absence is effective only until the expiration date.

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, the following should occur: immediately stop the 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.

Disruption of the Academic Process Policy—The disruption of the academic process is the act or words of a student in a classroom or teaching environment which is reasonable estimation of a faculty member that directs attention away from the 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.

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. Procedures are available in the Office of the Dean.

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, then, that the student keep 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.

Advisors—Advisement is a continuous and active process in the School of Allied Health Sciences. Each student is assigned to a faculty member for advisement on matters relative to the student’s academic program and professional activities. The faculty advisor should be the student’s first line of communication in addressing academic, professional, and/or other perceived problems. The advisor will maintain a record of advisement activities for each student.

Appeal and Academic Grievances—Any decision affecting the status of applicants for admission or students enrolled in any School of Allied Health Sciences programs may be appealed. Procedures for appeals and grievances are available in the office of the Dean.

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 may be required to submit to and pay for criminal background checks. By title and function, a faculty member in each division coordinates clinical experiences. Each student is expected to assume responsibility for costs associated with clinical experiences.

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 Sciences, 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.

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. 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.

Faculty

SOAHS Administration

Dean of School of Allied Health Sciences: Mosley, Barbara
Interim Associate Dean: Roberts, Velma
Interim Assistant Dean, Student Affairs: Hudson, Sr., William
Division Directors: Johnson, Patrick; Lewis, Marisa; McNeill, Majorie; Miller, Rosalie; Toran, Eric

SOAHS Faculty

Professors: Bell, Arnold; Johnson, Patrick Jr.; Mosley, Barbara
Associate Professors: Hinds, Maria; Hudson, William; Lewis, Marisa; McNeill, Majorie; Roberts, Velma; Toran, Eric
Assistant Professors: Hunter, Lon’tejuana; Oliveira, Debora; Perryman, Martha; Simmons, Mary; Smothers, Bernard; Woods, Kandy
Instructors: Burke, Lauralynn

Pre-Professional Curriculum

Undergraduate students are advised to apply to programs in the School of Allied Health Sciences as a Pre-Professional major during their freshman or sophomore year.

A student entering the university for the first time will be expected to successfully complete sixty (60) semester hours of general education required by the university as a part of their pre-professional curriculum. Those requirements are as follows:

| Area | Sem. Hrs. |
|---------------------------------------------------------------------------------|-----------|
| Communicative Skills** | .6 |
| Mathematics** | .6 |
| Humanities** | .6 |
| Social Sciences** | .6 |
| Natural and Physical Sciences** | .8 |
| Free Electives** | .3-4 |
| Division (Major) Electives (In addition to specific professional prerequisites) | .24-25 |

**See Core Curriculum and specific prerequisites of professional programs.

Selection of the specific courses needed to meet these requirements should be made in consultation with each student’s designated academic advisor in his or her respective division in the School of Allied Health Sciences. All course selections must have written approval of the academic advisor.

The School of Allied Health Sciences offers a bachelor of science degree in cardiopulmonary science, health care management, health information management, health sciences (pre-physical therapy) and health sciences (occupation and wellness). Each division combines the general education requirements of the university with specialized didactic and clinical experiences generic to each division specialty.

The pre-professional course requirements as defined by each division are outlined in each of the following division sections.

DIVISION OF CARDIOPULMONARY SCIENCE

Cardiopulmonary science, also known as respiratory care, is an allied health profession which prepares 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.

The Division of Cardiopulmonary Science is accredited by the Commission on Accreditation of Allied Health Educational Programs in cooperation with the Committee on Accreditation for Respiratory Care.

Faculty

Professor: Johnson, Patrick, Jr.
Assistant Professor: Simmons, Mary; Woods, Kandy
Medical Director: Saint, David

Curriculum—The curriculum in cardiopulmonary science is designed to prepare registered respiratory therapists. The curriculum is divided into two phases: a pre-professional curriculum and a professional curriculum. 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. 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.

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 access 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.

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 | .4 |
| ENC 1101 Freshman Communicative Skills I | .3 |
| MAC 1105 College Algebra | .3 |
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| Spring Semester | |
| AMH 2091 Introduction to African American History | .3 |
| CHM 1031 Chemistry for Health Sciences (with Lab) | .4 |
| ENC 1102 Freshman Communicative Skills II | .3 |
| HSC 1100 Health for Modern Living | .3 |
| MAC 1114 Algebraic and Trigonometric Functions | .3 |
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Sophomore Year

| | |
|-------------------------------------------------------------------|-----------|
| Fall Semester | |
| 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 |
| | <hr/> |
| | 14 |
| Spring Semester | |
| 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 |
| | <hr/> |
| | 14 |
| Summer Semester | |
| MAN 3021 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 |
| | <hr/> |
| | 10 |
| Pre-Professional Curriculum Total Credits | 71 |

Professional Curriculum

Junior Year

| | |
|---------------------------------------------------------------------------|-----------|
| Fall Semester | Sem. Hrs. |
| RET 3483 Health Assessment and Intervention I (with Lab) | .4 |
| RET 3485 Integration of Structure and Function of Human Systems | .4 |
| RET 4350 Medical Therapeutic Agents | .4 |
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|-------------------------------------------------------------------------|-------|
| Spring Semester | |
| RET 3034 Cardiopulmonary Assessment (with Lab) | .4 |
| RET 3874 Clinical Process and Intervention I | .4 |
| HSA 3110 Organization and Administration of Health Facilities | .3 |
| RET 4294 Cardiopulmonary Pathophysiology | .2 |
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|----------------------------------------------------------------------------|-------|
| Summer Semester | |
| RET 3264 Critical Health Assessment and Interventions (with Lab) | .4 |
| RET 3875 Clinical Process and Critical Interventions II | .4 |
| RET 4930 Professional Seminar, Cardiopulmonary Science | .1 |
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Senior Year

| | |
|--------------------------------------------------------------------------|-------|
| Fall Semester | |
| RET 4618 Advanced Practicum in Cardiopulmonary Science | .3 |
| RET 4876 Clinical Process and Critical Interventions III | .4 |
| RET 4714 Neonatal and Pediatric Respiratory Therapy (with Lab) | .5 |
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|------------------------------------------------------------------------------------|-------|
| Spring Semester | |
| RET 4877 Clinical Process and Critical Interventions IV | .4 |
| RET 3418 Diagnostics and Non-Traditional Health Care Delivery (with Lab) | .4 |
| | <hr/> |
| RET 4616 Advanced Seminar in Cardiopulmonary Science | .2 |
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Professional Curriculum Total Credits**56**

Total Credits**127**

Course Descriptions

RET 3034 Cardiopulmonary Assessment and Interventions (3, 1) Prereq: RET 3483, RET 3485, Coreqs: RET 3874, RET 4350. 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 3264 Critical Health Assessment and Interventions (3, 1) Prereq: RET 3034, RET 3305, RET 3874. Coreq: RET 3284, RET 3875. 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 3418 Diagnostics and Non-Traditional Health Care Delivery (3,1) Prereq: RET 3284, RET 3875. Coreqs: RET 4294, RET 4876. Theoretical concepts of cardiorespiratory diagnostics and data interpretation are presented. Disease prevention, rehabilitation and home care and nontraditional health care delivery settings are also emphasized.

RET 3483 Health Assessment and Interventions (3, 1) Prereq: BSC 3093, BSC 3094. 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 3485 Integration of Structure and Function of Human Systems (4) Prereq: BSC 3093, BSC 3094, MCB 3005, PHY 3004. 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 3874 Clinical Process and Interventions I (3) Prereq: RET 3483, RET 3485. Coreq: RET 3034, RET 3350. Interpersonal interactions, practice of fundamental assessment and interventions are integrated with case presentations, clinical problem-solving activities, and selected clinical simulations.

RET 3875 Clinical Process and Critical Interventions II (4) Prereq: RET 3874, RET 3034, Coreq: RET 3284. Interpersonal interactions, prac-

tice of intermediate assessment and interventions are integrated with case presentations, clinical problem-solving activities, clinical conferences and clinical simulations. Clinical problem-solving is emphasized.

RET 4294 Cardiopulmonary Pathophysiology (2) Prereq: RET 3875, RET 3284, RET 4616. Etiology, pathophysiology, and management of selected respiratory diseases are approached from a pulmonary medicine prospective.

RET 4350 Medical Therapeutic Agents (3). Prereq: RET 3483, RET 3485. Coreq: RET 3034, RET 3874. Principles of 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). Prereq: RET 3034, RET 3350, RET 3875. 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 (2). Prereq: RET 3875; RET 4294; and RET 4714. Etiology, pathophysiology, and management aspects of selected cardiopulmonary diseases/disorders and related multi-system failure are presented in a clinical problem solving format. Emphasis is placed on assessment, physiologic monitoring and management of patients/clients requiring critical care in the Intensive Care Unit.

RET 4714 Neonatal and Pediatric Respiratory Therapy (3, 1). Prereq: RET 3485, RET 4294, RET 4876; Coreq: RET 4877. Assessment, pathophysiology and interventions of selected cardiopulmonary diseases common to neonatal and pediatric critical care patients are presented.

RET 4876 Clinical Process/Critical Interventions III (4). RET 3875, RET 4616. Coreq: RET 3418. 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 4877 Clinical Process and Critical Interventions IV (4). Prereq: RET 4616, RET 4876; Coreq: RET 4714. 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 in Respiratory Therapy (1). Prereq: RET 4616, RET 4618. Practical experiences for professional competence beyond entry-level, management of respiratory care services, respiratory therapy education, and research are emphasized.

DIVISION OF HEALTH CARE MANAGEMENT

The health care industry is one of the largest industries in this country and is still growing relative to other industrial sectors. According to employment forecasters, over the next decade eight of ten fastest growing career fields will be in health services occupations. There are increasing and broadening areas of need for health care managers with bachelor degrees. The health care management curriculum is designed to prepare students for challenging and rewarding careers as managers, directors, planners and policy-makers in a variety of settings in both the private and public healthcare sectors. Managed Care Organizations and integrated delivery systems are providing new and challenging career opportunities for health care managers.

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 all of 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, physical therapists, occupational therapists, respiratory therapists, and other clinical professionals who provide direct health care services and for ensuring that health care is provided in a cost-effective and humane manner.

The Division of Health Care Management is a full member of the Association of University Programs in Health Administration (AUPHA). The

core curriculum 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. Graduates of the program are eligible to sit for the State of Florida nursing home licensure examination.

Faculty

Associate Professors: Hudson, William; Lewis, Marisa; Roberts, Velma

Assistant Professors: Perryman, Martha

Curriculum—The program is interdisciplinary, with students taking courses in many academic units of the university. The curriculum includes a core of health care management subjects supplemented by management science studies and supported by a foundation of liberal arts and sciences courses with a quantitative emphasis. The student gains a broad view of health and the U.S. health care delivery system and develops analytical skills in such areas as economics, finance, planning, decision-making, and policy analysis - all applicable to health care organizations.

Clinical Experiences—An essential part of the academic experience is a thirteen (13) week field practicum. This internship integrates course work with a supervised work experience and allows the student to explore an area of special interest.

Pre-Professional Curriculum

| | Sem. Hrs. |
|---------------------------------------------------------------|-----------|
| Freshman Year | |
| Fall Semester | |
| ENC 1101 Freshman Communicative Skills I | .3 |
| MAC 1114 Algebraic/Trigonometric Functions or MAC 1147 | |
| Pre-calculus | .3 |
| CHM 1020 Fundamentals of Chemistry (3) or | |
| PSC 1121 Introduction to Physical Science w/Lab | .3-4 |
| HUM 2211 Historical Survey I or Any Approved | |
| Humanities Course | .3 |
| HSC 1000 Orientation to the Health Sciences | .1 |
| | 13-14 |
| Spring Semester | |
| ENC 1102 Freshman Communicative Skills II | .3 |
| BSC 1005 Biological Science w/Lab | .4 |
| MAC 2233 Calculus for Business or MAC 3311 Calculus | .3 |
| SPC 2600 Public Speaking or | |
| SPC 1050 Foundation of Speech | .3 |
| | 13 |

Sophomore Year

| | |
|--------------------------------------------------------------------------------------------|----|
| Fall Semester | |
| ECO 2013 Principles of Economics | .3 |
| PHI 2010 Introduction to Philosophy | .3 |
| or PHI 2101 Introduction to Logic or PHI 3600 Ethics | |
| ACG 2021 Financial Accounting Principles or ACG 2022 Financial Accounting | .3 |
| AMH 2010 United States History or AMH 2020 | .3 |
| PSY 2012 Introduction to Psychology or | |
| SYG 2000 Introduction to Sociology | .3 |
| | 15 |
| Spring Semester | |
| AMH 2091 Introduction to African-American History , AMH 3572, AMH 3571, or AFA 3104 | .3 |
| ACG 2071 Managerial Accounting Principles or ACG 3301 Managerial Accounting | .3 |
| MAN 2812 Introduction to Business Systems or | |

| | |
|------------------------------------------------------------------------------------------------------------------------|-------|
| CGS 1160 Introduction to Microcomputer Applications or CGS 2571 Overview of Microcomputer Applications | 3 |
| POS 2041 American National Government or | |
| POS 2001 Introduction to Political Science | 3 |
| STA 2023 Introduction to Probability and Statistics I | 3 |
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| | 15 |

Pre-Professional Total Credit Hours57**Professional Curriculum****Junior Year**

Fall Semester

| | |
|-----------------------------------------------------------------------|-------|
| HSA 3110 Organization and Administration of Health Care Facilities .. | 3 |
| HSC 3531 Medical Terminology | 3 |
| MAN 3025 Principles of Management | 3 |
| HSA 3170 Health Care Finance | 3 |
| HSC 3930 Professional Development I | 1 |
| HSA 3225 Introduction to Long-term Care | 3 |
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Spring Semester

| | |
|-----------------------------------------------------------|-------|
| HSA 3141 Approaches to Health Planning | 3 |
| HSA 3180 Health Care Management Theory and Practice | 3 |
| MAN 4301 Personnel Management | 3 |
| HSC 3640 Health Law | 3 |
| HSC 3931 Professional Development II | 1 |
| MAN 4201 Organizational Behavior | 3 |
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| | 16 |

Summer

| | |
|--------------------------------------------------|-------|
| HSA 4850 Health Care Management Internship | 6 |
| | <hr/> |
| | 6 |

Senior Year

Fall Semester

| | |
|---------------------------------------------------------------|-------|
| HSA 3430 Health Care Economics | 3 |
| HSA 4700 Health Care Research | 3 |
| HSA 4383 Quality Management in Healthcare Organizations | 3 |
| HSC 4930 Professional Development III | 1 |
| *Approved Elective | 3 |
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| | 13 |

Spring Semester

| | |
|------------------------------------------------|-------|
| HSC 4634 Seminar: Critical Health Issues | 3 |
| HSC 4202 Public and Community Health | 3 |
| HSA 4150 Health Policy and Politics | 3 |
| HSC 4931 Professional Development IV | 1 |
| *Approved Elective | 3 |
| | <hr/> |
| | 13 |

Professional Curriculum Total Credit Hours63**Total Semester Hours120**

*Electives must be approved by Health Care Management faculty. Approved electives will be restricted to 3000 and 4000 level.

Long-term Care Administration Track

In order to fulfill the requirements of the long-term care management track and to qualify for certification to sit for the State of Florida nursing

home administration licensure examination, a student majoring in Health Care Management must in addition to completing the general curriculum, take the following courses:

HSA 3220 Long-term Care Management
HSA 4183 Applied Management in Long-term Care
SYP 4730 Aging America
SYO 3400 Medical Sociology

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 United States health care system. Divisional approval required.

HSA 3141 Approaches to Health Planning (3) Prereq: HSA 3110. Theories, methodologies, practices in health planning, institutional strategic planning, and health marketing. Divisional approval required.

HSA 3170 Financial Management in Health Care (3) Prereq: ACG 2021; ACG 2071. Managerial financial management of health care institutions relating to acquisition, planning, budgeting, and control of funds to meet organizational objectives. Divisional approval required.

HSA 3180 Health Care Management Theory and Practice. Prereq: MAN 3025, HSA 3110. An in depth examination of the application of management and organizational theory and concepts in health care institutions.

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 3220 Long Term Administration (3) Prereq: HSA 3110; HSA 3180. Administrative issues in care for long-term care patients including the special social, cultural, and economics considerations related to services to these type patients. Divisional approval required.

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. Divisional 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. Divisional approval required.

HSA 4700 Health Care Research (3) Prereq: MAN 2812; STA 2023. 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. Divisional approval required.

HSA 4850 Health Care Management Practicum (5) A thirteen-week (480 hours) practicum designed to give students direct experience in various health care settings. Students have a variety of organizations available for this placement. Divisional approval required.

HSA 4906 Directed Individual Study (1-12 variable) Divisional 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. Divisional 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.

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. Divisional approval required.

HSC 3930 Professional Development I (1) A seminar to familiarize the student with the profession of health care administration, its historical bases, contemporary trends, and future perspectives. Divisional approval required.

HSC 3931 Professional Development II (1) Prereq: HSC 3930. A seminar to examine traditional and alternative methods of health care delivery in America. Divisional 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. Divisional approval required.

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. Divisional approval required.

HSC 4634 Critical Health Issues (3) Prereq: HSA 3110, HSA 3170, HSA 3180. An examination of current issues facing the health care industry including access, costs, and quality of services as well as national and state health policy. Divisional approval required.

HSC 4930 Professional Development III (1) Prereq: HAS 4350, HSC 3931. A seminar to examine the skills and abilities leading to management success in politics, business, industry, and health care administration. Divisional approval required.

HSA 4931 Professional Development IV (1) Prereq: HSA 4850, HSC 4930. A seminar to prepare emerging health care managers to initiate their careers with appropriate objectives and career plan. Divisional approval required.

HSA 4383 Quality Management in Healthcare Organizations (3) 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.

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.

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 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 3700 Disability and Society (3). Overview of the types of disabling conditions, myths about people with disabilities, societal attitudes that facilitate and impedes opportunities for people with disabilities, and career opportunities in the field of rehabilitation.

RCS 3030 Introduction to Vocational Rehabilitation (3). An overview of the history and, philosophy of rehabilitation. Examine the organizational structure of public and private rehabilitation agencies.

to other health professionals; answering informational needs of lawyers, physicians, insurance, and governmental agencies; and insuring the accuracy and confidentiality of recorded patient information. Popular job titles include HIM department director, HIM system manager, data quality manager, information security officer, HIM college instructor, and consultant. These health information management professionals may choose to work in a variety of settings such as hospitals, clinics, medical group practices, insurance companies, nursing homes, pharmaceutical companies, or law firms.

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
c/o American Health Information Management Association
233 North Michigan Avenue, Suite 2150
Chicago, IL 60601
(312) 233-1131
www.cahiim.org

Admission Process—Criteria for admission to the Division of Health Information Management includes:

1. Acceptance into the University;
2. Completion of an application for admission to the Division of Health Information Management;
3. Minimum overall GPA of 2.5 or better in all pre-professional course work;
4. Submission of two letters of recommendation; and
5. Submission of an autobiographical essay of at least 300 words indicating reasons for desiring to enter the health information management profession.

Admission is by selection and is based on evaluation of overall GPA, grade trend, letters of recommendation, leadership activities, and the admission to the University. A personal interview may be required.

Curriculum—The health 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 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 HIM 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 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 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).

Faculty

Professor: Mosley, Barbara
Associate Professor: McNeill, Marjorie
Assistant Professor: Hunter, Lon'tejuauna
Instructor: Burke, Lauralynn

Health Information Management Pre-Professional Curriculum

Freshman Year
Fall Semester

Sem. Hrs.

DIVISION OF HEALTH INFORMATION MANAGEMENT

Health Information Management (HIM) 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.

In most health care facilities, the HIM professional performs tasks as diverse as coding diseases and procedures; providing research data

ENC 1101 Freshman Communicative Skills I3
 MAC 1105 College Algebra3
 BSC/CHM (Any approved biology or chemistry) w/Lab4
 HSC 1000 Orientation to Health Sciences1
 AMH 2010 **OR** AMH 2020 American History3

14

Spring Semester

ENC 1102 Freshman Communicative Skills II3
 MAC 1114 Algebraic/Trigonometric Functions3
 BSC 1010 General Biology I (with Lab) **OR**
 BSC 1005 Biological Science (with Lab)4
 SYG 2000 Introduction to Sociology **OR**
 PSY 2012 Introduction to Psychology3
 AMH 2091 Introduction to African American History **OR** AFA 3104
 African American Experience **OR** AMH 3571 **OR** AMH 35723

16

Sophomore Year

Fall Semester

*BSC 2093 Anatomy and Physiology I (with Lab) **OR**
 PHA 3580 Human Systems/Functions Pathology I4
 *ACG 2021 Financial Principles of Accounting **OR**
 ACG 2022 Financial Accounting3
 HUM 2211 Historical Survey I **OR**
 HUM 2230 Historical Survey II **OR**
 Any recognized humanities course3
 *CGS 1160 Introduction to Microcomputer Applications **OR**
 CGS 2571 Overview of Microcomputer Applications **OR**
 MAN 2812 Introduction to Business Systems3
 SPC 1050 Foundations of Speech **OR**
 SPC 2600 Public Speaking3

16

Spring Semester

*BSC 2094 Anatomy and Physiology II (with Lab) **OR**
 PHA 3581 Human Systems/Functions Pathology II4
 *ACG 2071 Managerial Principles of Accounting **OR**
 ACG 3301 Managerial Accounting3
 *STA 2023 Introduction to Probability and Statistics3
 *MAN 3025 Principles of Management3

13

Pre-Professional Curriculum Total Credits59

Professional Curriculum

Junior Year

Sem. Hrs.

Fall Semester

HIM 3006 Foundations in Health Information Management3
 HIM 3437 Fundamentals of Medical Science I3
 HIM 3930 Professional Development I1
 HSA 3110 Organization and Administration,
 Health Care Facilities3
HSC 3531 Medical Terminology3

13

Spring Semester

HIM 3016 Legal Aspects of Health Information3

HIM 3116 Quality Management in Health Services3
 HIM 3438 Fundamentals of Medical Science II3
 HIM 4406 Health Care Records3
 HSA 3170 Health Care Finance **OR**

HSA 3430 Health Care Economics3

15

Summer Semester

HIM 3806 Clinical Education I1
HIM 4226 Medical Classification Systems I3

4

Senior Year

Fall Semester

HIM 4286 Medical Classification Systems II3
 HIM 4306 Organization and Management,
 Health Information Department I3
 HIM 4816 Clinical Education II1
 HIM 4465 Healthcare Informatics3
MAN 4810 Systems Theory & Design3

13

Spring Semester

HIM 3626 Health Statistics & Research3
 HIM 4344 Organization and Management,
 Health Information Department II3
 HIM 4656 Health Information Systems3
 HIM 4932 Seminar, Health Information Management1
 HIM 4933 Professional Development II1
HIM/HSC/HSA Approved Elective (Upper Division)2

13

Summer Semester

HIM 4838 Management Affiliation3

Professional Curriculum Total Credits61

Total Semester Hours120

***Indicates courses that must be successfully completed regardless of degree status.**

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 correct and appropriate grammar and writing skills needed for documentation in various health/medical organizations. Emphasis is placed on techniques and skills necessary to convert observations and thoughts into appropriate clinical documentation. Medical spelling, symbols, abbreviations, and phrasing are covered. The course is designed to address the writing concerns of learners wishing to enter the health care field or professions who wish to improve skills.

HIM 3006 Foundations in Health Information Management (3) Introduction to the management of health record systems. Exploration of the content and format of clinical records, influence of accrediting and regulatory agencies, and storage and retrieval mechanisms. Introduction to the foundations of health information statistics. Laboratory accompanying.

HIM 3016 Legal Aspects of Health Information (3) Study of legal,

ethical, and regulatory requirements affecting the control, use, retrieval, and release of health information.

HIM 3116 Quality Management in Health Services (3) Introduction to the theoretical knowledge and technical skills relative to the operation of quality improvement, risk and utilization management programs within a health care facility. Laboratory accompanying.

HIM 3437 Fundamentals of Medical Science I (3) Prereq: BSC 2093, 2094. 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. Examination of types of health statistics, as well as techniques for data collection, presentation and retrieval. Methodology necessary to identify, prepare, and disseminate research projects and findings in the health care field.

HIM 3806 Clinical Education I (1) Prereq: HIM 3006. Orientation to health information functions within healthcare facilities. Rotation through technical functions of the department following the flow of the patient's record after discharge, including analysis, and correspondence, storage, retrieval, and control procedures.

HIM 3930 Professional Development I (1) Structured learning experiences to introduce students to HIM profession and professionalism; ethical challenges, that impact the profession and professionalism; and to prepare and assist students in developing career objectives and defining career plans.

HIM 4226 Medical Classification Systems I (3) Prereq: HIM 3438. Introduction to the concepts, principles and applications of ICD-9-CM. Overview of Diagnostic Related Groups (DRG's). Laboratory accompanying.

HIM 4286 Medical Classification Systems II (3) Prereq: HIM 4226. Continued study of ICD-9-CM principles with focus on DRG assignment and analysis. Coding procedures according to CPT. Purpose, use, and administration of various classification and nomenclature systems, indices, and registries. Laboratory accompanying.

HIM 4306 Organization and Management of a Health Information Department I (3) Prereq: MAN 3025. Study of management theories as related to the operation of a health information department with focus on organizational environment, 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 as related to the operation of a health information department. 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) CGS 1160 or CGS 2571 or MAN 2812. Introduction and application of computer technology to the management of health and biomedical information to improve the quality of patient care, medical education and research, and the evaluation of healthcare services. Laboratory accompanying.

HIM 4656 Health Information Systems (3) Prereq: HIM 4465. Analysis of information systems for computerized health information collection, retrieval, and interpretation. Laboratory accompanying.

HIM 4816 Clinical Education II (1) Prereq: HIM 3006, HIM 3116 and HIM 4226. Supervised learning experiences in a health information department with emphasis on computer applications, utilization review and quality improvement, statistical reporting, medical record research and coding.

HIM 4838 Management Affiliation (3) Supervised learning experience in the technical and administrative aspects of health information practice with emphasis on administrative functions of the HIM profession. Student will spend six weeks in the health information department of an accredited hospital or other healthcare facility. Division approval required.

HIM 4932 Seminar, Health Information Management (1) An examination of current issues and problems facing the health care industry and the health information management field. Effective methods of identifying problems and arriving at satisfactory solutions will be employed.

HIM 4933 Professional Development II (1) Prereq: All HIM courses. Structured learning experiences designed to enable the student to enter the health information management field. A comprehensive examination covering all major courses offered in the curriculum will be administered.

DIVISION OF OCCUPATIONAL THERAPY

Occupational therapy is a health care profession that promotes life-long 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.

Faculty

Associate Professor: Hinds, Maria

Assistant Professor: Oliveira, Debora

Curriculum—This is a five and one half year (3+2.5) program, designed to include a Bachelor of Science in Health Sciences (120 credits) with a concentration in Occupation and Wellness. The students majoring in Health Sciences, Occupation and Wellness emphasis, will have a general degree that will allow the graduate to work in a health care setting or continue on to graduate school.

Students interested in applying to the Master's of Occupational Therapy should major in the Health Sciences, Occupation and Wellness Program. In the fourth year of the curriculum, the student may apply to the professional program, the Master's of Occupational Therapy. Students must have a 3.0 GPA and take the GRE to apply to the program. Students are also required to have 30 hours experience with a registered occupational therapist in an occupational therapy setting.

Occupational Therapy: Bachelor of Science in Health Science with Concentration in Occupation and Wellness

| Freshman Year | Sem. | Hrs. |
|------------------------------------------|-------|------|
| Fall Semester | | |
| ENC 1101 Freshman Communication Skills I | | 3 |
| MAC 1105 College Algebra | | 3 |
| BSC 1010 General Biology (with Lab) | | 4 |
| HSC 1000 Orientation to Health Sciences | | 1 |
| HUM XXXX Elective | | 3 |

14

Spring Semester

ENC 1102 Freshman Communication Skills II

| | |
|---------------------------------------|-------|
| ANT 2000 Introduction to Anthropology | 3 |
| CHM 1020 Fundamentals of Chemistry | 3 |
| PHI 1100 Critical Thinking | 3 |
| DEP 2004 Human Growth and Development | 3 |
| | <hr/> |
| | 15 |

Sophomore Year

Fall Semester

| | |
|-----------------------------------------|-------|
| AMH 2010 or AMH 2020 U.S. History | 3 |
| PHY 2053 College Physics I | 3 |
| PHY 2048 College Physics I Lab | 1 |
| BSC 2093 Anatomy and Physiology I w/Lab | 4 |
| SPC 2600 Public Speaking | 3 |
| | <hr/> |
| | 14 |

Spring Semester

| | |
|--------------------------------------------------------------------------|-------|
| BSC 2094 Anatomy and Physiology II w/Lab | 4 |
| STA 2023 Introduction to Probability and Statistics | 3 |
| AFA 3104 African American Experience or AMH 2091 or AMH 3571 or AMH 3572 | 3 |
| PSY 2012 Introduction to Psychology | 3 |
| OTH XXXX Occupation, Health & Wellness | 3 |
| | <hr/> |
| | 16 |

Junior Year

Sem. Hrs.

Fall Semester

| | |
|--------------------------------------------------------------------|-------|
| HSA 3110 Organization and Administration of Health Care Facilities | 3 |
| CLP 4142 Abnormal Psychology | 3 |
| RCS 3700 Disability and Society | 3 |
| RCS 4200 Introduction to Vocational Evaluation | 3 |
| HSC 3531 Medical Terminology | 3 |
| | <hr/> |
| | 15 |

Spring Semester

| | |
|---------------------------------------------------------|-------|
| RCS 3030 Intro. to Rehabilitation | 3 |
| HSC 3640 Health Law or | |
| HIM 3016 Legal Aspects of Health Information | 3 |
| SYO 3400 Medical Sociology | 3 |
| RCS 4610 Supervision & Coordination of Vocational Rehab | 3 |
| HIM 3626 Health Statistics/Research or | |
| HSA 4700 Health Care Research | 3 |
| | <hr/> |
| | 15 |

Senior Year/Year One MSOT

Sem. Hrs.

Fall Semester

| | |
|-----------------------------------------------------|-------|
| OTH 3533 Occupation Across the Lifespan | 3 |
| RCS 4060/5206 Psychological Aspects of Disability I | 3 |
| HIM 3437/OTH 5XXX Fundamentals of Medical Science I | 3 |
| OTH 4721/5723 Professional Development I | 3 |
| OTH 4030/5032 Foundations of Occupational Therapy | 3 |
| | <hr/> |
| | 15 |

Spring Semester

| | |
|------------------------------------------------------|---|
| HIM 3438/OTH 5XXX Fundamentals of Medical Science II | 3 |
| OTH 4035/5033 Concepts in Human Occupation | 3 |

| | |
|------------------------------------------------|------------|
| OTH 4140/5142 Therapeutic Communication Skills | 3 |
| OTH 3992/5245 Neuroanatomy | 3 |
| | <hr/> |
| | 12 |
| Total Semester Hours: | 120 |

Course Descriptions

OTH 3533 Occupations Across Lifespan (3) This course promotes knowledge of normal human development and occupational roles from infancy to older adulthood. Developmental theories, activities and developmental tasks and activities are explored. The student will develop skills in observation and assessment of occupational performance components and roles.

OTH 4721 Professional Development I (3) 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 4030/5000 Foundation of Occupation Therapy (3) Introductory professional course that serves as a foundation to development of a broad base of knowledge and insight into occupational therapy.

OTH 4035/5033 Concepts in Human Occupation (3) 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 4140/5142 Therapeutic Communication Skills (3) This course is designed to provide students, in lecture and laboratory sessions, with opportunities to experience and participate in practical applications of therapeutic communication skills within patient/consumer-simulated contexts. Students will participate in small and large therapeutic group experiences designed to acquire functional knowledge of a variety of skills necessary to effectively communicate with individuals across the lifespan.

OTH 3992 Neuroanatomy (3) Emphasizes the human nervous system. Focus will be on the brain and spinal cord, internal organization and structure, pathways, blood supplies and somatosensory systems.

Bachelor of Science in Health Sciences Concentration in Pre-Physical Therapy

The School of Allied Health Sciences offers a course of study that leads to the degree Bachelor of Science in **Health Sciences: Pre-Physical Therapy Concentration**. The Health Science curriculum is designed to produce graduates capable of demonstrating those characteristics identified as desirable by employers 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 Sciences 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 Sciences at the undergraduate level.** Students who wish to apply to the physical therapy graduate program will major in Health Sciences Pre-Physical Therapy concentration (see below). Those who wish to pursue occupational therapy will major in Health Sciences Occupation and Wellness concentration (see Division of Occupational Therapy for complete curriculum). The Health Sciences degree also provides the basis for students to pursue graduate education in other health care and science-oriented arenas. The Health Sciences degree is suitable for students wishing to pursue and graduate with general health-related knowledge to be used as the basis for work in a 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 Sciences 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 Sciences degree,

such students are still able to graduate in a health-related arena.

Bachelor of Health Sciences (Pre-Physical Therapy Concentration)

| | |
|----------------------------------------------------|------|
| Freshman Year | Sem. |
| <i>Fall Semester</i> | |
| ENC 1101 Freshman Communicative Skills I | .3 |
| MAC 1105 College Algebra | .3 |
| BSC 1010 General Biology w/Lab | .4 |
| HSC 1000 Orientation to Health Sciences | .1 |
| CHM 1045 Chemistry I w/Lab | .4 |
| | 15 |

| | |
|-------------------------------------------------------------|----|
| <i>Spring Semester</i> | |
| ENC 1102 Freshman Communicative Skills. | .3 |
| *STA 2023 Introduction to Probability & Statistics. | .3 |
| CHM 1046 General Chemistry II w/Lab. | .4 |
| BSC 1011 General Biology II w/Lab | .4 |
| DEP 2004 Human Development | .3 |
| | 17 |

| | |
|--------------------------------------------------------------|----|
| Sophomore Year | |
| <i>Fall Semester</i> | |
| PHY 2053 College Physics I. | .3 |
| PHY 2048 Elements of Physics I w/Lab. | .1 |
| BSC 2093 Anatomy and Physiology I | .4 |
| AMH 2010 U.S. History 1492-1865 or | |
| AMH 2020 U.S. History 1865-Present. | .3 |
| PSY 2012 Introduction to Psychology. | .3 |
| <u>Humanities (any approved recognized course)</u> | .3 |
| | 17 |

| | |
|------------------------------------------------------------------|----|
| <i>Spring Semester</i> | |
| PHY 2054 College Physics II. | .3 |
| PHY 2049 General Physics II Lab. | .1 |
| BSC 2094 Anatomy and Physiology II w/Lab. | .4 |
| Humanities (any approved recognized course) | .3 |
| AFA 3104 African American Exp. or AMH 3571 or AMH 3572 | .3 |
| | 14 |

| | |
|--------------------------------------------------------------------------|----|
| Junior Year | |
| <i>Fall Semester</i> | |
| **HSA 3110 Organization & Administration Health Care Facilities. | .3 |
| HSC 3531 Medical Terminology. | .3 |
| HIM 3437 Fundamental Medical Science I. | .3 |
| RCS 3030 Introduction to Vocational Rehabilitation | .3 |
| <u>Elective.</u> | .3 |
| | 15 |

| | |
|--------------------------------------------------------------------------------|----|
| <i>Spring Semester</i> | |
| SYO 3400 Medical Sociology. | .3 |
| HIM 3438 Fundamental Medical Science II | .3 |
| HIM 3626 Health Statistics/Research. or HSA 4700 Healthcare Research | .3 |
| HSC 3640 Health Law or | |
| HIM 3016 Legal Aspects of Health Information | .3 |
| <u>RCS 3700 Disability and Society.</u> | .3 |
| | 15 |

| | |
|---------------------------------------------------------|-----------|
| Senior Year | Sem. Hrs. |
| <i>Fall Semester</i> | |
| SYP 4730 Aging in America | .3 |
| RCS 4060 Psychological Aspects of Disability. | .3 |
| XXX XXXX Professional Development I | .3 |
| RCS 4200 Introduction to Vocational Evaluation. | .3 |
| <u>Elective.</u> | .3 |
| | 15 |

| | |
|---------------------------------------------|----|
| <i>Spring Semester</i> | |
| MAN 3025 Principles of Management | .3 |
| EDP 3002 Educational Psychology or | |
| CLP 4142 Abnormal Psychology | .3 |
| HSC 4634 Critical Health Issues | .3 |
| RCS 4610 Supervision and Coordination in | |
| <u>Vocational Rehabilitation</u> | .3 |
| | 12 |

Total Semester Hours: 120

*Required pre-requisite for HIM 3626 Health Statistics/Research

**Required pre-requisite for HSC 4634 Critical Health Issues

School of Architecture

Limited Access Program

The School of Architecture is a professional school committed to preparing its graduates for excellence in the practice of architecture and landscape architecture. 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 according to the following calendar:
Summer Semester admissionApplications received by February 1.
Fall Semester admissionApplications received by May 1.
Spring Semester admissionApplications received by November 1.

Please note that these deadlines are earlier than the general University's deadlines.

Late applications are considered on a space-available basis.

Faculty

Professors: Dozier, Richard; Knight, Roy F.; Pabón, Arleen; Wells-Bowie, LaVerne; White, Edward T.; Wright, Rodney B., Dean

Associate Professors: Alfano, Michael; Chin, Andrew, Assistant Dean; Goodwin, Valerie; Huffman, Craig D.; Ots, Enn E.; Pugh, Thomas, Director of Institute for Building Sciences; Robles, Eduardo; Rome, Richard C., Director of Landscape Architecture

Assistant Professors: Bohannon, Cernetrius; Ham, Derek; Lewis, Elizabeth; Lumpkin, Ronald; Powers, Matthew

Research Associates: Ding, Huimin; Goodwin, Robert

Instructor: LaGrasse, Deborah

Librarian: Williams-Smith, Jeneice

Professor Emeritus: Mann, Thorbjorn; Shaeffer, Ronald E.

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.

The School of Architecture offers the National Architectural Accrediting Board (NAAB) 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 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.

Degree Programs

The School of Architecture offers professional and pre-professional programs at the graduate and undergraduate levels. The professional program confers an accredited Bachelor of Architecture or an accredited Master of Architecture degree. The successful completion of either degree qualifies the graduate to pursue licensure as a registered professional architect.

A. Bachelor of Science in Architectural Studies (B.S.): The pre-professional program leads to a Bachelor of Science in Architectural Studies. It is divided into pre-architecture (years one and two or lower division) and architecture (years three and four or upper division). The curriculum for the B.S. program provides a basic education in architecture and the built environment and includes requirements in mathematics, physics, social sciences, and humanities. Course sequences in architecture include architectural design, history and theory, structures, environmental technology, and materials and methods of construction. This degree establishes eligibility for the two-year professional Master of Architecture degree.

Freshman Admission - In addition to the university requirements for admission, a freshman who wishes to be considered as an architecture major must have achieved a minimum GPA of 2.50 in academic course work and a 900 on the SAT, or 1010 on SAT1, or 21 on the E/ACT. 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.

Admission to the Upper Division of the Architecture Program - All students from Florida A&M University, Florida community colleges, or other lower-division pre-architecture programs, must apply for admission to the upper-division program. Each applicant is evaluated individually. The eligibility requirements include an overall 2.50 GPA, a minimum 2.50 GPA in all architecture courses, completion of all lower-division courses, and the CLAST. Previously earned college credit may be transferred if equivalent courses are offered at Florida A&M and the student has earned a grade of "C" or better. Previous designed work may also be evaluated for admission to upper division.

No credit for architecture course work will be granted if it was completed at a vocational-technical school or institute. If appropriate, other course work may be used toward general education requirements or elective credits. Applicants must send curricula and course descriptions to the School of Architecture for evaluation. Only those transfer applicants who have received an Associate of Arts degree from a pre-architecture program with approved articulation will be considered for direct admission at the third-year level. Others who wish to begin the study of architecture must consult the Coordinator of Recruitment and Retention in the School of Architecture.

B. Bachelor of Architecture (professionally accredited program): The Bachelor of Architecture (B.Arch.) program focuses on design and practice. The B.Arch. involves in-depth instruction in programming, the preparation of a program report, and the design of a terminal project. There is also a B.Arch. distance learning option for professionals with extensive in-field experience and/or architects licensed in other states and seeking a professional degree in Florida.

Admission to the Professional Bachelor of Architecture Program
At the fourth-year level, the student's progress is reviewed for advancement to the fifth year. To advance, a GPA of 2.75 in all upper-division course work is required as well as completion of all courses in the first four years of the program. A review of prior design work is also required for admission. Students may transfer into the fifth-year program from other schools if they meet the requirements and have successfully completed the equivalent of FAMU's Bachelor of Science in Architectural Studies degree.

Students in the fourth year also have the option of applying for the Bachelor of Science in Architectural Studies degree. This degree establishes eligibility for the two-year professional Master of Architecture degree. For additional information, refer to the

University Graduate Catalog and the School of Architecture Graduate Handbook.

C. Master of Architecture (professionally accredited program): The Master of Architecture (M.Arch.) degree program is designed for a student with a four-year, non-accredited degree in architecture who wishes to earn an advanced professional accredited degree which also qualifies him or her to pursue the license to practice. The M.Arch. is also offered as a first professional degree for students entering with a bachelor's degree in a non-related field. The program prepares the student to practice architecture and provides opportunities to acquire additional skills in areas of specialization in the School. Emphasis is placed upon student freedom to pursue an investigation of personal interest consisting of in-depth inquiry into design and practice issues.

Admission to the Professional Master of Architecture Program -

To be admitted to this degree program, applicants must have a Bachelor of Science in Architectural Studies or an equivalent degree. Applicants with an equivalent degree who are missing course work in areas covered by the Bachelor of Science in Architectural Studies at Florida A&M University may be required to add this course work to the Master of Architecture requirements. A 3.00 GPA in the last 60 hours of course work or a combined score of 1000 on the GRE and a portfolio are also required.

Students with an undergraduate degree in a non-related field may also apply for admission to the M.Arch. A 3.0 GPA in the last 60 hours of course work or a combined score of 1000 on the GRE are required for the three-and-a-half-year master's option.

D. Master of Landscape Architecture: The Master of Landscape Architecture (MLA) program is offered as a first professional graduate degree for students entering with non-design backgrounds. The curriculum requires a total of 90 credit hours, which includes completion of a terminal thesis. The MLA is also offered as a second professional degree to students holding previous design degrees from the fields of landscape architecture or architecture. A total of 60 credit hours, which includes a terminal thesis, is required. The MLA program has as its focus not only innovative landscape design and land planning but also scholarly investigation into the sustainability and preservation of rural, suburban, and urban communities.

Admission to the Master of Landscape Architecture Program-

To be admitted to this degree program, applicants must have an undergraduate degree with a 3.0 GPA in the last 60 hours of course work or a combined score of 1000 on the GRE.

E. Master of Science in Architecture: This program is for students who do not wish to earn a professional degree for licensure. Applicants may already have an accredited architecture degree or may have a degree and/or background in another field. Students from fields other than architecture may be required to take selected undergraduate courses as preparation for their graduate work in architecture. For more information on each of the graduate programs, refer to the University Graduate Catalog or write to: Coordinator, Graduate Programs, Florida A&M University, School of Architecture, Tallahassee, Florida 32307-4200.

Portfolio Requirement

From the first year, every student is advised to prepare and maintain a portfolio of work, updating it each year to remain current. This important documentation of student work forms a valuable aspect of the School's advising program. Professional quality presentation is required. The portfolio is required for admission to the Bachelor of Architecture Program. The portfolio may be reviewed for admission to upper-division and the Master of Landscape Architecture Program. The portfolio may be required for advisement at every level of advancement. In addition, the portfolio is useful for obtaining internships and, upon graduation, a professional position.

Academic Progress and Retention

Undergraduate Programs - Retention and progression in the undergraduate programs at the School of Architecture require a grade of "C" or better in all courses in the curriculum. Once established as a pre-architecture major and upon completion of all 1000-level architecture course work, it is advised that a student maintains a minimum 2.50 GPA in architecture courses to progress to upper division. Students in upper division are advised to maintain a minimum 2.75 GPA in architecture courses to progress to the Bachelor of Architecture program or a minimum 3.0 GPA in architecture courses to progress to either of the graduate programs.

Graduate Program - A graduate student is required to maintain a grade point average of 3.00 ("B") or higher. Failure to maintain the required average could result in termination of a student's graduate status. For Master of Architecture, Master of Science in Architectural Studies, and Master of Landscape Architecture curricula, please also refer to the University Graduate Catalog.

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 College or University, the State University System founded the School 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.

Faculty and Students

The faculty is 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 in the School of Architecture 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 School of Architecture as high school graduates; others come as transfer students or second-degree candidates. Students are encouraged to become involved in organizations such as the School's chapter of the American Institute of Architecture Students (AIAS), the National Organization of Minority Architects Students (NOMAS), the American Society of Landscape Architects (ASLA), and Alpha Rho Chi. The School also has a chapter of Tau Sigma Delta, the architecture honor society. Student participation in these organizations provides a valuable service to the School as well as an important leadership-learning experience for members. There is also a Dean's Council in the School made up of elected student representatives from every level of the program. The Council works closely with the Dean on all matters of interest to students.

Building and Equipment

Since January 1985, the School has been housed in a building designed to reflect the quality of its programs. The building has an architectural resource center that offers 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 School of Architecture has its own computer laboratory which is freely accessible to all students. The lab is used for instruction and research in the application of computers to architecture. Science and technology laboratories are used for instruction and research in environmental controls 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 construction studies. An \$11 million expansion/renovation of the building was completed spring 2002.

Research in Architecture: Institute for Building Sciences

The Institute for Building Sciences (IBS) coordinates the research, service, and continuing education activities of the School of Architecture. 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

The faculty and administration of the School of Architecture believe that the student's education is greatly strengthened by visiting critics and

lecturers. Distinguished architects and designers are invited to give a broad range of views on current architectural thought and practice. 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. Many Special Studies courses are offered at the School. These result from interests of students and faculty and have included such topics as graphics, energy, structures, film, and architectural education for children.

Located in Florida's state capital, the School realizes special opportunities to work with many state and federal agencies and to be active in helping to establish governmental policies affecting architectural education. Local practicing architects and designers are also important assets to the School. They participate in student project reviews, part-time teaching assignments, and providing work experience for students. To enhance the curriculum, students have traveled as a class to selected sites around the United States, the Caribbean, Central America and Spain.

Financial Aid

A variety of financial aid sources is available to the student, including federal and state loans, grants, and scholarships. Financial aid is not awarded by the School of Architecture. Application must be made to the 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.

Curriculum Guides Bachelor of Science in Architectural Studies and Bachelor of Architecture

| Freshman Year | Sem. Hrs. |
|-------------------------------------|-----------|
| ENC 1101, 1102 Freshman Comp. I, II | .6 |
| MAC 1114 Trigonometric Functions | .3 |
| ARC 1211, The Building Arts | .3 |
| ARC 1301,1302, Design 1.1, 1.2 | .8 |
| MAC 2311, Calculus 1 | .4 |
| General Education Elective | .3 |
| | 27 |

| Sophomore Year | Sem. Hrs. |
|------------------------------------------------|-----------|
| AMH XXXX African-American History | .3 |
| ARC 2201 Theory in Architecture | .3 |
| ARC 2303, 2304 Architectural Design 2.1, 2.2 | .8 |
| ARC 2470 Intro. to Technology of Architecture. | .3 |
| ARC 2501 Architectural Structures I | .3 |
| ARC 2701 Architectural History I | .3 |
| PHY 2053 College Physics I | .4 |
| Natural Science Elective | .4 |
| Social Science Elective | .3 |
| | 34 |

| Junior Year | Sem. Hrs. |
|-------------------------------------------------|-----------|
| ARC 3058 Computer Applications in Architecture | .3 |
| ARC 3207 Architectural History II | .3 |
| ARC 3703 Architectural History III | .3 |
| ARC 3324, 3325 Architectural Design 3.1, 3.2 | .10 |
| ARC 3463 Materials & Methods of Construction II | .4 |
| ARC 3551 Architectural Structures II | .3 |
| ARC 3682 Environmental Technology II | .4 |
| | 30 |

| Senior Year | Sem. Hrs. |
|----------------------------------------------|-------------|
| ARC 4319 Design Analysis | .3 |
| ARC 4341, 4342 Architectural Design 4.1, 4.2 | .10 |
| ARC 4562 Architectural Structures III | .3 |
| ARC 4683 Environmental Technology III | .4 |
| Architecture Elective (3000 - 4000) | .3 |
| Non-Architecture Elective (3000 - 4000) | .6 |
| | 29 |
| Total B.S. Architectural Studies | .120 |

| Fifth Year | Sem. Hrs. |
|--------------------------------------------|-------------|
| ARC 5286 Practice I | .3 |
| ARC 5288 Practice II | .3 |
| ARC 5352, 5353, Adv. Arch. Design 5.1, 5.2 | .12 |
| ARC 5910, Project Research | .3 |
| Architectural Elective (4000-6000 level) | .6 |
| Non-Architecture Elective (3000 - 4000) | .3 |
| | 30 |
| Total Bachelor of Architecture | .150 |

Course Descriptions

ARC 1211 The Building Arts (3) Introduction to architecture as a career and field of academic study. 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. Open to non-architecture students and fulfills Humanities requirement.

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 2201 Theory in Architecture (3) [Prereq: ENC 1102.] 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 students 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) 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 materi-

als, and quantitative methods of analysis and design of building assemblies and support systems.

ARC 2501 Architectural Structures I (3) [Prereq. ARC 2470, PHY 2053, MAC 2311.] This course covers structural concepts and principles of structural behavior. Included are the elements of statics and mechanics of material: concurrent and nonconcurrent 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 1211.] A critical exploration of the history and theory of architecture from antiquity through the end of the 13th century. 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 3058 Computer Applications in Architecture (3) [Prereq. Upper-division standing.] Introduces students to the use of digital media for architectural design through specific drawing and modeling applications. The computer as a concept, the computability of design, and computers as design/modeling tools are areas of emphasis. Generation, manipulation, and reproduction of two-dimensional and three-dimensional architectural models using digital media are stressed.

ARC 3207 Architectural History II (3) [Prereq. upper-division standing.] 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 3703 Architectural History III (3) [Prereq. ARC 3207.] An in-depth study of critical positions in 20th century architectural thought.

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.] 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. Upper-division standing.] Structural analysis and behavior. Determinate structural systems. Design of timber and steel elements.

ARC 3682 Environmental Technology II (4) [Prereq. Upper-division standing.] Mechanical systems: thermal comfort, indoor air quality, active and passive climate control approaches, energy utilization, fire protection, sanitation systems. Technical problems associated with providing quality environments for human habitation.

ARC 4319 Design Analysis (3) [Prereq. Upper-division standing.] 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 has 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 4562 Arch Structures III (3) [Prereq. ARC 3551.] Indeterminate structures and analysis and design of reinforced concrete elements and systems. Fundamentals of pre-stressed concrete, lateral forces, and resisting systems.

ARC 4683 Environmental Technology III (4) [Prereq. Upper-division standing.] Daylighting and electrical lighting, architectural acoustics, electrical and communications systems, and mechanized circulation systems. Technical problems associated with providing quality environments for human habitation.

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 in 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 5910 Project Research (3) [Prereq. Admission to the B.Arch. program.] Program development and exploration of design issues related to a terminal design project.

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.

Degrees Offered

The School of Business & Industry (SBI) offers the Bachelors of Science (BS) degree in Accounting and Business Administration. Business Administration degree candidates may also choose a concentration in Marketing or Finance. This section outlines the undergraduate programs of SBI. The School of Business and Industry also offers the Master of Business Administration (MBA).

General Requirements for Undergraduate Business Majors

The School of Business & Industry’s undergraduate learning goals include the following:

- Critical Thinking/Analytical Reasoning Skills
- Communication Skills
- Content/Discipline Knowledge and Skills
- Ethical Understanding and Reasoning Skills
- Multicultural and Diversity Understanding

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.)

Policies

1. Responsible, professional conduct is required of all SBI students.
2. Students must earn a minimum grade of C in all required courses.
3. SBI strictly enforces the University’s attendance policy.

Program Objectives

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.

Faculty

SBI Administration

Dean School of Business and Industry: Lydia McKinley-Floyd

Associate Dean: Charles Evans

Associate Dean for Administration: Alex Moore

Director, Division of Internship and Career Development: Doris Corbett

Area Coordinator, Dept. of Accounting and Finance: Ira Bates

Area Coordinator, Dept. of Management and Marketing: Daaim Shabazz

Area Coordinator, Dept. of Information Systems and Operations

Management: Paul Nkansah

Area Coordinator, Dept. of Professional Development: Vera Harper

Director, Center for Academic Support Services: Michael Campbell

SBI Faculty

Ashley, Clyde
Bates, Ira
Benjamin, Colin
Bowers, Jennifer
Bradford, Amos
Clark, George
Davis, Bobby
Drumming, Sandra
Etienne, Eisenhower
Evans, Charles
Finley-Hervey, Joycelyn
Friday-Stroud, Shawnta
Harper, Vera
Hightower, Roscoe
Holloman, Derek
Holmes, Andre
Islam, Mahzar
Mehta, Anju
Mehta, Nikhil
Motley, Carol
Murphy, Angela
Ngassam, Christopher

Nkansah, Paul
Nwabuzor, Augustine
Nwakanma, Hudson
Osagie, Johnston
Ravenell, William
Reeder, Craig
Ridley, A. Denis
Selby, Daniel
Shabazz, Daaim
Shariat, Mohammad
Shrestha, Nanda
Smith, Wilbur
Suarez-Brown, Tiki
Sutterfield, J. Scott
Swirsky, Steven
Sykes, Viceola
Thompkins, Abigail
Thompson, Forest
Tidwell-Lewis, Angel
Wang, Guan
Wilson, Richard
Wright, Richard

Undergraduate Programs Accounting and Business Administration

Bachelor of Science

Admission Requirements

Admissions requirements are determined by the School's undergraduate Committee on Recruitment, Admission, Retention, and Progression.

First-Time-In College students (FTIC) Admission: Priority will be given to those students who apply as freshmen who have attained a minimum 1,010 SAT score or 21 ACT score and who have an overall 3.0 GPA with "B" averages or better in each of the following subject areas: English, Math, and Science.

**For all SAT requirements, the score just consists of the Math and English scores.*

**For all ACT requirements, the score consists of the Math, English, Reading, & Science scores.*

Pre-Business Admissions Requirements for FTICs: Those students interested in business who meet the university's general admission standards, but have not attained the minimum 1010 SAT score or 21 ACT score required by SBI will be admitted as Pre-business majors.

Transfers: Consistent with the mission of Florida A&M University, students enrolled in other school or colleges within FAMU who meet SBI transfer requirements are welcomed to apply for admission into SBI. Students from other universities and community colleges are also encouraged to apply to SBI. The following requirements must be met by students seeking to transfer to SBI:

- Pre-Business
3.0 GPA and compliance with the SBI curriculum, including both courses in Math and English, Gordon Rule and CLAST requirements.
- School of General Studies
3.0 GPA and compliance with the SBI curriculum, including both courses in Math and English, Gordon Rule and CLAST requirements.
- College of Engineering, Pharmacy and other science disciplines
2.5 GPA, Gordon Rule and CLAST requirements.
- All other schools & colleges within FAMU
3.0 GPA, Gordon Rule and CLAST requirements.
- Other Universities & Colleges
The requirements listed above are applicable to transfers from universities other than FAMU.
- Florida Community College
Students who have received an AA degree following the business track from a Florida community college are accepted into SBI upon application. Applicants with an AA degree who did not choose the business track may be admitted but must take business core pre-requisites.

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 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 recom-

mendation for graduation of any student who does not conform to these expectations

Curriculum Requirements

Accounting Program

| Freshman Year | Sem. Hours |
|---------------------------------------------------|------------|
| ENC 1101/1102 Freshman Communication Skills | .6 |
| MAN 2812 Introduction to Business Systems | .3 |
| Math Option (see below) | .6 |
| WOH 1012 or 1022 World History | .3 |
| Science Electives (From Approved Listing) | .8 |
| HUM Electives (From Approve Listing) | .3 |
| Free Elective (Non-business course only) | .3 |
| | 32 |

Sophomore Year

| | |
|----------------------------------------------------------------|----|
| ACG 2021/2071 Financial/Managerial Accounting Principles | .6 |
| ECO 2013/2023 Principles of Economics I, II | .6 |
| STA 2023 Introduction to Probability and Statistics or | |
| QMB 3600 Quantitative Methods for Business Decisions I | .3 |
| AMH 2091 Introduction to Afro-American History | .3 |
| PSY 2012 Introduction to Psychology | .3 |
| Free Electives (Non-business course only) | .9 |
| | 30 |

Junior Year

| Junior Year | Sem. Hours |
|-----------------------------------------------------|------------|
| Writing Elective (From Approved Listing) | .3 |
| QMB 2102 Introduction to Quantitative Methods | .3 |
| ACG 3101/3111 Intermediate Accounting I, II | .6 |
| ACG 3361 Cost Accounting | .3 |
| MAN 3025 Principles of Management | .3 |
| MAR 3023 Principles of Marketing | .3 |
| ISM 3201 Data Base Management | .3 |
| GEB 3911/3912 Professional Development | .4 |
| | 28 |

Senior Year

| | |
|-------------------------------------------------------|----|
| ACG 3632 Auditing and Assurance Services | .3 |
| FIN 3403 Corporation Finance | .3 |
| BUL 4320 Commercial Law | .3 |
| MAN 4201 Organizational Behavior | .3 |
| MAN 4720 Business Policy | .3 |
| Finance Elective (Upper Level Course Only) | .3 |
| Accounting Electives (Upper Level Courses Only) | .9 |
| Free Elective | .3 |
| | 30 |

Total Semester Hours

120

Math Options:

- Option #1 MAC 1105 and MAC 2233
- Option #2 MAD 2120 and MAC 2233 or MAC 2311
- Option #3 MAC 2311 and MAC 2312
- *MAC 2311 can substitute for MAC 2233

Science Electives (8 hours): select from the following:

- AST 1002- - - - -Astronomy
- BSC 1005- - - - -Biological Science (recommended)

BSC 1010/1011- -General Biology I and II
 CHM 1015- - - -Fundamentals of Chemistry
 CHM 1030- - - -Introduction Chemistry for HealthScience
 CHM 1031- - - -Chemistry for Health Sciences
 CHM 1045/1046 -General Chemistry I and II
 PHY1004/1005- - Elements of Physics I and II
 PHY2048/2049- -General Physics I and II
 PSC 1121- - - - -Physical Science (recommended)

Humanities Electives (3 hours): select from approved University course listing:

NOTE: Consult general catalog for listing of approved courses.

Writing Elective (3 hours): select from the following:

ENC 2300- -Improving Writing Competency
 ENC 3210- -Technical Writing for Technology Students
 ENC 3243- -Technical Report Writing
 ENC 3251- -Professional Report Writing
 ENC 3320- -Advanced Composition
 OST 3337--Business Report Writing

Finance Elective (3 hours): select from the following:

FIN 4324- -Commercial Bank Administration
 FIN 4414- -Financial Management
 FIN 4504- -Investments

Accounting Electives (9 hours): select from the following:

ACG 3642- -Auditing II
 ACG 3861-- Petroleum Accounting
 ACG 4201- -Advanced Accounting
 ACG 4401- -Accounting Information Systems
 ACG 4501- -Governmental/Not-for-Profit Accounting
 ACG 4645- -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. Hours |
|-----------------------------------------------------------|------------|
| ENC 1101, 1102 Freshman Communication Skills | .6 |
| MAN 2812 Introduction to Business Systems | .3 |
| Math Option (see below) | .6 |
| WOH 1012 or 1022 World History | .3 |
| Science Electives (From Approved Listing) | .8 |
| HUM Electives (From Approved Listing) | .3 |
| <u>Free Elective (Non-business course only)</u> | <u>.3</u> |
| | 32 |

Sophomore Year

| | |
|--------------------------------------------------------------------|----|
| ACG 2021/2071 Financial/Managerial Accounting Principles | .6 |
| ECO 2013/2023 Principles of Economics I, II | .6 |
| STA 2023 Introduction to Probability and Statistics or | |
| QMB 3600 Quantitative Methods for Business Decisions I | .3 |
| QMB 2102 Introduction to Quantitative Methods | .3 |
| AMH 2091 Introduction to Afro-American History | .3 |

| | |
|------------------------------------------------------------|-----------|
| PSY 2012 Introduction to Psychology | .3 |
| Writing Elective (From Approved Listing) | .3 |
| <u>Free Electives (Non-business course only)</u> | <u>.3</u> |
| | 30 |

Junior Year

| | |
|--------------------------------------------------------------------|-----------|
| ACG 3101 Intermediate Accounting I | .3 |
| ACG 3111/3632/3361 Intern. Acct. II/Auditing/Cost Accting. | .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 |
| ISM 3201 Data Base Management | .3 |
| Business Elective Upper Level Course Only | .3 |
| <u>GEB 3911, 3912 Professional Development</u> | <u>.4</u> |
| | 28 |

Senior Year

| | |
|------------------------------------------------------|------------|
| MAN 4201 Organizational Behavior | .3 |
| MAN 4503 Production Management | .3 |
| MAN 4720 Business Policy | .3 |
| Free Elective (Non-business Course only) | .3 |
| Finance Elective (Upper Level Course Only) | .3 |
| <u>Business Electives</u> | <u>.12</u> |
| | 30 |

Total Semester Hours120

Math Option

Option #1 MAC 1105 and MAC 2233
 Option #2 MAD 2120 and MAC 2233 or MAC 2311
 Option #3 MAC 2311 and MAC 2312
 *MAC 2311 can substitute for MAC 2233

Science Electives (8 hours): select from the following:

AST 1002- - - - -Astronomy
 BSC 1005- - - - -Biological Science (recommended)
 BSC 1010/1011- -General Biology I and II
 CHM 1015- - - - -Fundamentals of Chemistry
 CHM 1030- - - - -Introduction Chemistry for Health Science
 CHM 1031- - - - -Chemistry for Health Sciences
 CHM 1045/1046 -General Chemistry I and II
 PHY1004/1005- - Elements of Physics I and II
 PHY2048/2049- -General Physics I and II
 PSC 1121- - - - -Physical Science (recommended)

Humanities Elective (3 hours): select from approved University course listing.

NOTE: Consult University catalog for listing of approved courses.

Writing Elective (3 hours): select from the following:

ENC 2300- -Improving Writing Competency
 ENC 3210- -Technical Writing for Technology Students
 ENC 3243- -Technical Report Writing
 ENC 3251- -Professional Report Writing
 ENC 3320- -Advanced Composition
 OST 3337-

-Business Report Writing

Finance Concentration: select four from the following in addition to required finance elective:

FIN 4324 -Commercial Bank Administration
 FIN 4414 -Financial Management
 FIN 4443 -Financial Policy and Strategy
 FIN 4504 -Investments
 FIN 4514 -Security Analysis and Portfolio Management
 FIN XXX - Venture Capital
 FIN XXX - Financial Risk Management and Derivative Securities

Marketing Concentration: select four from the following:

GEB 4310- - Introduction to Entrepreneurship
 MAR 3000- -Introduction to Professional Selling
 MAR 3403- -Sales Management
 MAR 4503- -Consumer Behavior
 MAR 4613- -Marketing Research
 MAR 4323- -Principles of Advertising
 MAR 4411- -Sports Marketing
 MAR 4461- -Purchasing and Supply Management
 MAR 4841- -Services Marketing
 MKA 2021- -Salesmanship

Course Descriptions

ACG 2021 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 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 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 Intermediate Accounting II (3) Prerequisite: ACG 3101 (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, ACG 3101. 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 3632 Auditing and Assurance Services (3) Prerequisite: ACG 3101. 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 3642 Auditing II (3)

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 and ISM 3201. 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 3111 or ACG 3112. 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 3632 or ACG 4642. An in-depth review of the activities that provides independent assurance and collaborative consulting services to an organization and other stakeholders.

ACG 4682 Forensic Accounting (3) Prerequisite: ACG 3632 or ACG 4642 and ACG 4401. Study of fraud investigation techniques and the accountant 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 4851L CPA Review Lab To review and complete assignments and receive individual attention on select topics.

ACG 4852 CPA Problems (3) Prerequisite: Permission of supervising professor. Review of materials covered on the Uniformed Certified Public Accountant Examination.

ACG 4852L CPA Problems Lab To review and complete assignments and receive individual attention on select topics.

ACG 4901 Directed Individual Study (Varies 1 to 6) Prerequisite: Permission of Area Coordinator and supervising professor: Independent study in accounting with appropriate supervision.

BUL 4130 Legal Environment of Business (3) Prerequisite: ACG 3101 or ACG 3102. 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 4320 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 business law with appropriate supervision.

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. 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. An examination of the financial policies of corporations with special emphasis on dividend policy, cost of capital, capitol 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: 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.

GEB 3911 Specialist Introduction to Professional Development (2) Prerequisite(s): School of Business and Industry Undergraduate Program majors, Junior standing or permission. 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. Structured activities and workshops designed to develop strong personal qualities and team skills required to achieve institutional objectives.

GEB 4310 Strategic Entrepreneurship Decision Making (3) Prerequisite(s): MAR 3023 and ACG 2071 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.

ISM 3201 Data Files & Database Management (3) Prerequisite(s): CGS 1160 or MAN 2812. 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 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.

ISM 4400 Decision Support Systems (3)

MAN 3025 Principles of Management (3) Prerequisite(s): 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 3600 International Business (3) Prerequisite(s): MAN 3025 and Junior standing. An interdisciplinary approach to analyze, understand, and resolve the problems that firms encounter as they conduct business across national boundaries in the global marketplace.

MAN 3605 Complete Culture of Business (3) MAN 3025 and Junior standing. In this course, emphasis is placed on exploring the importance of cross-cultural understanding for international business, geographical patterns of different cultures to understand cultural regions and landscapes, patterns of geographical diffusion of cultures and business expansion, how to interpret those patterns and their meanings as related to international business, cultural similarities and differences, and country-level cultural traits and trends with business implications. Students will prepare a series of country-level cultural profiles (portfolio) and prepare cultural maps to promote active and long-term learning.

MAN 3610 Dist World Resource/Business (3) Prerequisite(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 4060 Cybernetics Management (3)

MAN 4201 Organizational Behavior (3) Prerequisite(s): MAN 3025 or MAN 3027 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 4503 Production Management (3) Prerequisite(s): MAN 3025 and QMB 2102. 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 4570 Purchasing and Mat Management (3)

MAN 4720 Business Policy (3) Prerequisite(s): MAN 3025, MAR 3023, FIN 3403, ACG 3111 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 4810 Systems Theory and Design (3) Prerequisite(s): CGS 1160. The analysis and design of information systems for management decision-making.

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.

MAR 3000 Introduction to Professional Selling or 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

MAR 3023 Principles of Marketing (3) Prerequisite(s): 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)

MAR 3403 Sales Management (3) Prerequisite(s): MAR 3023 and MKA 2021 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): MAN 3025 and QMB 2102. 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 4841 Services Marketing (3) Prerequisite(s): MAC 2233, QMB 2102, and MAR 3023. Introduction to the highly abstract services marketing arena through a review of terminology, systems, techniques, and processes that differentiate the marketing of services from marketing physical goods. An upper level business elective.

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.

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.

QMB 2102 Quantitative Business Decisions (3) Prerequisite(s): STA 2023 or MAC 2233. Applications of statistical decision theory, linear programming, and other mathematical models used in business decision-making; extensive computer-based methods and analysis employed.

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.

TAX 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.

COMPLIMENTARY ISSUE FROM FLORIDA A&M UNIVERSITY

The McGraw-Hill Companies

BusinessWeek



**FLORIDA A&M UNIVERSITY SCHOOL OF BUSINESS & INDUSTRY:
A FORCE TO BE RECKONED WITH**



School of Business
and Industry
Florida A&M University

School of General Studies

In the School of General Studies, we believe that we can significantly improve the academic success of students, both new and returning, by first identifying their academic needs, by providing accessible, high quality academic support programs, and then by promoting student participation in these programs. We measure academic success along two dimensions, retention and progression. In this connection we will help students acquire academic staying power. Academic staying power is a student's ability to maintain better than a 2.0 G.P.A. while meeting his/her financial and other personal obligations. We will assist students in making the most expeditious progress toward graduation.

The School of General Studies, the academic home of students admitted into the University as undeclared majors, profile assessors, and exceptions, strives toward meeting the three major goals of the University: improved retention rates, progression rates, and graduation rates.

The School of General Studies, through its Center for Academic Advisement and Student Support, also assists students with making the most expeditious progress toward graduation through quality academic advisement and career exploration.

Because of the nature of the services offered in the School of General Studies, the School interfaces with all other colleges/schools at the University. It has the responsibility of implementing the Freshman/Sophomore Year Experience Program, facilitating and monitoring the general education sequence; providing SASS Degree Audits for all students; administering the College Level Academic Skills Test (CLAST); and providing support services.

A growing component of the School of General Studies is the Evening and Weekend College, designed to meet the rapidly expanding educational needs of non-traditional students through expanding course offerings in the evenings and on weekends.

The School of General Studies also has the responsibility of certifying that students have satisfied the requirements of the College Preparatory Program and of certifying candidates for the Associate of Arts Degree.

The School of General Studies has implemented the Freshman/Sophomore Year Experience Program to assist students with making a smooth transition from high school to college and the Academic Study Skills Center to strengthen students' skills in selected academic areas.

Faculty

Dean: Henderson, Dorothy F.

Assistant Dean: Cook, Willie C.

Associate Professors: Henderson, Dorothy; Powell, Deidre

Assistant Professors: Cook, Willie; Daniels, Della

Instructors: Gibson, Cindy; Hennessey, Helen

Advisors: Bellamy, Raymond; Graham, Willie; Hinson, Eric; Johnson, Vicki; MacFarlane, Darren; Matthews, Eugene; McCaskill, Johnny; Moore, Sandra; Okoh, Jacqueline; Trunnell, Misty; Ulee, Syndy; Williams, Costell; Williams, Ivey; Wright-Parker, Karen

The Undergraduate Experience Program (UEP)

The Undergraduate Experience Program offers a number of innovative initiatives that are put in place to involve everything from residence halls to special kinds of advising. Key components of the Freshman Year initiative include financial planning, the freshman lecture series, peer advising, and the Freshman Seminar program. The Undergraduate Experience Program is a simplified approach to promoting academic success and assisting students in making a smooth transition from high school to college. Except for the College of Pharmacy, all freshmen and sophomores are advised through the UEP.

The Center for Academic Advisement and Student Support

The Center for Academic Advisement and Student Support serves as the academic home for both undecided and undeclared students who have not explored their career options. The Center espouses the philosophy of a holistic approach in preparing students to advance in all fields of study. Services include advisement in the areas of academic course selection, reg-

istration and withdrawal, the College Preparatory Program (C-PREP), and the College Level Academic Skills Test (CLAST). Advisors in the Center also monitor student progression through the general education sequence and Gordon Rule requirements. Changes of major are also processed when students have selected majors and met departmental requirements. The Center for Academic Advisement and Support Services sponsors the college orientation course, which emphasizes the University's expectations of FAMU students, the history and traditions of the University, essential values, student/teacher relationships and time management. Additionally, the Center holds monthly meetings for undeclared majors to keep students abreast of state and University policies that affect their matriculation through and graduation from the University. Deans or their representatives from various schools and colleges at the University are invited to the monthly meetings to assist students with exploring career choices and career opportunities.

The Center for Academic Advisement and Student Support Services supports and participates in many university-wide activities, such as new student orientation, TOPS, the Quality Task Team on University-wide Academic Advisement, the Student Academic Support System (SASS), the University-wide Retention Program, and the University-wide Academic Support Program for athletes. The Center also develops and presents programs, workshops, and forums on academic advisement.

Office of Accountability Retention and Academic Progression Programs

The Office of Accountability, Retention and Academic Progression offers a number of initiatives and programs which are aimed at student retention, student achievement, and student academic support. Each program contributes to the retention goals of the University in increasing the graduation rates of Florida A&M University students. The overall objective is to improve retention and to increase graduation rates of Florida A&M University students. This office assesses the performance of the school in meeting its objective and strategic plan.

Center for Management Information and Support Services

The Center for Management Information and Support Services houses the Student Academic Support System (SASS) and the College Preparatory Program monitoring, both of which are state mandated. It is designed to improve academic advisement throughout the university. Thus, the academic advisement system is enhanced through the provision of Academic Advisement Module to undergraduate students. Academic Advisement Module is used by students and advisors to monitor progress toward graduation.

Center for Academic Assessment and Test Preparation Program/CLAST

As part of its effort to ensure that its students acquire the academic skills expected of them, the State of Florida established the College-Level Academic Skills Test (CLAST). The CLAST is designed to measure the achievement of communication and computation skills by students in the community colleges and state universities. The test consists of four parts: the essay, English Language Skills, reading, and mathematics. Students must meet CLAST requirements in order to receive an associate in arts degree or a baccalaureate degree and of all students who seek upper division status in a state university in Florida.

As of January 1, 1996, students are able to select other options to satisfy CLAST requirements. Students should refer to the CLAST section under Academic Affairs.

The Center for Academic Assessment and Test Preparation is primarily responsible for activities relating to the CLAST. However, the office also serves as a liaison to College Preparatory testing activities, the Undergraduate Experience, and the Learning Development and Evaluation Center. Although the primary responsibility of preparing for the CLAST does not reside in the Center for Academic Assessment and Test Preparation, the center assists with and participates in CLAST preparation

activities as requested.

The Center for Academic Assessment and Test Preparation, a team leader and coordinator of the CLAST Task force, works closely with other university offices to formulate effective ways of improving students' performance on the CLAST. Since student awareness of the requirements of the CLAST is very important, the CLAST Office presents workshops and forums to both students and faculty throughout the University. This office is also responsible for the administration of the College Preparatory State Exit Exam.

The Evening and Weekend College

The Evening and Weekend College (EWC) is administered through the School of General Studies. It provides excellent opportunities for working individuals to attend school in the evenings and on weekends in order to earn degrees, to obtain certificates, or to validate their professional credentials. The EWC functions as a major retention tool for the University. It provides opportunities for students to progress through their curricula while still working and taking care of other family and living responsibilities. The EWC serves the educational needs of non-traditional as well as traditional students who cannot, for various reasons, take classes during the regular daytime hours. The EWC serves as an acceleration vehicle for improving retention and increasing graduation rates.

Computer Technology Laboratory

The School of General Studies Computer Technology Laboratory is designed to improve the computer skills of students, faculty, and staff in the School of General Studies.

The SGS Technology Laboratory houses a microcomputer network composed of fifteen client computers. This network has connectivity to the Internet/World-Wide Web. This network supports the College Orientation courses by offering a variety of software. The technology laboratory is also used by faculty and staff for microcomputer-based staff development activities.

The College Preparatory Program

The College Preparatory Program (C-PREP) is a state mandated pre-collegiate program that is designed to improve eligible students' skills in English, reading and/or mathematics. Students who score below a specified score on the English, reading, and/or mathematics subtests of the ACT/EACT or the SAT/SATI are placed in the College Preparatory Program (C-PREP) upon their acceptance into the University.

The School of General Studies is responsible for monitoring and tracking students' enrollment and completion of the requirements of C-PREP, a University-wide program. SGS is also responsible for C-Prep instruction and submitting Annual College Preparatory Completion Reports to the Florida Board of Education.

Upon admission to the University, the Office for University Admission or the C-PREP coordinator places all potential C-PREP students who do not meet the minimum SAT/SATI and ACT/EACT requirements on C-PREP REGISTRATION (CP) HOLD.

For admissions beginning with the fall 2000 academic term, students who present scores on either the College Board's SAT-I or the American College Testing Program's Enhanced ACT test that meet or exceed the scores shown below may be exempted from taking the Florida College Entry-Level Placement Test at the option of the president of the community college or university:

| | Standard Score |
|----------------------------------------|----------------|
| SAT-I, The College Board | |
| Verbal | 440 |
| Mathematics | 440 |
| Enhanced ACT, American Testing Program | |
| Reading | 18 |
| English | 17 |
| Mathematics | 19 |

Upon arrival to the University, prior to registration, a student is administered the Florida College Entry-Level Placement Test in those areas in which the minimum scores are not met. The student is required to enroll only in C-PREP courses in the remediation area(s) failed. The student exempts C-PREP if all courses are passed.

If a student is retested prior to coming to FAMU and earns a higher ACT/EACT or SAT/SATI score, he/she must provide documentation to the Director of the University Testing Center and the Coordinator of the College Preparatory Program to update the student's status.

After the student has been tested and it is determined that remedia-

tion is needed in the area(s) of English, reading and/or mathematics, the C-PREP HOLD is "CLEARED". The C-PREP Coordinator clears the HOLD and the student is permitted to register for the required C-PREP classes. The student's academic advisor assists the student with registering for other courses in line with the C-PREP rules.

The C-PREP Instructor works with the student to help him/her develop the necessary skills to prepare for college level courses and the exit exam. The instructor evaluates the progress of the student and submits a passing/failing grade at the end of the semester. Students must pass both the course and the exit exam. Students failing a course or the exit examination must re-enroll in that course the next semester of enrollment.

The C-PREP Coordinator monitors the total C-PREP population, interfaces with key University areas involved in the C-PREP process, recommends the implementation of holds for students failing C-PREP courses and authorizes the Registrar's Office to permanently clear students who satisfy all C-PREP requirements.

A more complete detailing of Rule 6A-10.0315 FAC is found in this section of the catalogue.

The Associate in Arts Degree

The School of General Studies certifies the associate in arts degree to eligible applicants. "An associate in arts degree shall not be granted unless a student has successfully completed minimum requirements for the college-level communication and computation skills adopted by the State Board of Education and 60 academic semester hours or the equivalent within a degree program area, with 36 semester hours in general education courses in the areas of communication, mathematics, social sciences, humanities, and natural sciences, consistent with the general education requirements specified in the articulation agreement pursuant to s.240.115."

The School of General Studies Academic Study Skills Center

The School of General Studies Academic Study Skills Center provides one-on-one assistance in all general education academic areas. Special emphasis is placed on the areas of English, mathematics, and science. The primary goals of the laboratory are to assist the students with passing their respective classes and to assist students with passing the State College Preparatory Exit Examination and the College-Level Academic Skills Test (CLAST).

The Center also provides a site where students can receive instruction on improving study skills, and information on improving time management, note-taking, critical thinking, writing skills, test taking strategies, and critical reading skills.

The TRIO Academic Support Center

The objective of the TRIO Program is to increase the number of students who graduate from secondary school, enter and successfully complete postsecondary educational degrees.

The Upward Bound, Upward Bound Math & Science, Student Support Services and Talent Search Program (TRIO Programs) are consolidated programs funded by the U.S. Department of Education under the Office of Postsecondary Education and Office of Federal TRIO Programs. These programs form the base of the TRIO Academic Support Center.

- Programs in the TRIO Center are of three types:
 - college preparatory/outreach
 - college retention, and

In general, Upward Bound and Talent Search are college preparatory programs assisting high school or out-of-school students to prepare for and gain entry into postsecondary education. The Student Support Services Program is a retention program designed to increase retention of students already enrolled at the University, and the McNair program increases students' awareness of graduate/doctoral studies. The four programs work together to increase student enrollment in and successful completion of postsecondary education. Specifics of each of the programs follow.

Educational Talent Search

Educational Talent Search provides services designed to help participants enter postsecondary education. Middle and high school students and individuals that have dropped out of school are enrolled. Participants receive academic advisement, counseling, assistance with college entrance examinations, and the information and assistance with financial

aid. Saturday sessions on campus during the school year offer tutoring in math, assistance with study skills development, career exploration, and computer applications.

Student Support Services Program (SSS)

The Student Support Services Program is designed to supply supportive academic and personal service to a limited number of eligible students in order to assist them in graduating from FAMU. Past participants in other TRIO Programs are encouraged to participate in this program which recognizes the importance of individual needs and goals. Tutoring, as well as career, academic and personal counseling, is available to all participants. Financial Aid and CLAST Workshops are provided to assist students with their needs. Also, the TRIO Computer Lab is available for TRIO students only.

The TRIO/Student Support Services Orientation Program will coincide with TOPS (Total Orientation Program for Students). During this time, the Student Support Services staff will meet incoming freshmen and parents and explain the program's goals. New students and parents will tour the facilities of the program. The students will have time to ask questions and be advised for fall classes. The students will also register for their classes after taking care of any registration holds. Before leaving campus, all participants should understand all services and expectations of the TRIO/Student Support Services Program. Mrs. Linda C. Williams is the Program Director and Ms. Sonya Knight is the Program Counselor.

Upward Bound (UB)

The Upward Bound Program is designed to prepare its participants for postsecondary education. Upward Bound also provides its participants with an opportunity to gain the academic, cultural and social skills necessary for success in today's society. The participants range from ninth to twelfth grade students. Students are selected from high schools in the Big Bend Area. They attend courses in various academic areas such as communications, mathematics, reading, science and counseling.

Upward Bound Math and Science

The Upward Math and Science Program is designed to prepare and enroll its participants in postsecondary education. It also provides its students with academic, cultural and social development. The students chosen to participate are from Jackson, Franklin and Madison Counties. Each student must demonstrate an aptitude and/or interest in entering college degree programs in mathematics and/or science related disciplines. Each summer, the Institute focuses on strengthening the students' interests and abilities in mathematics and science. The program provides academic courses in algebra, pre-calculus, communications, biology, chemistry, computers, counseling, cultural and recreational electives.

6A - 10.0315 College Preparatory Testing, Placement, and Instruction

The College Preparatory Program is a state mandated pre-collegiate program that is designed to improve eligible students' skills in English, reading, and/or mathematics. Students who score below a specified score on the English, reading, and/or mathematics subtests of the ACT/EACT or the SAT/SATI are placed in the College Preparatory Program (C-PREP) upon their acceptance into the University. Placement is according to Rule 6A-10.0315 FAC. Selected sections of that rule are provided below.

6A - 10.0315 College Preparatory Testing, Placement, and Instruction

(1) For admission after October 1, 1991, for enrollment for the academic terms beginning January 1992 through July 31, 1995, first-time-in-college applicants for admission to community colleges and universities who apply to enter degree programs shall be tested for reading, writing, and mathematics proficiency prior to the completion of registration, using one (1) or more of the tests listed in this subsection, and shall enroll in college preparatory communication and computation instruction if the test scores are lower than those listed below.

Florida Statutes 239.301 (3)(c) and 240.117, require degree seeking FTIC students to complete college-prep coursework by the time they have accumulated 12 hours of lower-division college credit coursework.

(a) ACT Assessment, American College Testing Program.

| | |
|-------------|----|
| Composite | 14 |
| English | 15 |
| Mathematics | 13 |

(b) Enhanced ACT, American College Testing Program.

| | |
|-------------|----|
| Reading | 16 |
| English | 16 |
| Mathematics | 16 |

(c) SAT, The College Board.

| | |
|-------------|-----|
| Verbal | 340 |
| TSWE | 31 |
| Mathematics | 400 |

(d) SATI, The College Board administrations between March 1, 1994, and March 31, 1995

| | |
|-------------|------|
| Verbal | 340* |
| Mathematics | 400 |

Administrations after March 31, 1995

| | |
|-------------|------|
| Verbal | 420* |
| Mathematics | 440 |

*Students with scores below the cut score on the verbal sub-test of the SAT I shall be considered to have fallen below the cut score in both reading and writing for placement and reporting purposes.

(e) MAPS, The College Board.

| | |
|-----------------------|-----|
| Reading Comprehension | 13 |
| TSWE | 31 |
| Elementary Algebra | 209 |

(f) New MAPS, The College Board.

| | |
|--------------------------------|-----|
| Reading Comprehension | 109 |
| Conventions of Written English | 311 |
| Elementary Algebra | 613 |

(g) CPT, Computerized Placement Tests, The College Board.

| | |
|-----------------------|----|
| Reading Comprehension | 72 |
| Sentence Skills | 78 |
| Elementary Algebra | 51 |

(h) ASSEST, American College Testing Program.

| | |
|--------------------|----|
| Reading Skills | 22 |
| Language Usage | 43 |
| Elementary Algebra | 12 |

(i) New ASSEST, American College Testing Program

| | |
|--------------------|----|
| Reading Skills | 37 |
| Writing Skills | 37 |
| Elementary Algebra | 37 |

(2) For admissions beginning August 1, 1995, first-time-in-college applicants for admission to community colleges and universities who apply to enter degree programs shall be tested for reading, writing, and mathematics proficiency prior to the completion of registration, using the Florida College Entry-Level Placement Test. Students earning scores less than those listed below shall enroll in college preparatory communication and computation instruction:

| | |
|---------------------------|----|
| Standard Score | |
| (a) Reading Comprehension | 72 |
| (b) Sentence Skills | 78 |
| (c) Elementary Algebra | 51 |

(3) For admission beginning with the academic term in the Fall 1996, first-time-in-college applicants for admission to community colleges and universities who apply to enter degree programs shall be tested for reading, writing, and mathematics proficiency prior to the completion of registration, using Florida College Entry-Level Placement Test. Students earning scores less than those listed below shall enroll in college preparatory communication and computation instruction:

| | |
|---------------------------|----|
| Standard Score | |
| (a) Reading Comprehension | 83 |
| (b) Sentence Skills | 83 |
| (c) Elementary Algebra | 72 |

- (6) For admissions prior to the fall 2000 academic term, students who present scores on either the College Board's SAT-I or the American College Testing Program's Enhanced ACT test that meet or exceed the scores shown below may be exempted from taking the Florida College Entry-Level Placement Test at the option of the president of the community college or university:

| | Standard Score |
|--------------------------|----------------|
| SAT-I, The College Board | |
| Verbal | 420 |
| Mathematics | 440 |

| | |
|----------------------------------------|----|
| Enhanced ACT, American Testing Program | |
| Reading | 16 |
| English | 16 |
| Mathematics | 16 |

- (7) For admissions beginning with the fall 2000 academic term, students who present scores on either the College Board's SAT-I or the American College Testing Program's Enhanced ACT test that meet or exceed the scores shown below may be exempted from taking the Florida College Entry-Level Placement Test at the option of the president of the community college or university:

| | Standard Score |
|--------------------------|----------------|
| SAT-I, The College Board | |
| Verbal/Critical Reading | 440 |
| Mathematics | 440 |

| | |
|----------------------------------------|----|
| Enhanced ACT, American Testing Program | |
| Reading | 18 |
| English | 17 |
| Mathematics | 19 |

- (13) Nothing provided in Rule 6A-10.0315 (1), FAC., shall be construed to prevent the enrollment of a student in college preparatory instruction if the community college or university determines that such enrollment would enhance the student's opportunity for future academic success. The determination of enrollment would be made after counseling with the student and the analysis and consideration of other assessment techniques and measurements, which may include transcripts, grade evaluations, diagnostic, placement or psychological instruments, or other proven indicators or predictors of academic performance.

Students who are initially placed in college preparatory instruction and subsequent performance indicates the students have been misplaced may be moved into college level courses if they meet the requirements of Paragraph (19) (b) of this rule.

- (14) Students whose first language is not English may be placed in college preparatory instruction prior to the testing required herein, if such instruction is otherwise demonstrated as being necessary. Such students shall not be exempted from the testing required herein.
- (15) Test modifications and exemptions in Rule 6A-10.0311 (5), FAC., shall apply in the case of applicants with records of physiological disorders.
- (16) Institution affected by this rule shall accept test scores on any one of the test identified in Rule 6A-10.0315 (1), FAC. Individual student scores shall be valid for two (2) years.
- (17) During their first term, full-time students who are registered for at least twelve (12) credits, shall begin competency-based instruction based on the placement test results. Part-time students shall enroll prior to completing twelve (12) credits.
- (18) Students shall not enroll in more than three (3) attempts in each course to complete college preparatory instruction. Students who withdraw from a course under major extenuating circumstances may be granted an exception. Such exceptions require approval under guidelines established by the boards of trustees or the board of Regents. Students enrolled in English as a second language may be exempted from this limitation based on a plan submitted by the institution and approved by the Board of Regents or the State Board of Community Colleges for their respective institutions.
- (19) Uniform standards for completion of competency-based college

preparatory instruction shall correspond to those listed herein for placement credit instruction. Once competency has been certified, other public community colleges and universities shall accept the certification upon student transfer. Competence shall be certified upon:

- Successful completion of courses in which the competencies specified in Rule 6A-10.033 (1) (c) 1., FAC., are taught, and
- Passing a criterion-referenced assessment, which tests the competencies, specified in Rule 6A-10.033 (1) (c) 1., FAC.

- (20) Students enrolled in college preparatory instruction shall be permitted to take courses concurrently in other curriculum areas for which they are qualified. Pursuant to Section 240.117 (4), Florida Statutes, students who test into college preparatory instruction must successfully complete the required college preparatory studies by the time they have accumulated twelve hours of college credit coursework or they must maintain continuous enrollment in college preparatory coursework each semester until the requirements are completed while performing satisfactorily in degree earning coursework.

(a) College preparatory students may not enroll in the following categories of college credit courses while completing their college preparatory coursework:

- College preparatory students who are deficient in mathematics may not enroll in any mathematics courses that meet the requirements of 6A-10.030, FAC., or other courses that require mathematics skills that are beyond the skill level of the student.
- College preparatory students who are deficient in English and/or reading skills may not enroll in English or humanities courses that meet the requirements of Rule 6A-10.033 FAC., or other courses that require communication skills that are beyond the skill level of the student.
- College preparatory students who are deficient in all three (3) areas may enroll in college-level courses such as orientation courses, college success courses, or other courses that are not dependent on college-level computation and communication skills.

The School of General Studies is responsible for monitoring and tracking students' enrollment and completion of the requirements of C-PREP. It is also responsible for submitting Annual College Preparatory Reports to the Florida Board of Education.

If a student is retested prior to coming to FAMU earning a higher ACT or SAT score, documentation must be provided to the Office of Admissions and C-PREP coordinator to update the student's status.

The C-PREP process impacts each academic unit as it is a University-wide program. C-PREP students are primarily a part of each school and college. As students are tested, qualifying for C-PREP remediation, they must be enrolled in and pass the appropriate C-PREP courses listed below:

| | |
|----------|---------------------------------|
| ENC 0001 | College Preparatory English |
| REA 0001 | College Preparatory Reading |
| MAT 0024 | College Preparatory Mathematics |

A plan of action has been developed for each student participating in the C-PREP Program.

1. Upon admission to the University, the Office for University Admission or the C-PREP coordinator places all potential C-PREP students who do not meet the minimum SAT/SATI and ACT/EACT requirements on C-PREP REGISTRATION (CP) HOLD.

2. Upon arrival to the University, prior to registration, a student is administered the Florida College Entry-Level Placement Test in those areas in which the minimum scores are not met. The test is under the supervision of the University Testing Center. The student is required to enroll in C-PREP courses in the remediation area(s) failed. The student exempts C-PREP if he/she passes all tests.

3. After the student has been tested and it is determined that remediation is needed in the area(s) of English, reading and/or mathematics, the C-PREP HOLD is "CLEARED". The C-PREP Coordinator clears the HOLD and the student is permitted to register for the required C-PREP classes. Academic advisors assist students with registering for other courses in line with the C-PREP rules.

4. The C-PREP Instructor works with the student one-on-one, helping him/her to develop the necessary skills to prepare for college level courses and the exit exam. The instructor evaluates the progress of the student and submits a passing/failing grade at the end of the semester. Students

must pass both the course and the exit exam. Students failing a course must re-enroll in that course the next semester of enrollment.

5. The C-PREP Coordinator monitors the total C-PREP population, interfaces with key areas involved in the C-PREP process, recommends the implementation of holds for students failing C-PREP courses and authorizes the Registrar's Office to Permanently Clear those students satisfying all C-PREP requirements.

Students who have satisfied the C-PREP requirements at other Florida institutions must request that institution to provide appropriate documentation to the Office of Admissions and the C-PREP office.

NOTE: Students who do not test out of the C-Prep Program must enroll in the appropriate C-Prep course. Passing college-level courses in the student's area of weakness will not satisfy the C-Prep requirement.

Course Descriptions

ENC 1000 Introduction to Communication Skills (0) Provides students with lessons on communication skills that are essential for correct speaking and writing, i.e., mechanics, grammar, sentence structure, and paragraph development. Correlates with freshman English.

ENC 0001 College Preparatory English (3) A precollegiate course that focuses on mechanics of standard English and paragraph development to prepare students to pass the C-Prep exit test and the paragraph writing test. Students who meet C-Prep criteria are mandated to take this course.

MAT 0024 College Preparatory Mathematics (3) A precollegiate course that prepares students for college level mathematics and focuses on properties of real number, numbers systems, rational numbers, linear equations and inequalities, properties of exponents and radicals, functions and graphs, word problems.

REA 0001 College Preparatory Reading (3) Introduces and reinforces literal, inferential, and critical reading skills needed to become a proficient reader of college level textbooks and other related reading materials.

REA 1105 Reading Improvement (3) Provides a systematic approach to reading with emphasis on skills relative to vocabulary and comprehension improvement and on the efficient reading of college textbooks. Extensive evaluation and correction of reading difficulties are stressed.

REA 1505 Vocabulary Improvement (3) Emphasizes vocabulary improvement through the use of contextual clues and word structure as practical methods for unlocking meanings of unfamiliar words. Literal and implied meanings of words are examined to facilitate word choice and appropriate usage.

REA 1605 Study Skill Improvement (3) Focuses on effective study skills and systematic reading approaches designed to maximize the study and retention of materials presented in college level reading texts.

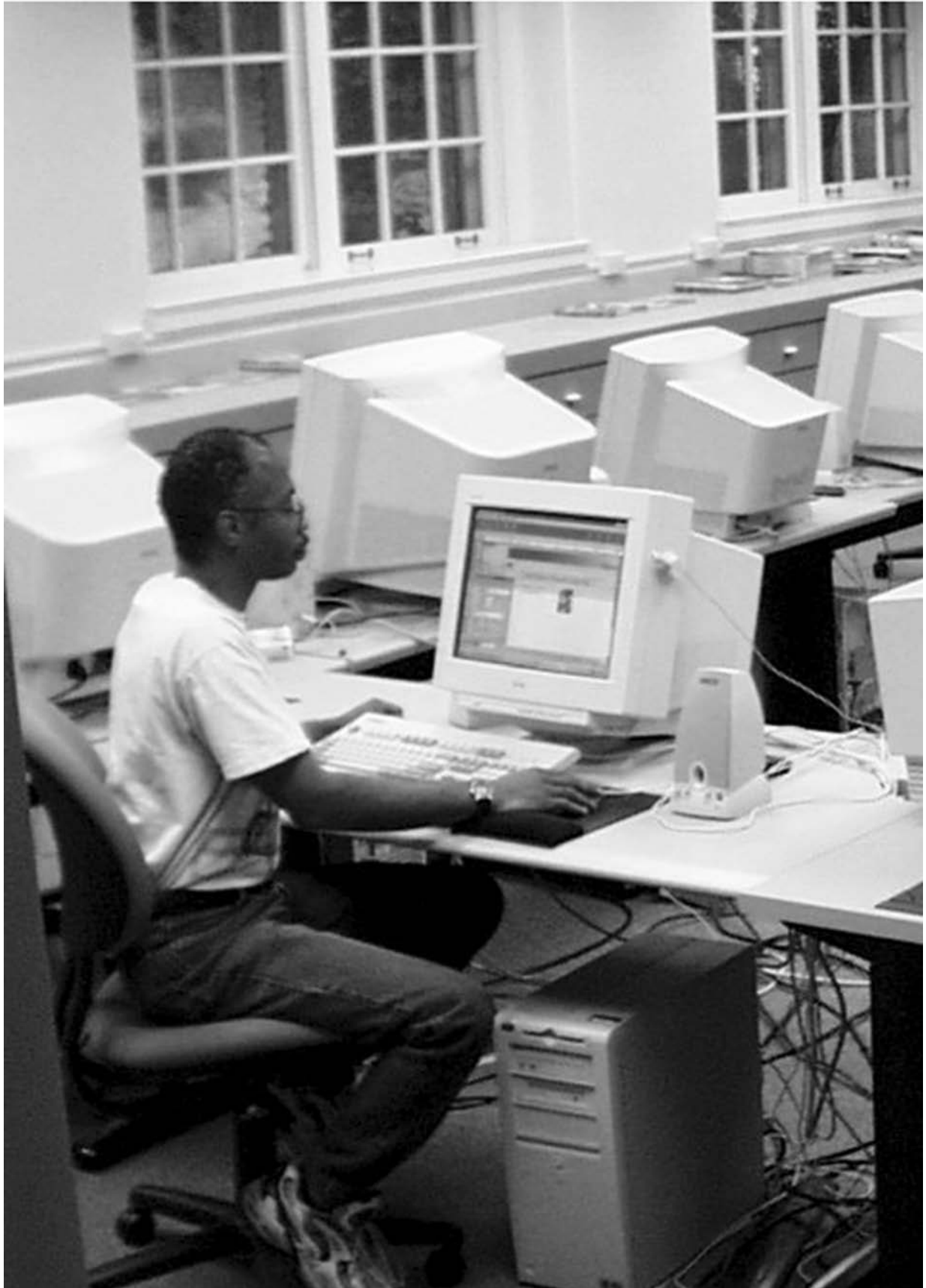
SLS 1101 College Orientation (2) Designed to assist students with adjustment to college and understanding the role and responsibility of a student in a university setting through career, academic, social, and personal counseling/advisement.

SLS 1201 Cultural Awareness (0) A course designed to provide relevant data regarding identity and self-concept of American Blacks and other minorities.

SLS 1321 Education and Career Planning (0) A course designed to assist enrollees in identifying careers and majors.

SLS 1501 College Survival (1) An orientation to procedures that provide retention-oriented skills and tips to students to assist them in coping with college environment.

SLS 1531 Orientation for Returning Students (0) Designed to identify needs related to academic progress and plans to assist students in meeting academic progression requirements.



School of Journalism & Graphic Communication

The School of Journalism & Graphic Communication (SJGC) is composed of the Division of Journalism and the Division of Graphic Communication.

The Division of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communications. The FAMU journalism degree program was the first journalism program in America to be accredited at a historically black university. The Division of Graphic Communication is accredited by the Accrediting Council for Collegiate Graphic Communications. The programs in the Division of Graphic Communication are unique among Florida's universities. It offers the only baccalaureate degree in graphic communication in the state.

The purpose of SJGC is to prepare qualified students for positions of responsibility in the media and in media-related occupations. In so doing, the school places heavy emphasis on the liberal arts as well as on professional courses.

SJGC is fortunate to have two eminent scholar professorial chairs. The Knight Chair in Journalism is a result of a gift of more than \$1 million from the Knight Foundation, Miami, and a \$750,000 match from the State of Florida. Efforts of this chair are directed toward professional development of journalism students. The \$1 million Garth C. Reeves, Sr. Chair, named for the Miami Times owner and FAMU alumnus, will not be permanently filled but will draw experts from industry and education to teach students for periods of three weeks to a semester or more. The chair alternates among instructional programs within the school's two divisions.

DIVISION OF JOURNALISM

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 (with concentrations in broadcast journalism, newspaper journalism and public magazine production), and the Bachelor of Science degree in public relations, and the Master of Science in journalism.

Faculty

Director: Bland, Dorothy
Knight Professor: Ritchie, Joseph E. II
Professors: Abrams, Michael E.; Bland, Dorothy; Donnellan, LaRae; Grow, Gerald O.; Hawkins, James E. (Dean); Workman, Gale A.; Ziegler, Dhyana
Assistant Professors: Kinchlow, Gina; White, Valerie
Associate Professors: Grable, Bettye; Jones, Kenneth;
Visiting Instructor: Jiles, William
Associate University Librarian: Woody, Gloria
Director, Recruitment and Retention: Hall, Dianne
Director, Office of Internship & Placement: Gordon, Yanela
Director, WANM-FM: Miles, Keith A.
Director, FAMU TV-20: Jones, Ernest

Admission Qualifications

A high school graduate interested in journalism studies at FAMU should apply for admission and indicate that 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 meet these criteria initially may enter the School of General Studies or choose another major temporarily. If after 30 semester hours, the student has at least a 2.5 overall GPA and "B" average

in FAMU freshman composition courses, he or she may seek the Division director's and dean's permission to change majors.

The regularly admitted journalism student will be considered a full fledged journalism major when he or she has demonstrated keyboarding proficiency and completed at least 30 hours of freshman course work, or equivalent, with an overall minimum GPA of 2.5 on a 4.0 scale. This includes a 2.5 average or better in freshman English composition courses or in acceptable alternatives approved by the division director.

All undergraduate transfer applicants 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 to be admitted to journalism. 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 take courses in beginning and intermediate keyboarding as soon as possible, unless keyboarding proficiency can be demonstrated to a journalism advisor. Students must be able to keyboard at least 40 words a minute with 85 percent accuracy. Some may also be required by advisors to take additional reading, speech, or composition courses.

Retention

All students admitted as journalism majors, having fulfilled the admission requirements outlined above, must maintain a 2.5 GPA in journalism and mass communication courses. A full-time student must complete a minimum of 12 credit hours of academic work per semester.

Once established as a journalism major, any student who falls below a 2.4 cumulative GPA and/or a 2.5 GPA in journalism and mass communication courses 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 division director conditional reinstatement, full reinstatement or to drop the student from the journalism program. In extreme cases, the division director may dismiss a student on his/her own authority.

Graduation

Students must earn at least 125 semester hours of credit, have at least a 2.4 cumulative GPA, and have a 2.5 GPA in journalism and closely related courses to qualify for graduation with a Bachelor of Science degree in journalism or a Bachelor of Science degree in public relations. Students can not graduate with these degrees unless their GPA meet or exceed these levels and all other requirements and all other requirements (regular or probationary) are met.

General Education Requirements (35 semester hours)

| | Sem. Hrs. |
|----------------------------------------------------------------------|-----------|
| Communicative Skills | 6 |
| Mathematics | 6 |
| Natural Sciences | 8 |
| Humanities | 6 |
| Social Sciences (one course must be AMH 2091 or AFA 3104*) | 6 |
| Speech | 3 |
| Total | 35 |

Liberal Arts Requirements (30 semester hours)

Recognizing the need for its students to receive a broad, well-rounded education, the Division of Journalism has developed a list of liberal arts courses, which all majors are required to take. Among such courses are principles of economics, logic, sociology, psychology, art appreciation and national, state, and local government. The Division also requires majors to

take courses to improve writing and speaking skills. Such courses are essential to 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 student's advisor or division director.

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 advisors.

Journalism Minor (18 Semester Hours)

Any FAMU student may minor in journalism by successfully completing 18 semester hours in journalism courses. Each student must complete 11 of the 18 required semester hours in the following journalism 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 journalism division director. Some prerequisites expected of journalism majors may be waived for journalism minors at the discretion of the division director. Students who minor in journalism will be expected to outline and discuss their minor programs with a journalism advisor before embarking on programs. Minors will be at some disadvantage if he/she does not type at least 40 words per minute with 85 percent accuracy. Minors must also be proficient in grammar and spelling.

Journalism Major

The journalism major requires a student to complete at least 80 hours outside of journalism, which includes a minimum of 65 hours in liberal arts and sciences. At least 39 semester hours in journalism are required for the journalism degree. All students must complete the core curriculum requirements and the requirements for one of the four sequences offered: broadcast journalism, newspaper journalism, magazine production, and public relations. In some cases, the division director may approve courses outside the program to supplement required courses.

Students are required to prepare quality resumes that are current from their first day as majors and to collect good samples of their work for portfolios. In addition, journalism students are expected to read the daily newspapers, weekly newsmagazines and online news sites regularly to keep abreast of current events. This is a cornerstone of successful journalistic practice, and such knowledge will be tested frequently by faculty.

SJGC and The Tallahassee Democrat have established a unique professional development program for junior and senior newspaper and magazine majors. Seniors are required to commit a minimum of 20 hours per week, for pay, with a designated editor and adjunct faculty member at the Democrat. A maximum of five students participate each semester, including the summer sessions. Purposes of the program are to: provide students additional newsroom experience; further develop student skills; and to provide opportunities for building a professional portfolio.

Students work as reporters, copy editors, photographers, designers, and production specialists. Journalism majors must complete JOU 4944 Publications Practicum, before enrolling in this program. Graphic Communication majors are also eligible for this program.

Capstone Projects

In the final 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 SJGC. Majors must pass the capstone project requirements to graduate.

All broadcast, newspaper, and magazine students must register for Colloquium during their final semester of study to get credit for the capstone project; public relations majors must register for the PR Practicum course to receive Capstone Project credit. Summer graduates must register for these courses in the spring because they are not offered during the summer sessions.

Transfer Credit

The Division of Journalism may accept a maximum of six semester hours of journalism credit from non-accredited journalism/mass communication programs and up to 12 hours from accredited programs at the discretion of the dean.

**Division of Journalism
Bachelor of Science Curriculum**

| Freshman Year | Sem. Hrs. |
|-----------------------------------------------------------|-----------|
| ENC 1101, 1102 Fresh Communicative Skills I, II | .6 |
| MGF 1106, MGF 1107 Liberal Arts Math I & II | .6 |
| HUM 2211 Humanities* | .3 |
| POS 2041 American National Government | .3 |
| AMH 2091 Intro to African-American History** | .3 |
| SPC 2600 Public Speaking | .3 |
| SYG 2000 Introduction to Sociology | .3 |
| WOH 1022 History of Civil II | .3 |
| | 30 |

* **Alternate: see alternate listing in University Catalogue**
 ** **Alternate: AFA 3104, The African-American Experience**

| Sophomore Year | Sem. Hrs. |
|----------------------------------------------------|-----------|
| JOU 2920 Journalism Colloquium | .1 |
| BSC 1005 Biological Science* w/Lab | .4 |
| PSC 1121 Physical Science w/Lab | .4 |
| GEO 3421 Cultural Geography | .3 |
| ECO 2012 Principles of Economics | .3 |
| JOU 1005 Language Skills for Journalists | .2 |
| JOU 3110 Use of Information Resources | .2 |
| MMC 2000 Intro to Mass Media | .3 |
| MMC 2100 Mass Media Methods | .3 |
| PSY 2012 Intro to Psychology | .3 |
| AMH 2010 U.S. History 1492-1865 ** | .3 |
| | 31 |

* **Alternate: AST 1002, Astronomy or CHM 1030/1030L, Introductory Chemistry for Non-Science Majors (with Lab)**
 ** **Alternate: AMH 2020, U.S. History 1865-Present**

Broadcast Journalism

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 | Sem. Hrs. |
|--------------------------------------------------|-----------|
| JOU 3101 Newswriting and Reporting | .3 |
| RTV 3001 Telecommunication Environment | .3 |
| RTV 3234 Broadcast Announcing | .3 |
| RTV 3304 Broadcast Newswriting | .3 |
| PHI 2101 Intro. to Logic | .3 |
| LIT 2110 Intro to Literature I* | .3 |
| POS 2112 State and Local Government | .3 |
| Minor | .6 |
| Free Electives | .6 |
| | 33 |

***Alternate: LIT 2120, Introduction to Literature II or AML 4604, Legacy of African-American Literature**

| Senior Year | Sem. Hrs. |
|-------------------------------------------------|-----------|
| JOU 4922 Journalism Colloquium (Capstone) | 1 |
| MMC 4200 Communication Law | 3 |
| MMC 4203 Media Ethics | 2 |
| RTV 3320 TV News | 3 |
| RTV 3322 Advanced TV News | 3 |
| RTV 3331 Specialized Reporting in TV | 3 |
| RTV 4941 Radio News Practicum | 1 |
| AML 3122 American Literature II* | 3 |
| ARH 3610 American Art ** | 3 |
| Minor | 6 |
| Free Electives | 3 |
| 31 | |

* Alternate: AML 4276 Afro-American Novel II

**Alternate: MUH 3116, Jazz History or
MUH 3212, History of Music

Newspaper Journalism

The newspaper journalism program is widely recognized for preparing qualified students in this exciting field. Students completing this sequence will be able to compete for positions as news reporters and copy editors, and they will have expertise in newspaper design.

| Junior Year | Sem. Hrs. |
|-----------------------------------------------|-----------|
| JOU 3101 Newswriting and Reporting | 3 |
| JOU 3223 Publication Editing and Design | 3 |
| JOU 3300 Feature Article Writing | 3 |
| PHI 2101 Introduction to Logic | 3 |
| LIT 2110 Intro to Literature I* | 3 |
| POS 2112 State and Local Government | 3 |
| PGY 2101 Basic Photography | 3 |
| Minor | 6 |
| Free Electives | 3 |
| 30 | |

*Alternate: LIT 2120, Introduction to Literature II or
AML 4604, Legacy of African-American Literature

| Senior Year | Sem. Hrs. |
|-------------------------------------------|-----------|
| JOU 4922 Journalism Colloquium | 1 |
| MMC 4200 Communication Law | 3 |
| MMC 4203 Media Ethics | 2 |
| JOU 4181 Public Affairs Reporting | 3 |
| JOU 4202 Advanced Newspaper Editing | 3 |
| JOU 4302 Editorial Writing* | 3 |
| JOU 4944 Publications Practicum | 1 |
| MMC 4930 Senior Seminar | 2 |
| AML 3122 American Literature II ** | 3 |
| ARH 3610 American Art + | 3 |
| Minor | 6 |
| Free Electives | 3 |
| Journalism Elective | 1 |
| 34 | |

*Alternate: JOU 4180, In-depth Reporting

**Alternate: AML 4276 Afro-American Novel II

*** Alternate: MUH 3116, Jazz History or
MUH 3212, History of Music

Magazine Production

Students completing the requirements for the magazine production program will have developed skills in writing stories for magazines as well as the skills needed to design magazines with desktop publishing expertise. Students also will have learned the business and organizational requirements needed in magazine production.

| Junior Year | Sem. Hrs. |
|--------------------------------------------------|-----------|
| JOU 3101 Newswriting and Reporting | 3 |
| JOU 3223 Publication Editing and Design | 3 |
| JOU 3308 Magazine Article Writing | 3 |
| JOU 3319 Principles of Magazine Journalism | 3 |
| PGY 2101 Basic Photography | 3 |
| PHI 2101 Intro. to Logic | 3 |
| LIT 2110 Intro. to Literature I* | 3 |
| POS 2112 State and Local Government | 3 |
| Minor | 6 |
| Free Elective | 3 |
| 33 | |

*Alternate: LIT 2120, Introduction to Literature II or
AML 4604, Legacy of African-American Literature

Senior Year

| | |
|-------------------------------------------------|---|
| JOU 4922 Journalism Colloquium (Capstone) | 1 |
| MMC 4200 Communication Law | 3 |
| MMC 4203 Media Ethics | 2 |
| MMC 4930 Senior Seminar | 2 |
| JOU 4212 Magazine Design and Layout | 3 |
| JOU 4181 Public Affairs Reporting* | 3 |
| JOU 4944 Publications Practicum | 1 |
| AML 3122 American Literature II ** | 3 |
| ARH 3610 American Art + | 3 |
| Minor | 6 |
| Free Electives | 3 |
| Journalism Elective | 1 |
| 31 | |

*Alternate: JOU 4180, In-depth Reporting

**Alternate: AML 4276 Afro-American Novel II

+ Alternate: MUH 3116, Jazz History or
MUH 3212, History of Music

Public Relations

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 and corporate public relations.

| Junior Year | Sem. Hrs. |
|-----------------------------------------------|-----------|
| JOU 3101 Newswriting and Reporting | 3 |
| JOU 3223 Publication Editing and Design | 3 |
| PUR 3000 Intro to Public Relations | 3 |
| PUR 3105 Public Relations Methods | 3 |
| RTV 3001 Telecommunication Environment | 3 |
| PGY 2101 Basic Photography | 3 |
| MAR 3023 Principles of Marketing | 3 |

PHI 2101 Intro. to Logic3
 LIT 2110 Intro. to Literature I* 3
 ENC 2300 Improving Writing Competency**(3)
 Minor6

 33

***Alternate: LIT 2120, Introduction to Literature II or
 AML 4604, Legacy of African-American Literature**
****Mandatory for students who earn below a 2.5 GPA in ENC 1101 and
 1102. Students must pass ENC 2300 with a “B” grade.**

Senior Year

JOU 4922 Journalism Colloquium (Capstone)1
 MMC 4200 Communication Law3
 MMC 4203 Media Ethics2
 PUR 4205 Corporate Communication Production3
 PUR 4801 Case Studies in Public Relations3
 PUR 4941 Public Relations Practicum1
 MAR 4323 Principles of Advertising3
 AML 3122 American Literature II*3
 ARH 3610 American Art **3
 POS 2112 State and Local Government3
 Minor 3
 Free Electives3

 31

***Alternate:AML 4276 Afro-American Novel II**

****Alternate: MUH 3116, Jazz History or
 MUH 3212, History of Music**

Other Requirements

Students must earn at least a “C” grade in all journalism core curriculum courses and respective sequence courses. No course can count toward more than one requirement of the Bachelor of Science in journalism degree.

Public relations majors must earn at least a “C” grade in the advertising, marketing, and basic photography courses. Newspaper and magazine majors must earn at least a “C” grade in basic photography.

Course Descriptions

COM 4105 Business and Technical Communications (3) Prereq: Junior standing. Advanced level course focusing on principles, techniques and procedures used in business and technical communications, i.e., technical writing, slide presentations and oral presentations.

COM 4302 Introduction to Communication Research (3) Prereq: Senior standing. Introduction to social science fact-finding techniques emphasizing sample selection, questionnaire design, interviewing, interpreting, and presenting results.

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 (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 3110 Use of Information Resources (2) Exercises in finding facts from various sources including libraries, directories, census data, public documents, computer files, surveys, and expert resource people.

JOU 3223 Publication Editing and Design (3) Prereq: JOU 3101. Principles and practice in editing material for print, writing headlines, designing the printed page. Use of computers in copy editing and page design. With lab.

JOU 3300 Feature Article Writing for Newspapers (3) Prereq: JOU 3101. Practice in the preparation and sale of feature stories for publication.

JOU 3308 Magazine Article Writing (3) Prereq: JOU 3101. Practice

in preparation and sale of articles to various magazines.

JOU 3319 Principles of Magazine Journalism (3) Prereq: JOU 3101, 3223 or permission. Introduction to magazine purpose, philosophy, marketing, content selection, layout, design, production, and circulation.

JOU 4108 – IN-DEPTH REPORTING (3) Prereq: JOU 3101. Investigative techniques for producing long-format news stories.

JOU 4181 Public Affairs Reporting (3) Prereq: JOU 3101. News gathering and presentation from government units, including public meetings and public records. With lab.

JOU 4202 Advanced Newspaper Editing (3) Prereq: JOU 3223. Practice in advanced techniques of newspaper copy editing, headline writing, use of art and graphics in page design. With lab.

JOU 4212 Magazine Design and Layout (3) Prereq: JOU 3223. Learning the principles of magazine design and layout, with actual practice on the campus laboratory publication. With lab.

JOU 4302 Editorial Writing (3) Prereq: JOU 3101. Practice in examining critical local, state, national and international issues by discussion, research, and writing editorials based on those analyses.

JOU 4801 Supervision of School Media (3) Prereq: MMC 2100, JOU 3101, JOU 3223. Guidelines and basic principles for teaching journalism at middle or high school level and/or supervising school media.

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 2100 Mass Media Methods (3) Prereq: Sophomore standing, JOU 1005, JOU 3110, ability to type 40 wpm with 85% accuracy. Introduction to basic writing techniques for the media. With lab.

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 4601 Black Media and America (2) Prereq: Junior standing. Study of black-oriented media in America with emphasis on historical background, role, impact, problems, and future in American society.

MMC 4602 Mass Media and the Public (3) Prereq: Junior standing. Investigations and analysis of the major themes and issues in mass media including such topics as media effects, media access, trends in mass media, and media in 21st century.

MMC 4930 Senior Seminar (2) Prereq: Junior standing and permission of division director. Students work as 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 in the Division of Journalism. Students work 20 hours per week and receive pay.

MMC 4945 Internship (1) Prereq: Permission of advisor and division director. Supervised field experience at a newspaper, magazine, broadcast station, PR agency or related organization. Students complete weekly journals and a report on the experience. Evaluation on S-U basis.

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 emerging practices. Application of PR to corporations, government agencies, and service organizations.

PUR 3105 Public Relations Methods (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 4801 Case Studies in Public Relations (3) Prereq: PUR 3000, PUR 3105. Study of case histories and communication campaigns in the public and private sectors, with emphasis on problem-solving and issues management.

PUR 4205 Corporate Communication Production (3) Prereq: Senior standing, JOU 3223, PUR 3105. Study of practice in public relations strategies used in corporations, including newsletters, issue statements, electronic news releases, and annual reports. 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.

RTV 3001 Telecommunication Environment (3) Prereq: Junior standing. An overview of the structure, issues, and policies relating to broad-

casting and the emergence of new technologies in telecommunication.

RTV 3234 Broadcast Announcing (3) Prereq: Junior Standing: JOU 3101, RTV 3304. Practical techniques for improving on-camera presentation.

RTV 3304 Broadcast Newswriting and Reporting (3) Prereq: JOU 3101. Writing and editing news copy for broadcast news operations against deadlines and using appropriate rules. Emphasis also given to legal and ethical constraints.

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.

RTV 3331 Specialized Reporting in TV (3) Prereq: RTV 3320. Practice in writing, reporting and producing specialized news stories including series reporting and mini-documentaries.

RTV 4941 Radio News Practicum (1) Prereq: RTV 3304. Students serve 10 hours per week as unpaid news and public affairs staff members of WANM-FM, the campus radio station. Students report, write, produce, and air newscasts.

DIVISION OF GRAPHIC COMMUNICATION

The Division of Graphic Communication offers a four-year curriculum leading to a Bachelor of Science degree in graphic communication or the Bachelor of Science degree in graphic design. The curriculum is designed primarily to prepare graduates for successful careers in graphic design, photography, print management, print technology, and allied industries. Focus is also given to students interested in teaching graphic communication in junior colleges and with certification at vocational/secondary schools. The impact of graphic communication upon modern business and industry will be important for students studying art, architectural engineering, technology, journalism, and other disciplines.

Faculty

Division of Graphic Communication

Director: Arvid Mukes (Associate Dean)

Professor: Todd Bertolaet, F. Todd; Blyden, Vincent A.; Mukes, Arvid V.; Wilder, Kay L.

Associate Professors: Ippolito, Joseph

Assistant Professor: Roberts, Rodney

Director, Recruitment and Retention: Hall, Diane

Associate University Librarian: Woody, Gloria

Director, Career Development Services: Gordon, Yanela

Retention

All students admitted as graphic communication majors having fulfilled the university admission requirements, must maintain a 2.5 GPA in all graphics and photography courses and earn a "C" grade in all graphic communication electives. A full-time student must complete a minimum of 12 credit hours of academic work per semester.

Once established as a graphic communication or graphic design major, any student who falls below a 2.0 GPA and/or a 2.5 GPA in graphic communication courses 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 division director conditional reinstatement, full reinstatement or to drop the student from the journalism program. In extreme cases, the division director may dismiss a student on his/her own authority.

Graduation

Students must earn at least 120 semester hours of credit, have at least a 2.4 cumulative GPA, and have a 2.5 GPA in graphic communication and closely related courses to qualify for graduation with a Bachelor of Science

degree in graphic communication or a Bachelor of Science degree in graphic design. Students can not graduate with these degrees unless their GPA meet or exceed these levels and all other requirements (regular or probationary) are met.

General Education Requirements

| Course | Sem. Hrs. |
|----------------------------|-----------|
| Communication Skills | .6 |
| Mathematics | .6 |
| Natural Sciences | .8 |
| Humanities | .6 |
| Social Sciences* | .6 |
| Speech | .3 |
| | 35 |

* One course must be AMH 2091

Secondary Emphasis Electives (7-12 semester hours)

Students can select courses from four areas: Print Management, Fine Art, Magazine Design, or Multi-Media. Required courses for all secondary emphasis areas are: GRA 1111 Basic Design Principles and GRA 1433 Basic Computer Operations.

Graphic Communication Minor (18 semester hours)

Any FAMU student may minor in graphic communication by successfully completing a minimum of 18 semester hours in graphic communication courses. All minors must receive approval from the Division Director.

Capstone Projects

In the final semester before graduation, students are required to present a Capstone Project to a panel of professors and graphic communication professionals. The project includes a portfolio of the students' work accumulated during their years in SJGC. Majors must pass the capstone project requirements to graduate.

All graphic design, photography, print management, and print technology students must register for the GRA 3935 Graphic Communication Seminar course during their final semester of study to get credit for the Capstone Project. This course is only offered in the fall and spring semesters.

Transfer Credit

The Division of Graphic Communication may accept a maximum of six semester hours of graphic communication credit from non-accredited graphics/graphic communication programs and up to 12 hours from accredited programs at the discretion of the dean.

Division of Graphic Communication Bachelor of Science Curriculum

| Freshman Year | Sem. Hrs. |
|--------------------------------------------------------------|-----------|
| ENC 1101, 1102 Fresh. Communicative Skills I,II | .6 |
| GRA 1920 Graphic Communication Colloquium | .1 |
| MGF 1106, MGF 1107 Liberal Arts Math I & II | .6 |
| AMH 3571 Afro-American History to 1865* | .3 |
| GRA 1333 Graphic Communication Materials and Processes | .3 |
| GRA 1111 Basic Graphic Design Principles | .3 |
| GRA 3215 Image Acquisition for Printing | .3 |
| PGY 2101 Basic Photography | .3 |
| | 28 |

*Alternate: AMH 3572, Afro-American History Since 1865

| Sophomore Year | Sem. Hrs. |
|-------------------------------------------------|-----------|
| GRA 2920 Graphic Communication Colloquium | .1 |
| SYG 2000 Introduction to Sociology | .3 |

| | |
|--------------------------------------------------------------|----|
| HUM 2211 Historical Survey I# | .6 |
| BSC 1005 Biological Science+ w/Lab | .4 |
| CHM 1030 Intro to Chemistry for Non Science Majors with Lab+ | .4 |
| SPC 2600 Public Speaking | .3 |
| GRA 2201 Electronic Prepress for Publishing I* | .3 |
| GRA 1433 Basic Computer Operation | .3 |
| GRA 2310 Press and Bindery Processes* | .3 |
| GRA 3521 Internet Publishing and Research | .3 |
| 33 | |

***In lieu of these courses, photography majors will substitute PGY 3105, Advanced Photography and PGY 3610 Photojournalism.**
**** In lieu of this course, graphic design majors will substitute GRA 2508, Color & Color Theory**

+Alternate: AST 1002, Astronomy or PSC 1121, Physical Science

Graphic design must take ARH 4410, Modern Art to fulfill 3 out of the 6 required humanities credit hours.

Photography

The photography curriculum is highly challenging and demanding, involving a wide variety of courses that will prepare the student for careers in photography as well as business—thus widening his/her career options. Studies and experiences in both technical and creative aspects of the discipline are involved.

Curriculum

| | |
|-------------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| GRA 3921 Graphic Communication Colloquium | .1 |
| PGY 3104 Creative Photography/Special Effects | .3 |
| PGY 3107 Architectural and Large Format Photo | .3 |
| PGY 3110 Color Photography | .3 |
| PGY 3201 Photographic Lighting Techniques | .3 |
| PGY 4111 Advanced Color Photography | .3 |
| ARH 2000 Art Appreciation* | .3 |
| PGY 3650 Documentary Photography | .3 |
| GRA 2801 Computer Graphics | .3 |
| GRA 3940 Industry Overview | .3 |
| GRA 3940 Internship (Optional - Summer Session) | .1-3 |
| 28 | |

*Alternate ARH 3610, American Art

| | |
|------------------------------------------------|-----------|
| Senior Year | Sem. Hrs. |
| GRA 3935 Graphic Communication Seminar | .3 |
| PGY 3220 Commercial Photography Seminar | .3 |
| PGY 4440 Special Problems in Photography | .3 |
| PGY 4471 Portfolio Projects I | .3 |
| PGY 4473 Portfolio Development I | .3 |
| PGY 4801 Electronic Still Photography | .3 |
| PGY 4802 Intermediate Electronic Photo Imaging | .3 |
| PGY 4810 Advanced Visual Media Concepts | .3 |
| GRA 2157 Computer Graphics for Designers | .3 |
| GRA 3128 Book Design and Production | .3 |
| GRA/PGY Secondary Emphasis Electives | .4 |
| 34 | |

Graphic Design

The graphic design curriculum emphasizes the visual impact of business and industrial communications through a wide variety of reproduction methods for newspapers, magazines, manuals, books, annual reports, product packaging displays, and other materials of considerable significance in today's society. Courses are designed to stimulate the student's

potential for creativity through self-expression in art and design.

| | |
|-------------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| GRA 3921 Graphic Communication Colloquium | .1 |
| GRA 1206 Typography | .3 |
| GRA 2508 Color and Color Theory | .3 |
| GRA 2801 Computer Graphics | .3 |
| GRA 3545, 3546 Graphic Design I, II | .6 |
| GRA 3118 Publication Design | .3 |
| GRA (Secondary Emphasis)* | .4 |
| GRA 3940 Internship (Optional - Summer Session) | (1-3) |
| PGY 3110 Color Photography | .3 |
| ARH 4410 Modern Art (humanities substitute) | (3) |
| GRA/PGY Secondary Emphasis Electives | .4 |
| 26 | |

*Must be selected with approval of advisor.

Senior Year

| | |
|-------------------------------------------|----|
| GRA 2157 Computer Graphics for Designers | .3 |
| GRA 3935 Graphic Communication Seminar | .3 |
| GRA 4119 Package Design | .3 |
| GRA 4941, 4942 Design Practicum I, II | .6 |
| GRA 3746 Applied Illustrations Techniques | .3 |
| PGY 4801 Electronic Still Photography | .3 |
| GRA 3185 Presentations | .3 |
| GRA 4531 Advanced Typography | .3 |
| PHI 4800 Aesthetics | .3 |
| PGY 4220 Commercial Photographing Seminar | .3 |
| 33 | |

Print Management

The print management curriculum is structured to prepare students for positions in the graphic communication industry, including: print plant manager, production planner, estimator, quality control specialist, production specialist, printing and allied industries salesman, or technical representative for manufacturers of industry equipment and/or products.

| | |
|-------------------------------------------------|-----------|
| Junior Year | Sem. Hrs. |
| GRA 3921 Graphic Communication Colloquium | .1 |
| GRA 2403 Estimating | .3 |
| GRA 3496 Purchasing and Supply Management | .3 |
| GRA3490 Industry Overview | .3 |
| GRA 3313 Flexographic Principles and Practices | .3 |
| GRA3497 Plant Layout and Planning | .3 |
| GRA 3700 Quality Control | .3 |
| GRA 3940 Internship (Optional - Summer Session) | (1-3) |
| ACG 2021 Financial Accounting Principles | .3 |
| ECO 2013 Principles of Economics | .3 |
| MAN 3025 Principles of Management | .3 |
| 28 | |

Senior Year

| | |
|-------------------------------------------------------|----|
| GRA 3921 Graphic Communication Seminar | .3 |
| GRA 3487 Graphic Communication Environment Management | .3 |
| GRA 4433 Print Production Management | .3 |
| GRA 4945 Printing Practicum | .3 |
| BUL 4130 Legal Environment of Business | .3 |
| ENC 3243 Technical Writing | .3 |
| MAN 4301 Personnel Management | .3 |

| | |
|--------------------------------------------|----|
| MAR 3023 Principles of Marketing | 3 |
| GRA/PGY Secondary Emphasis Electives | 7 |
| | 31 |

Printing Production Technology Track

The print production technology curriculum is structured to prepare students for positions in production, supervision, technical sales, quality control, etc. Emphasis is placed on the proper maintenance and care of equipment. Selected courses in management train the student for supervisory positions in a plant.

| Junior Year | Sem. Hrs. |
|-------------------------------------------------------|-----------|
| GRA 3921 Graphic Communication Colloquium | 1 |
| GRA 2321 Screen and Specialty Processes | 3 |
| GRA 2304 Color Separation | 3 |
| GRA 2311 Offset Presswork II | 3 |
| GRA 2403 Estimating | 3 |
| GRA 3202 Electronic Prepress for Publishing II | 3 |
| GRA 3490 Industry Overview | 3 |
| GRA 3313 Flexographic Principles and Practices | 3 |
| GRA 3128 Book Design and Production | 3 |
| ECO 2013 Principles of Economics | 3 |
| GRA 3940 Internship (Optional - Summer Session) | (1-3) |
| | 28 |

Senior Year

| | |
|-------------------------------------------------|----|
| GRA 3921 Graphic Communication Seminar | 3 |
| GRA 3496 Purchasing and Supply Management | 3 |
| GRA 4433 Print Production Management | 3 |
| GRA 4954 Technical Project | 6 |
| ENC 3243 Technical Writing | 3 |
| MAN 4301 Personnel Management | 3 |
| MAR 3023 Principles of Marketing | 3 |
| GRA/PGY Secondary Emphasis Electives | 10 |
| | 31 |

Other Requirements

Students must earn at least a "C" grade in all graphic communication core curriculum courses and respective sequence courses. No course may be counted toward more than one requirement of the Bachelor of Science in graphic communication degree or Bachelor of Science in graphic design degrees.

Course Descriptions

GRA 1111 Basic Graphic Design Principles (3) Program of major groundwork covering the broad scope of graphic communication and an overall view of the graphic design field. Subjects covered include: equipment, outline of the design process, studio skills and techniques, workshop and critique of work.

GRA 1206 Typography (3) Introduction to the origins of written communications, type, and the historical development of type classifications. Defines terminology of typography. Develops a critical awareness of legibility and readability. Includes introduction to page layout and grids. Projects, quizzes, class critiques and exams.

GRA 1333 Graphic Communication Materials and Processes (3) Printing processes, plant equipment, trade and professional relations, techniques, and positions in the industry. Labor and management relations and printing labor unions. Bindery operations and color theories.

GRA 1433 Basic Computer Operations (3) This is an introductory course for students wishing to follow a major involving graphic communications. The basic principles of computer hardware operations and current selected program application basics are presented as they apply to computer graphics, design and the publishing industry.

GRA 1920, 2920, 3921, 4922 Colloquium (0). Presentations by guest

speakers and faculty on various topics and issues as they relate to the graphic communication industry.

GRA 2157 Computer Graphics for Designers (3) A course in the use of computer graphics in the design profession. Through research, students create designs in business graphics, titling, animation and photography.

GRA 2201 Electronic Prepress for Publishing I (3) Prereq: GRA 1500 and consent of instructor. Introduction to the use of software and electronic devices for printing production and publishing. Capturing text and graphics; document formatting; image storage, transferring and retrieval. Image output formats and devices.

GRA 2310 Press and Bindery Processes (Offset Presswork I) (3) Principles and methods of offset presswork. Press operations, care of presses, and running ordinary jobs. Technical materials and methods. Bindery and finishing of product included.

GRA 2321 Screen and Specialty Processes (3) Prereq: Graphic communication major or consent of instructor. Basics of screen printing. Preparation of screens, stencil cutting, frame construction, and photographic screens and equipment. Reproduction on irregular shapes, decals, etc. Includes reproduction of other specialty processes.

GRA 2508 Color and Color Theory (3) Prereq: GRA 1543, junior standing or consent of instructor. Study of the use of color in everyday life. Subjects covered include: color theory and its history, physical properties of color, physiological aspects of color perception and their implications for the graphic designer. Application projects with critiques.

GRA 2573 Offset Camera Work (3) Prereq: GRA 1574. Manipulative skills of photography, making of chemicals, and making of line/halftone negatives and positives. Halftones. Techniques of stripping introduced.

GRA 2638 Offset Presswork II (3) Prereq: GRA 2635. Larger production jobs, including color and process color work.

GRA 2801 Computer Graphics (3) Prereq: GRA 1543 or permission of instructor. Explores the applications of skills learned in Presentations to the computer through the use of a variety of current software, preparation for the use of the computer as a design tool.

GRA 2935 Professional Development (3) Prereq: Sophomore standing or consent of instructor. Study to assist students to become aware, acquire, and demonstrate the interpersonal skills necessary to function effectively in the workplace.

GRA 3118 Publication Design (3) Prereq: GRA 1543. Concepts for preparing complete publications of various forms; use of materials and processes; typographic design and use of graphic elements.

GRA 3163 Introduction to Animation Process (3) The introduction of historical background and development of animation. The research and plan storyboard for animation. The creation of blueprint for action and dialog of feature-length story-board for animation. Storyboard will contain a number of segments with each done in the same artistic style and media.

GRA 3164 Computer Animation Modeling (3) Prereq: GRA 1530, 1543, 2801, and PGY 4235. The theory and concepts needed to understand three dimensional space and to construct 3D model are introduced. Major topics will relate to a variety of three dimensional concepts including: Three Dimensional Symmetry, Growth Systems, Three Dimensional Deformations, Definitions of Texture, Artists working in the Third and Fourth Dimensions.

GRA 3185 Presentations (3) Prereq: GRA 1530, 3545, PGY 2101 or permission of instructor. A visual approach to presenting imagery and graphic data. Students develop skills in scripting techniques, fundamentals of interpreting and plotting data, and preparing finished art for use in various presentation media.

GRA 3215 Image Acquisition for Printing (3) Basic equipment and materials orientation, photographic, chemistry, line photography, and basic stripping and platemaking.

GRA 3313 Flexographic Principles and Practicum (3) Introduces students to the flexographic printing process and new developments in flexography. Methods and techniques of flexographic presswork. Press operation, care of presses, and running of ordinary jobs.

GRA 3403 Estimating (3) Prereq: GRA 2705. Designed to give students a working knowledge of estimating in the printing industry. Involves the estimating of materials and labor relative to industry practices for production of a printed product. Emphasis on estimating, papers, ink, presswork, bindery, and finishing operations. Computer estimating.

GRA 3487 Graphic Communication Environmental Management (3) Prereq: Permission of instructor. Designed to make students aware of the problems that can be caused by the Graphic Communication Industry and to provide solutions to assist students in becoming environmentally responsible professionals.

GRA 3490 Industry Overview (Graphic Communication) (3) Prereq: Consent of instructor. Information regarding the printing and allied industries in detail, the technology (state of the art) involved, employment patterns, various careers, etc.

GRA 3496 Purchasing and Supply MGT (3) Prereq: Consent of Instructor. This course focuses on the analysis of the purchasing process, a review of purchasing activities, and identification of purchasing problems in modern businesses. Attention is given to the role of purchasing in the organization, supplier selection, negotiation, sourcing issues, inventory management, and quality concerns.

GRA 3521 Internet Publishing and Research (3) Deals with network and telecommunications from three basic perspectives. Primarily, the course addresses internet publishing-specifically world-wide-web publishing-from a technical perspective: the creation of documents and graphics for publication on the WWW; the utilization of the internet as a general research tool, and discipline-specific research.

GRA 3535 Electronic Prepress for Publishing II (3) Prereq: Successful completion of GRA 2534. Continuation of study of Electronic Prepress for Publishing. The introduction to Data Image Management: A critical prepress competency and Digital Preflighting for productivity.

GRA 3545 Graphic Design I (3) Prereq: GRA 1543 or permission of instructor. A lab course that concentrates on the exploration of graphic and typographic elements in two-dimensional space. Solving practical design problems with library research, thumbnail sketches, rough layouts and comprehensives to industry standards.

GRA 3546 Graphic Design II (3) Prereq: GRA 3545 or permission of instructor. A lab course that concentrates on multi-page and three dimensional designs. Continuation of stress on the design process, professional work habits, market research and problem solving.

GRA 3638 Offset Presswork II (3) Prereq: GRA 2635. Larger production jobs, including color and process color work.

GRA 3660 Book Production and Design (3) Prereq: Consent of instructor. Historical development of the book with special emphasis on the work of contemporary designers. Modern bindery methods, materials and design. Problems in book design, illustration, and binding.

GRA 3700 Quality Control (3) Prereq: GRA 1574. A course designed to give students a working knowledge of how to set up a quality control program and keep it operating. A look at practical approaches to building positive attitudes in employees, controlling the quality of raw materials, monitoring production procedures, establishing production tolerance levels, cutting waste and saving money.

GRA 3703 Plant Layout and Planning (3) Prereq: Consent of instructor. The layout of printing plants for reproduction efficiency and improved working conditions; organization and controls for efficient production flow. Covers energy and waste management; safety and governmental regulations; and long-range planning and expansion.

GRA 3746 Applied Illustration Techniques (3) Prereq: GRA 1543, 3545, or permission of instructor. Introduction to the range of graphic illustration media, from graphite pencil to computer assisted art. Emphasis is placed on media selection and the integration of the illustration into an overall design strategy.

GRA 3935 Graphic Communication 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 communication 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 3940 Graphic Internship (1-6) Prereq: Permission of adviser 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 student's major in the graphic communication field. Evaluation on S-U basis.

GRA 4119 Package Design (3) Prereq: GRA 1530, 3545 or permission of instructor. An introduction to the procedures and considerations for preparing packaging designs. Students examine the unique constraints of various forms of packaging, including point-of-purchase displays and sales promotional materials.

GRA 4433 Printing Production Management (3) Prereq: Senior standing/consent of instructor. Systematic approach to achieving an efficient production system in all areas of printing: production, material controls, and computer aided management will be covered. Analyzing and planning jobs for the most economical means of printing production. Production scheduling systems and production record keeping.

GRA 4531 Advanced Typography (3) Prereq: GRA 1530. Typography usage in design-composition and logo design, emphasizes matching type

and message to achieve sophisticated, professional results. Advanced type handling and display usage. Projects, quizzes, class critiques and exams.

GRA 4905 Directed Individual Study (V 1-6) Prereq: Consent of advisor, instructor and Graphic Communication senior standing. Students pursue an individual and/or group student of basic problems related to a select subject.

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 project that employ the full range of professional design skills. Portfolio building.

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.

GRA 4945 Printing Practicum (3) Prereq: Senior standing. Simulation of a printing company which includes an organizational structure representing management, sales, marketing, and promoting.

GRA 4954 Technical Project (3) Prereq: Senior standing. Research and presentation of an acceptable project (written or an exhibition of work) which focuses on technology.

PGY 2101 Basic Photography (3) Principles, properties, theories of light. Cameras: types, parts, advantages and disadvantages, handling techniques. Exposure. Films: Characteristics, types, black and white processing, printing, composition and special effects, and finishing techniques.

PGY 3104 Creative Photography/Special Effects (3) Prereq: PGY 2101. Provides an understanding of the techniques in silver and non-silver processes of photography.

PGY 3105 Advanced B/W Photography (3) Prereq: PGY 2101. Systemizing the approach to exposure, development and printing black and white photographic materials. An adjustable camera, tripod and handheld meter are required.

PGY 3107 Architectural and Large Format Photography (3) Prereq: PGY 2110, PGY 3105. Large format and view camera techniques. Correct use and application of large format and view cameras in architectural and general photography.

PGY 3110 Color Photography (3) Prereq: PGY 2101. Color theory and techniques. Introduction to color printing and color negative analysis.

PGY 3201 Photographic Lighting Techniques (3) Prereq: PGY 2101. Introduction to artificial and natural lighting techniques. Studio, tabletop, copy work and portraiture.

PGY 3610 Photojournalism (3) Prereq: PGY 2101. Visual presentation of facts and ideas with emphasis on effective news and feature photographs.

PGY 3650 Documentary Photography (3) Prereq: PGY 2101, Basic Photography & PGY 3110, Color Photography. The application of theories and techniques of visual examination concluding with a visual document of a specific subject or subjects.

PGY 4111 Advanced Color Photography (3) Prereq: PGY 2110. Color as a subject, as a medium, current materials and techniques, refinement of shooting and lab techniques.

PGY 4220 Commercial Photography Seminar (3) Prereq: PGY 3105, 3210. Introduction to commercial, illustrative, industrial and architectural photography. Theories and techniques applied using general and special purpose equipment.

PGY 4221 Advanced Commercial Photography (3) A continuation of PGY 3220 with emphasis on advanced problems in commercial, illustrative industrial and general studio photography.

PGY 4235 Multi-Media Production (3) Prereq: PGY 2101. Conception, scripting and production of multi-media and multi-image presentations.

PGY 4440 Special Problems in Photography (3) Prereq: PGY 3104 or consent of instructor. Advanced projects and techniques, special topics and problems, application of special, alternative and non-silver processes.

PGY 4471 Portfolio Projects I (3) Prereq: PGY 3105, 3107, 4111, senior standing and consent of instructor. Individual photography projects proposed by students and developed to portfolio form.

PGY 4472 Portfolio Projects II (3) Prereq: PGY 4471. A continuation of PGY 4471.

PGY 4473 Portfolio Development I (3) Prereq: PGY 3105, 3107, 4111, senior standing and consent of instructor. Photography portfolio and resume development with projects capitalizing on the student's specialty.

PGY 4801 Electronic Still Photography (3) Prereq: PGY 2101. Introduction to the uses and applications of electronic still imagery.

PGY 4802 Intermediate Electronic Imaging (3) Prereq: PGY 2101, PGY 4801. An intermediate course in the uses and applications of electronic photography and electronic imaging.

PGY 4810 Advanced Visual Media Concepts (3) Prereq: PGY 4801. Explores the application of mixing traditional media imagery with electronic still images through a variety of current computer software.

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.

For students in the Division of Journalism, the J.W. Snorgrass Memorial Fund (named after the late Associate Professor J. William Snorgrass who died in September 1987, shortly after being named co-winner of FAMU's teacher-of-the-year award) provides short-term low-interest loans of \$100 or less to students with fiscal emergencies related to their education. A similar loan fund for graphic communication students is administered by the Division of Graphic Communication.

Journalism and Graphic Communication Endowment Scholarships

The School of Journalism & Graphic Communication also administers a constantly growing scholarship endowment for students in journalism and graphic communication. The nearly half million dollar endowment provides several scholarships annually from interest earnings.

Donors include the Times Publishing Company, the Knight Foundation, the William Nelson Trust, the Arnold Foundation, the Scripps Howard Foundation, the Tampa Tribune, the Fort Lauderdale Sun-Sentinel, Palm Beach Newspapers, Inc., the Palm Beach County Chapter of the FAMU Alumni Association, the Florida Times-Union, the Daytona Beach News-Journal, the Thomas M. Kirbo and Irene B. Kirbo Charitable Foundation, the Dunspaugh-Dalton Foundation, Southern Bell, Cox Newspapers, the Orlando Sentinel/Florida Bar, the Panama City News-Herald/Florida Bar, Florida Public Radio/Florida Bar, WTVT/ Florida Bar, Whittle Communications, Cowles Charitable Trust, the Dow Jones Foundation, the Gannett Foundation, the New York Times Company Foundation, Eastman Kodak and E.I. duPont deNemours and Company.

Knight and Reeves Endowments

Other scholarships are part of the Knight and Reeves Chair endowments. Write or call the office of the dean for details.

Other Scholarships

Other scholarships are offered by the Florida Association of Broadcasters in honor of the late Governor LeRoy Collins to broadcast journalism upperclassmen. The Professional Golf Association (PGA) provides a \$3,000 renewable scholarship annually to a junior.

The St. Petersburg Times has established a \$5,000 internship/scholarship for a rising junior. The Fort Lauderdale Sun-Sentinel has established a \$2,500 internship/scholarship for newspaper journalism students.

Scholarships range in value from \$500 to \$1,500 a year and may not be transferred to other universities or to other colleges/schools within FAMU.

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 at:

School of Journalism & Graphic Communication
Office of the Dean
510 Orr Drive, Suite 4003
Tallahassee, Florida 32307-4800

School of Nursing

The Florida A&M University School of Nursing was founded in 1904 and became the first baccalaureate nursing program in the State of 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 National League for Nursing Accrediting Commission. The NLNAC's address and telephone number are 61 Broadway, New York, NY 10006, (212) 363-5555, Ext. 153.

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, and
- (3) Be responsive to the service needs of the community.

Upon completion of the undergraduate program, the graduate will be able to:

1. Utilize 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 adaptation as a basis for professional nursing practice in a variety of client systems.
3. Utilize the nursing process for promoting adaptation of humans along the health continuum and throughout the life span.
4. Collaborate with clients, families, communities, and health care providers to improve health care outcomes.
5. Function as a provider/coordinator of care, teacher, change agent, and client advocate in the delivery of nursing care.
6. Assume the role of knowledgeable consumer of nursing and related research to improve nursing care.
7. Accept responsibility and accountability for nursing practice decisions and actions as well as for professional growth.
8. Provide culturally sensitive nursing care.
9. Demonstrate leadership in planning, coordinating and evaluating nursing care to individuals, families, and communities in a variety of settings.

Faculty

Professors: Ballard-Ferguson, Doris E.; Earp, Jaibun K.; Graham, Mary E.

Associate Professors: Fennal, Mildred; Lawson, Delores B.; Marshall, Janet G.; Norman, Ruena W.

Assistant Professors: Baker, Janelle

Instructors: Bronson, Sevilla; Bryant, Brenda; Butler, Robin; Darity, Donna M.; Guthrie, David; Onubogu, Uloma D.; Phillips, Carswella; Wilder, Shawanna

Baccalaureate Degree:

The School of Nursing offers an upper division 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 junior college or another university.

Admission Requirements:

I. Lower Division: Pre-Professional

- A. Admission to the University is within the purview of the Office of Admissions.
- B. The length of time in the lower division will vary with the educational background of the student. The student must complete lower division (pre-professional) requirements before admission to the upper division (professional).

- C. Also see "Special Admissions" section for additional information.

Admission to Florida A&M University does not automatically admit one to the School of Nursing. The School, due to clinical limitations, has a selective admission policy, i.e., limited access.

II. Upper Division: Professional

Students seeking admission to the upper division must apply and be accepted to FAMU and satisfy all Gordon Rule and CLAST requirements.

- A. All applicants must meet the following requirements stated under the School of Nursing admission criteria:
 1. Obtain a minimum cumulative Grade Point Average of 2.5 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" in the required behavioral, social, and natural science courses.
 4. Submit a completed application and all other specified information by May 15 if applying for August admission; October 15 for January admission.
 5. Provide a black/white 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, immunization status, including MMR, Hepatitis B, varicella and tuberculosis skin test or chest X-ray.
- B. Prior to clinical, and upon request, undergo a Level II Background Check through the FDLE. In selected sites, agency clearance is required to gain clinical experiences.
- C. Prior to clinical, and upon request, undergo a local background check. In selected sites, agency clearance is required to gain clinical experiences.
- D. Prior to clinical, undergo a drug screen. In selected sites, agency clearance is required to gain clinical experiences.
- E. A personal interview may be required by the Admissions Committee.
- F. The School, due to clinical limitations, has a selective admission policy, i.e., limited access. 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 upper division.

III. After admission is granted to the upper division (and yearly thereafter), applicants will be asked to submit evidence of:

- A. A complete physical examination, including specific lab and diagnostic tests
- B. CPR certification
- C. Changes in health status

Progression, Retention, and Graduation:

Once a student has been admitted to the upper division, he or she will be expected to familiarize himself or herself with the progression, retention and graduation policies:

- I. All courses in the upper division must be completed with a grade of "C" or above. A proficiency examination must be passed with a grade of "C" (70) at the end of each professional nursing course, except NUR 4935 - Nursing Seminar. The proficiency examination in NUR 4935 must be passed with a grade of 75.
- II. GPA must remain at 2.00 or above.
- III. After two failures of a professional nursing course or courses,

- the student is permanently dismissed from the School of Nursing.
- IV. All prerequisite courses must be completed with a minimum of "C" before progression to the next course.
- V. The student may be requested to withdraw from the program by reason of poor academic performance and/or conduct unbecoming to a student, as described in the School of Nursing Academic Dishonesty Guidelines.
- VI. The School of Nursing adheres to general requirements and procedures of the University for graduation.

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 student wears the approved uniforms during clinical experiences. Approximate cost of the uniform is \$450, and the uniform is ordered after acceptance to the upper division. Liability insurance is provided by the University upon admission of student to the upper division.

A nursing student orders the school's pin during the last semester of the senior year. The cost is approximately fifty-three dollars (\$53.00).

Bachelor of Science in Nursing Curriculum Guide

| Freshman Year | Sem. Hrs. |
|------------------------------------------------------------------------------------------|-----------|
| ENC 1101, 1102 Freshman Communicative Skills I & II | 6 |
| MAC 1105, 1114 College Algebra/Trigonometric Functions | 6 |
| BSC 1010C/Lab General Biology | 4 |
| HUM 2211, 2230 Historical Survey I and II or other approved courses | 6 |
| *CHEM 1031C/Lab Chemistry for Health Sciences or approved substitute course | 4 |
| | 26 |

| Summer | Sem. Hrs. |
|------------------------------------------------------------------------------------|-----------|
| *PSY 2012 Introduction to Psychology or approved substitute course | 3 |
| *BSC 2093C/Lab Anatomy and Physiology I or approved substitute course | 4 |
| | 7 |

| Sophomore Year | Sem. Hrs. |
|--------------------------------------------------------------------------------------------------|-----------|
| *BSC 2094C/Lab Anatomy and Physiology II or approved substitute course | 4 |
| AMH 2091 Intro. to African-American History or AFA 3104 African-American Experience | 3 |
| *DEP 2004 Human Growth and Development or approved substitute course | 3 |
| *MCB 3010C/Lab Microbiology or approved substitute course | 4 |
| NUR 2075 Computers in Nursing or Courses with CIS, CGS, COP, CDA prefixes | 3 |
| *HUN 2401 Nutrition or approved substitute course | 3 |
| *SYG 2000 Intro. to Sociology or approved substitute course | 3 |
| *STA 2023 Intro. to Probability & Statistics I or approved substitute course | 3 |
| | 26 |

| Junior Year | Sem. Hrs. |
|-------------------------------------------------------------|-----------|
| <u>Semester I</u> | |
| 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 |

| | |
|--------------------------------------------------|----|
| <u>Semester II</u> | |
| NUR 3145 Pharmacology | 3 |
| NUR 3215 Nursing Process I | 3 |
| NUR 3215L Practicum: Nursing Process I | 3 |
| NUR 3165 Nursing Research | 3 |
| | 25 |

| Summer | Sem. Hrs. |
|----------------------------------------------------|-----------|
| <u>Summer III</u> | |
| NUR 3455 Nursing Process III | 3 |
| NUR 3455L Practicum: Nursing Process III | 3 |
| NUR 3355 Nursing Process II | 3 |
| NUR 3355L Practicum: Nursing Process II | 3 |
| | 12 |

| Senior Year | Sem. Hrs. |
|---------------------------------------------------|-----------|
| <u>Semester IV</u> | |
| 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 |

| | |
|------------------------------------------------------------------|----|
| <u>Semester V</u> | |
| 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 |
| | 24 |

| | |
|------------------------|------------|
| Total | 120 |
|------------------------|------------|

*** Common Course Pre-requisite**

B.S.N. Degree Program for Registered Nurses

The School of Nursing offers the graduate of diploma and associate degree nursing programs who are licensed in the State of Florida the opportunity to complete requirements for the baccalaureate degree in nursing. Contact the School of Nursing (Student Affairs) for additional information.

Course Descriptions

NUR 2075 Computers in Nursing (3) This course covers theories and concepts related to the application of computer technology in nursing. The major focus of the course is on computer application skills as applied to general education and areas that are crucial to providing computer support for nurses in the delivery of patient care. Hands-on experience is provided.

NUR 3825 Introduction to Professional Nursing (2) Prereq: All lower division 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 lower

division courses. Introduction to utilization of the nursing process to facilitate health promotion for individuals of all ages and families responding to stimuli.

NUR 3118L Practicum: Concepts of Health Promotion (2)

Prereq: All lower division courses. Introduces the utilization of the nursing process to facilitate health promotion for individuals of all ages and families 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 lower division courses. Provide 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 lower division courses. Provide 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 lower division courses. Focus 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. 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. 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. 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. Development of 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. Utilization of the nursing process to promote adaptation of 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 (3) Prereq: All first and second semester junior year courses. Utilization of the nursing process to promote adaptation of 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. 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 (3) Prereq: All first and second semester junior year courses. 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 4535 Nursing Process IV (3) Prereq: All junior year courses. Utilization of the nursing process to facilitate adaptation of individuals and their families experiencing emotional, psychiatric, and psychophysiological stimuli.

NUR 4535L Practicum: Nursing Process IV (3) Prereq: All junior

year courses. Utilization of the nursing process to facilitate adaptation of individuals and their families 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. 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. 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, long term care (extended care), and home health care agencies.

NUR 4635 Nursing Process VI (3) Prereq: All junior year courses and all first semester senior year courses. Utilization of the nursing process to facilitate adaptation of families and communities. 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. Utilization of the nursing process to facilitate adaptation of families and communities. 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 and first semester senior year courses. 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. The course 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. 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 hour period.

NUR 4935 Nursing Seminar (2) Prereq: All junior year courses and all first semester senior year courses. 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 successfully passed all other second semester senior year courses.



Environmental Sciences Institute

Background & Organization

The Environmental Sciences Institute (ESI) was established in 1995, and 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 allows 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 enables 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 Institute 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; the enlightenment of communities on environmental science issues; and the production of students uniquely prepared to address present and future environmental science concerns.

The Environmental Sciences Institute is an instructional and research unit within the Division of Academic Affairs. The Environmental Sciences Institute functions under the Director who coordinates and manages the activities of faculty and staff who are engaged in instruction, research, outreach, and environmental technology transfer. The Institute houses the Florida A&M Center for Technology Transfer, the National Oceanic and Atmospheric Administration's Environmental Cooperative Science Center and the Florida A&M Center for Environmental Equity and Justice.

In 1998, the Legislature provided funding for the establishment of the Center for Environmental Equity and Justice (CEE) 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 Sciences Center (ECSC) was established in 2001 by the National Oceanic Atmospheric Administration's Educational Partnership Program (EPP). ECSC is led by FAMU in collaboration with Creighton University, Delaware State University, Jackson State University, Morgan State University, Texas A&M University Corpus Christi, University of Miami and University of Nebraska at Lincoln. 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.

Programs and Degrees

The Environmental Sciences Institute offers programs in environmental sciences 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.

The 19 credit hour minor in environmental sciences, 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 Environmental Sciences Institute occupies approximately 7,000 sq ft. of space in the Frederick S. Humphries Science and Research Center. Instruments available to both faculty and students in this facility include GC/MS, HPLC, AA, UV-Visible Spectrophotometer, Advanced Imaging System, Solar Simulator, Capillary Electrophoresis, Total Organic Carbon Analyzer, flow cytometer, and a High-resolution Gamma-ray Spectrometer. The Institute also owns a four-wheel drive vehicle and a boat to aid in field studies. In addition, the institute 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.

Opportunities

External grants and contractual activities enable the Institute to offer competitive scholarships and fellowships that recognize and reward academic achievement, and meritorious performance. Students of the Institute are exposed to an array of research, internships, co-ops and other professional development experiences.

Faculty

Professors: Abazinge, Michael; Robinson, Larry; Hamilton, Franklin; Williams, Henry N.

Associate Professors: Essien, Frederic; Gragg, III, Richard D.; Johnson, Elijah; Cherrier, Jennifer

Assistant Professors: Chauhan, Ashvini; Owens, Marcia

Adjunct Professors: Jacobs, Leon; Stanhope, Andrine; Thomas, Michael

Bachelor of Science in Environmental Sciences

The Bachelor's 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 math, 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 & Colloq.* | 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 |
| <u>EVS 4007 Introduction to Environmental Sciences</u> | <u>3</u> |
| | 20 |

*One hour course offered in the fall and spring.

Undergraduate Curriculum

FRESHMAN YEAR

Sem. Hrs.

Fall Semester

| | |
|---------------------------------------------------|---|
| AMH 2091 Introduction 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 Forum & Colloq. | 1 |
| <u>MAC 2311 Calculus I**</u> | <u>4</u> |

15

Spring Semester
 BSC 1011C General Biology II w/Lab 4
 ENC 1102 Communicative Skills II 3

or

ENC 1122 Honors English II 3
 EVR 2920 Enviro. Sciences Forum & Colloquium 1
 MAC 2312 Calculus II 4
HUMANITIES ELECTIVE**** 3

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

CHM 1045 General Chemistry I w/Lab 4
 EVS 4007 Intro. To Environmental Science 3
 PHY 2048 General Physics 1 w/Lab 5
 PHY 2048A General Physics I Recitation (0)
SOCIAL SCIENCES ELECTIVE**** (Non-History) 3

15

Spring Semester

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

15

Summer Semester

EVR 3940 Internship 1-3

JUNIOR YEAR

Fall Semester

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

16

Spring Semester

CHM 2211 Organic Chemistry II W/Lab 4
 EVR 3028 Environmental Modeling Principles 3
 EVR 3327 Environmental Resources Economics 3
STA 2023 Intro. to Probability & Statistics I 3

13

SENIOR YEAR

Fall Semester

EVR 3235 Atmospheric Processes 3
 EVR 4804 Enviro. Toxicology & Human Health 3
 EVS 3395 Contaminant Hydrogeology 3

PCB 3033 Introduction to Ecology 3
CONCENTRATION AREA ELECTIVE 3

15

Spring Semester

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

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 from your area of concentration:

Environmental Toxicology/Risk Assessment

EVR 4143 Environmental Radiochemistry 3
 EVS 4810 Enviro. Toxicology & Human Health II 3
 EVR 4869 Enviro. Risk Analysis II 3
 EVS 3662 Principles of Contam. Assess. 3
 EVS 4636 Risk Communication 3

Environmental Monitoring and Instrumentation Concentration

EVR 4024C Marine Microbial Ecology W/Lab 4
 EVR 4027C Wetlands Preserv. & Restor. W/Lab 4
 EVR 4193C Environmental Monitoring W/Lab 4
 EVR 4215 Marine Pollution 3
 EVS 3024C Enviro. Instrum. & Analy Tech 4
 EVS 4025C Applied Microbial Processes W/Lab 4

Environmental Restoration/Waste Management Concentration

EVR 3823 Environmental Impacts 3
 EVR 4024 Marine Microbial Ecology W/Lab 4
 EVR 4027 Wetlands Preserv & Restor. W/Lab 4
 EVR 4143 Environmental Radiochemistry 3
 EVR 4215 Marine Pollution 3
 EVS 3024C Enviro. Instrum. & Analy Tech 4
 EVS 3654 Hazardous Waste Management 3
 EVS 3662 Prin of Contam. Assessment 3
 EVS 3672 Fundamentals of Bioremediation 3
 EVS 4025C Applied Microbial Processes W/Lab 4

Environmental Policy Concentration

EVR 4036 Environmental Equity & Justice 3
 EVS 4636 Risk Communication 3
 POS 4697 Environmental Law 3

Course Descriptions

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 incorporate 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) Discussion of environmental and resources policy issues and cost-benefit analysis.

EVR 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. 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.

EVR 4024 Marine Microbial Ecology and 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) Discussion of various local, state and federal laws on the environment and ethical dilemmas and moral issues.

EVR 4036 Environment Equity & Justice (3) Discussion and case studies of environmental problems that impact low income and minority communities.

EVR 4140 Environmental Chemistry w/Lab (4) An introductory course on the characteristics and environmental effects of chemical processes in air, water and soil.

EVR 4143 Environmental Radiochemistry (3) 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) Introduce students to the use and application of biochemical analytical tools used for monitoring. Also methodology and principles of sampling, analyzing and interpreting results related to the atmosphere.

EVR 4215 Marine Pollution (3) This course will give an overview 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) Lecture and practical aspects of communicating risk information to policy makers and the public.

EVR 4643 Environmental Policy and Risk Management (3) Policy institutions and policies related to environmental and health risks.

EVR 4804 Environmental Toxicology & Human Health (3) 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) 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) Introduce students to the use and applications of instruments for solving environmental problems.

EVS 3195 Soil and Groundwater Monitoring (3) Lecture and practical aspects of soil and water analysis.

EVS 3395 Contaminant Hydrogeology (3) 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) Discussion and study of methods of hazardous waste recovery and/or disposal.

EVS 3662 Principles of Contamination Assessment w/Lab (3) 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) Discussion and study of processes and applications of remediation technologies.

EVR 1001 Fundamentals of Environmental Science w/Lab (4) This course covers factors that affect human and ecological health. These factors include pollutants and extreme natural events such as hurricanes, flooding and earthquakes. Human practices that lead to unhealthy conditions for animals, plants, soils, the atmosphere and water will be covered.

EVR 3823 Environmental Impacts (3) 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. Formulation of environmental impact statements.

EVS 4007 Introduction to Environmental Science (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 4025C Applied Microbial Processes w/Lab (4) Survey of microbial ecology and how these processes pertain 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. 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) 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; 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 can not exceed three (3) credit hours.

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 that will be complemented by extensive skills training which includes an intensive three-year writing program and a clinical program. Students will be 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 plans to serve the Orlando community by educating lawyers and future leaders to understand the value of helping those in need. Through a clinical program, law students will provide pro bono legal services in Orlando while still in law school. In providing the legal services, law students will 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: Abrams, Robert; Bernier, Barbara; Bullock, Joan; Cooper, Markita; Jones, John Paul; Langston, Lundy; Levitt, Jeremy; Nunn, Kenneth; Saleem, Omar

Associate Professors: Broussard, Patricia; Cato, Rhoda; Dawson, Victoria; Henslee, William; Jones, Hastings; Reaves, Rhonda; Smith, Jennifer; Washington, Deleso

Assistant Professors: Boothe-Perry, Nicola; Cavazos, Ann Marie; Fineman, Jonathan; Houston, Crisarla; Moore, Karin; Ngov, Eang; Smith, Phyllis; Thompson, Robert

Instructors: Blevins, Timothy; Harper, John; Perez-Kudzma, Carmelisa

Interim Library Director: Poydras, Phebe

Admission Requirements and Procedures

The 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. For admission to the Part-time Evening program, preference will be given to applicants whose circumstances are such that they can pursue a legal education only on a part-time basis.

The following admission requirements apply to all applicants to the College of Law:

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. Upon admission, two copies of an official transcript confirming the conferral of the bachelor's degree must be submitted to the College of Law prior to the start of classes.
2. All applicants must submit a completed Application for Admission, along with a \$20 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 three (3) years from the test date. Applicants are encouraged to take the LSAT no later than December for admission the following fall semester.
4. All applicants must register for the Law School Data Assembly Service (LSDAS) and are responsible for making their own arrangements for submitting official transcripts of all undergraduate work to LSDAS for evaluation. LSDAS 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 LSDAS 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. Because it is presumed that Part-time Evening Program students will have full-time employment, the College of Law places greater weight on quantifiable achievement predictors for applicants to the Evening Program.

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 School Admission 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;
- 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:

1. Successfully complete at least three academic years of full-time study or at least four academic years of part-time study;
2. Successfully complete the program of study;
3. Successfully complete all required courses;
4. Successfully complete at least 90 semester credit hours of course work, 60 credits of which must have been completed at this law school;
5. Satisfy the residence requirement;
6. Satisfy the writing requirement;
7. Earn a cumulative grade point average of not less than 2.00; and,
8. Be approved by the College of Law faculty.

FULL-TIME PROGRAM

The Full-time Day Program students must successfully complete six semesters or three academic years for their degree requirements. Enrollment in the Day Program represents a commitment to the full-time study of law. Under American Bar Association accreditation standards, students enrolled as full-time students may not work in excess of twenty (20) hours per week.

Curriculum Guide**First Year**Fall Semester

| | |
|----------------------------|-----------|
| LAW 5000 Contracts I | .3 |
| LAW 5301 Civil Procedure I | .3 |
| LAW 5400 Property I | .3 |
| LAW 5700 Torts I | .3 |
| LAW 5792 Legal Methods I | .3 |
| | <u>15</u> |

Spring Semester

| | |
|-------------------------------|-----------|
| LAW 5301 Civil Procedure II | .3 |
| LAW 5700 Torts II | .2 |
| LAW 5400 Property II | .2 |
| LAW 5792 Legal Methods II | .2 |
| LAW 5000 Contracts II | .3 |
| LAW 5501 Constitutional Law I | .3 |
| | <u>15</u> |

Second YearFall Semester

| | |
|--------------------------------------|-----------|
| LAW 6062 Business Organization | .4 |
| LAW 5501 Constitutional Law II | .3 |
| LAW 6330 Evidence | .3 |
| LAW 6750 Professional Responsibility | .2 |
| LAW 5100 Criminal Law | .3 |
| | <u>15</u> |

Spring Semester

| | |
|-----------------------------------------|-----------|
| LAW 6035 Sales and Secured Transactions | .3 |
| LAW 6112 Criminal Procedure | .3 |
| LAW 6430 Estates and Trusts | .3 |
| Elective(s) | .1-7 |
| | <u>15</u> |

Third YearFall Semester

| | |
|---------------------------------------|-----------|
| LAW 6503 Florida Constitutional Law | .2 |
| LAW 6940 Clinical Program or Pro Bono | .0-12 |
| LAW 6710 Family Law | .3 |
| LAW 6303 Florida Practice | .2 |
| Elective(s) | .1-6 |
| | <u>15</u> |

Spring Semester

| | |
|-------------------------------------|-----------|
| LAW 6940 Clinical Program | .3 |
| LAW 6320 Remedies | .2 |
| LAW 6503 Florida Constitutional Law | .2 |
| Elective(s) | .1-7 |
| | <u>15</u> |

PART-TIME EVENING PROGRAM

The part-time evening program operates year-round. In addition to the fall and spring semesters, two five-week summer sessions are an essential part of the part-time evening program. Evening program students can complete their degree requirements in four years, consisting of eight semesters and three summers.

Curriculum Guide**First Year**Fall Semester

| | |
|----------------------------|----------|
| LAW 5000 Contracts I | .3 |
| LAW 5301 Civil Procedure I | .3 |
| LAW 5792 Legal Methods I | .3 |
| | <u>9</u> |

Spring Semester

| | |
|-----------------------------|----------|
| LAW 5000 Contracts II | .3 |
| LAW 5301 Civil Procedure II | .3 |
| LAW 5792 Legal Methods II | .2 |
| | <u>8</u> |

Summer (A) Semester

| | |
|-----------------------------------------|----------|
| LAW 5100 Criminal Law (10-week session) | .3 |
| LAW 6750 Professional Responsibility | .2 |
| | <u>5</u> |

Second YearFall Semester

| | |
|-------------------------------|----------|
| LAW 5400 Property I | .3 |
| LAW 5501 Constitutional Law I | .3 |
| LAW 5700 Torts I | .3 |
| | <u>9</u> |

Spring Semester

| | |
|--------------------------------|----------|
| LAW 5501 Constitutional Law II | .4 |
| LAW 5400 Property II | .2 |
| LAW 5700 Torts II | .2 |
| | <u>8</u> |

Summer Semester

| | |
|--------------------------------|----------|
| LAW 6062 Business Organization | .4 |
| Electives | .4 |
| | <u>8</u> |

Third YearFall Semester

| | |
|-----------------------------|----------|
| LAW 5301 Criminal Procedure | .3 |
| LAW 6430 Estates and Trust | .3 |
| LAW 6330 Evidence | .3 |
| | <u>9</u> |

Spring Semester

| | |
|-------------------------------------|----------|
| LAW 6503 Florida Constitutional Law | .2 |
| LAW 6303 Florida Practice | .2 |
| LAW 6051 Sales | .2 |
| Electives | .3 |
| | <u>9</u> |

Summer Semester

| | |
|---------------------|----------|
| LAW 6710 Family Law | .3 |
| Writing Requirement | .2 |
| Electives | .1-3 |
| | <u>8</u> |

Fourth YearFall Semester

| | |
|------------------------------|----------|
| Clinical Program or Pro Bono | .0-6 |
| Electives | .0-9 |
| | <u>9</u> |

Spring Semester

| | |
|------------------------------|----------|
| Clinical Program or Pro Bono | .0-6 |
| Elective(s) | .0-8 |
| | <u>8</u> |

Required Course Descriptions

LAW 5000 Contracts The 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.

LAW 5100 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.

LAW 5300 Civil Procedure An introduction to the organization of the federal and state court, 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.

LAW 5400 Property 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.

LAW 5501 Constitutional Law (Federal) 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.

LAW 5700 Torts 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.

LAW 5792, 5793 Legal Methods 1,2 A two-semester course, both parts required for graduation. Emphasis on writing legal memoranda, legal documents, case briefing and analysis.

LAW 6035 Sales and Secured Transactions Surveys the Uniform Commercial Code (UCC) in such areas as property interest, warranty and product liability, performance, remedies, rights of third parties, documentary transactions, negotiable instruments, assignee related rights, liability, banks and check collection process, wire transfers, perfection, priorities, default, security in bankruptcy.

LAW 6060 Business Organizations A study of the fundamentals of basic business associations including corporations, and the law of agency and partnership. Focus is on choice of business forms, formation of partnerships and corporation; rights, duties, and powers of agents, partners, shareholders, directors, and officers; closely held corporations; proxy regulation; derivative suits; dividends and stock redemptions and an introduction to the law of securities regulation.

LAW 6112 Criminal Procedure Introduction to basic criminal procedure from arrest through judicial review, with an emphasis is on the fourth, fifth, sixth, and fourteenth amendments to the United States Constitution and their impact on the constitutional rights of the accused.

LAW 6330 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.

LAW 6430 Estates and Trusts The course deals primarily with the disposition of family wealth including the passage of property from deceased to living persons for both intestate and testate succession; the rules governing the execution, revocation, and probate of wills; will substitutions, principles governing the modern trust, fiduciary powers, duties and liabilities.

LAW 6503 Florida Constitutional Law Analysis of selected provisions of the Florida Constitution, with emphasis on recent decisions of the Florida Supreme Court and analysis of current proposals for constitutional change.

LAW 6710 Family Law The law governing the definition, formation, maintenance and dissolution of the family. Topics include adoption, alimony, annulment, child custody, divorce, emancipation of minors, intra-family torts, legitimacy, marriage, paternity, pre-marital agreements, property division, tax implications of divorce, and procedure and jurisdiction in various types of causes of actions in domestic relations. Attention is given to common law, state law, and recent constitutional doctrine.

LAW 5750 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.

LAW 6791 Legal Bibliography This course identifies and describes the primary sources of law and their finding tools in print and electronic format. Students are instructed in the research strategies necessary to find

and update the law.

LAW 6303 Florida Practice A study of the unique aspects of Florida Law, including Florida Rules of Civil Procedure, the preparation of pleadings and materials for trial, the court system, legislative procedures, and the significance of Florida's integrated bar with an emphasis on professional responsibility. The course examines jurisdiction and process. The Rules of Florida civil procedure are reviewed in depth.

LAW 6940, 6932 Clinical Program A concurrent program of academic instruction and skills training designed to prepare the student for the practice of law. Students represent clients in civil and criminal proceedings under the supervision of practicing attorneys. The classroom component teaches lawyering skills of interviewing, counseling, discovery, negotiation, advocacy, and Florida practice. Students must have taken Evidence, Trial Practice and Professional Responsibility. All practice is in accord with Florida Student practice rules. Clinics may include: Bankruptcy, Civil, Criminal, Housing, Mediation, and Street Law.

Elective Courses

| | |
|----------------------------------------|-------------------|
| Accounting for Lawyers | Sports Law |
| Administrative Law | Theatre Law |
| Advanced | Travel Law |
| Advanced Torts: | Water Law |
| Dignitary and Economic Harms | Women and the Law |
| Advanced Trial Practice | |
| Agricultural Law | |
| Antitrust Law | |
| Bankruptcy | |
| Comparative Law | |
| Computer Crime Law Seminar | |
| Conflicts of Law | |
| Construction Law | |
| Consumer Law | |
| Copyrights, Patents and Trademarks | |
| Death Penalty Seminar | |
| Domestic Violence Workshop | |
| Education Law | |
| Elder Law | |
| Employment Law | |
| Entertainment Law | |
| Environmental Law | |
| Estate and Gift Taxation | |
| Estate Planning | |
| Federal Courts | |
| Federal Income Tax | |
| First Amendment | |
| Health Law | |
| Immigration Law | |
| Independent Research | |
| Insurance Law | |
| International Business Transaction | |
| International Human Rights | |
| International Law Internship | |
| International Tax | |
| Intellectual Property | |
| International Law | |
| Internet and Computer Law | |
| Interviewing, Counseling & Negotiation | |
| Juvenile Law | |
| Labor Law | |
| Law and Economics | |
| Law and Film | |
| Law and Literature | |
| Law and Politics of Africa | |
| Law and Religion | |
| Law Office Management | |
| Mediation Theory and Practice | |
| National Security Law | |
| Partnership Taxation | |
| Publicity Held Corporations | |
| Race and the Law | |
| Rights of Women | |
| Sales | |
| Scientific Evidence | |
| Securities Regulation | |

School of Graduate Studies and Research

The School of Graduate Studies and Research (SGSR) is one of the twelve major academic units of the University. The school has the principal responsibility of working in collaboration with the various schools, colleges and institutes to maintain, develop, coordinate, and monitor the policies and procedures that govern all graduate programs.

The Division of Graduate Studies was established in 1957 and was elevated to the School of Graduate Studies, Research and Continuing Education in 1987. Currently known as the School of Graduate Studies and Research, high priority is given to the development of sponsored research and the research interests of individual faculty members. Service provided to aid the development of research and other grant proposals includes technical assistance, dissemination of requests for proposals, and editorial consultation. In certain instances, grant proposals are developed and written by the School. Contact is maintained with private corporations and foundations, as well as local, state, and national governmental agencies in pursuit of support for its research programs.

Graduate study is available in nine schools and colleges and two institutes. Collectively, these entities offer 12 Doctoral degrees and 39 master's degree programs.

Graduate Student Admissions

The Graduate Student Admissions Office is located in the School of Graduate Studies. The admissions process is a coordinated effort between the School of Graduate Studies and the academic colleges, schools and institutes. The office provides an environment that is conducive to effectively aiding students in the submission of their admission information and assisting them in their transition to graduate school.

Fellowships, Assistantships and Grants

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 Thesis and Dissertation Incentive Awards, University Assistantships, University Fellowships and Scholarships, University Assistantship Tuition Waivers and the University Matriculation Waivers. SGSR has also received and administered over \$3,443,874 in Graduate Assistance in Areas of National Need (GAANN) for graduate fellowships and approximately \$1,069,500 in funds from NASA for doctoral fellowships. The Delores Auzenne Fellowship, which is a State of Florida funded Scholarship, is also 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 more than 40 participating universities located throughout the United States.

The GFSP affords FAMU students 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 African Americans 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 students motivated to pursue the Master's or Doctoral degrees in areas not offered at FAMU. Traditionally, FAMU students interested in the Feeder Program are required to have a 3.0 GPA and at least 30 semester hours. Since Spring 2004, in addition to the basic requirements, all applicants to the Feeder Programs must also attend a series of graduate school preparation and academic enrichment seminars and workshops before becoming a Feeder Scholar.

The National Name Exchange

In 2004, The School of Graduate Studies 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. Capped at 30 universities, membership includes such institutions as Harvard, Duke, Rutgers, University of Washington, University of California at San Diego and Berkeley, Ohio State, Princeton and Cornell. FAMU is the 29th member of the Exchange and ranks in the top five for adding students to the Exchange Registry.

Graduate Degree Programs

SCHOOL OF ALLIED HEALTH SCIENCES

- Master of Science in Physical Therapy (MPT)
- Master of Science in Health Administration (MSHA)
- Master of Science in Occupational Therapy (MSOT)

SCHOOL OF ARCHITECTURE

- Master of Architecture (M.Arch.)
- Master of Science in Architectural Studies (M.S.)
- Master of Landscape Architecture (MLA)

COLLEGE OF ARTS AND SCIENCES

- Master of Applied Social Science (MASS)
Concentrations
 - History
 - Political Science
 - Sociology
 - Psychology
 - Public Administration
 - Criminal Justice
- Master of Science in Biology (M.S.)
- Master of Science in Chemistry (M.S.)
- Master of Science in Computer Software Engineering (M.S.)
Concentrations
 - Real-Time Systems
 - Computer Science
 - Software Development
- Master of Science in Physics (M.S.)
- Master of Science in Psychology (M.S., Ed.S.)
Concentrations
 - School
 - Community
- Master of Social Work (MSW)
- Doctor of Philosophy in Physics (Ph.D.)

SCHOOL OF BUSINESS AND INDUSTRY

- Master of Business Administration (MBA)

COLLEGE OF EDUCATION

- NON THESIS OPTION
- Master of Education in Adult Education (M.Ed.)
- Master of Education in Business Education (M.Ed.)
- Master of Education in Counselor Education (M.Ed.)
- Master of Education in Educational Leadership (M.Ed.)
- Master of Education in Elementary Education (M.Ed.)
- Master of Education in Physical Education (M.Ed.)
Concentration
 - Sport & Leisure Management
- Master of Education in Technology Education (M.Ed.)
- Master of Education in Secondary Education (M.Ed.)
Concentrations
 - Biology

- History
- Chemistry
- Mathematics
- English
- Physics
- Science

THESIS REQUIRED

Master of Science in Adult Education (M.S.)

Master of Science in Business Education (M.S.)

Master of Science in Counselor Education (M.S.)

Master of Science in Educational Leadership (M.S.)

Master of Science in Elementary Education (M.S.)

Master of Science in Physical Education (M.S.)

Concentration

- Sports & Leisure Management

Master of Science in Technology Education (M.S.)

Master of Science in Secondary Education (M.S.)

Concentrations

- Biology
- History
- Chemistry
- Mathematics
- English
- Physics

Doctor of Philosophy in Educational Leadership (Ph.D.)

FAMU-FSU COLLEGE OF ENGINEERING

Master of Science in Chemical Engineering (M.S.)

Master of Science in Civil Engineering (M.S.)

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

Master of Science in Industrial Engineering (M.S.)

Concentration

- Engineering Management

Master of Science in Mechanical Engineering (M.S.)

Master of Science in Biomedical Engineering (M.S.)

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.)

Doctor of Philosophy in Biomedical Engineering (Ph.D.)

**COLLEGE OF ENGINEERING SCIENCES,
TECHNOLOGY AND AGRICULTURE**

Master of Science in Agricultural Sciences (M.S.)

Concentrations

- Agribusiness
- Entomology
- Plant Science
- Animal Science
- Food Science
- Engineering Technology
- International Programs

Doctor of Philosophy in Entomology (Ph.D.) In cooperation with the University of Florida

Concentrations

- Biological Control
- Aquatic Entomology

COLLEGE OF LAW

Juris Doctorate

ENVIRONMENTAL SCIENCES INSTITUTE

Master of Science in Environmental Sciences (M.S.)

Concentrations

- Environmental Restoration and Waste/Management
- Radiation Protection
- Environmental Biotechnology
- Marine & Estuarine Environments
- Environmental Policy & Management

Doctor of Philosophy in Environmental Sciences (Ph.D.)

Concentrations

- Environmental Chemistry
- Biomolecular Science

- Environmental Policy and Management
- Aquatic and Terrestrial Ecology

SCHOOL OF JOURNALISM AND GRAPHIC COMMUNICATION

Master of Science in Journalism (M.S.)

Professional Development Track and Academic Service Track

Concentrations

- Copy Editing
- Broadcast Journalism
- Newspaper Journalism

SCHOOL OF NURSING

Master of Science in Nursing (M.S.)

Concentration

- Adult/Gerontological Nursing

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Master of Science in Pharmaceutical Sciences (M.S.)

Concentrations

- Medicinal Chemistry
- Pharmacoeconomics
- Pharmacology & Toxicology
- Environmental Toxicology
- Pharmaceutics

Doctor of Philosophy in Pharmaceutical Sciences (Ph.D.)

Concentrations

- Medicinal Chemistry
- Environmental Toxicology
- Pharmacology & Toxicology
- Pharmaceutics

INSTITUTE OF PUBLIC HEALTH

Master of Public Health (MPH)

Concentrations

- Bio Statistics
- Environmental Occupational Health
- Health Education
- Health Management
- Epidemiology

Doctor of Philosophy (DrPh)

Concentrations

- Health Education
- Epidemiology

Graduate 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. The decision on whether credits earned by post-baccalaureate students can be applied toward a graduate degree at a later date is determined exclusively by the academic unit offering the degree sought. The unit's decision is not subject to appeal.

Admission to graduate study at Florida A&M University is in conformity with the uniform requirements that the Florida Board of Education has established for the entire State University System. Minimum requirements for admission to graduate study are:

- I. Take the GRE,
- II. A combined score of 1,000 on the Verbal and Quantitative sections of the Aptitude Test of the Graduate Record Examination, or A 3.00 (on a 4.00 scale) cumulative grade point average (GPA) covering the last ninety (90) quarter hours (or 60 semester hours) of undergraduate preparation, or
- III. Possession of a graduate degree from an accredited institution of higher education.

Applicants seeking admission to the Master of Business Administration program are required to make an acceptable score on the Graduate Management Admission Test (GMAT).

No more than 10 percent of the graduate students admitted for an academic year may be admitted as exceptions to the criteria above. These requirements also apply to all foreign students. Timely applications are

important. Students are urged to apply in the fall of their senior year. This time-line allows the evaluation and award process to begin by January of each academic year. Additional evaluation and award processes are conducted in March and May annually. However, late applications diminish opportunities for admission and financial awards.

Admission Application Fees

The Admission Application fee of \$20 must accompany the Non-FAMU Graduate application. The check or international money order must be made payable to Florida A&M University. The applicant should indicate his/her name, social security number and address on personal checks and international money orders.

Non-FAMU Graduate Admission

Non-FAMU applicants must complete the Graduate Admissions Application and forward it to the School of Graduate Studies, 400 Tucker Hall, Tallahassee, FL 32307. An official copy of the undergraduate transcript and Graduate Record Examination scores must be submitted to be considered for admission.

FAMU Graduate Admission

Admission procedures for FAMU graduates and former students follow the same procedures. FAMU graduates or any student who was officially admitted and attended FAMU for at least one term must complete the Re-Admission Application. The following is also required:

1. The student must complete the graduate re-admission application and mail to the School of Graduate Studies and Research, 400 Tucker Hall, Tallahassee, FL 32307.
2. The transcript will be retrieved from the University's files for FAMU students. The applicant will not have to request a transcript.
3. If the applicant previously attended FAMU but graduated from another institution, the applicant will be required to request that an official transcript be forwarded to the School of Graduate Studies and Research.
4. FAMU graduates and former students are not required to pay the \$20 application fee.

Formerly Admitted Graduate Students

Any student who was admitted to a program, attended the University for at least one semester, and has not enrolled for two consecutive terms will need to complete the Re-admission Application. Follow the admissions procedures for the FAMU Graduate Admissions.

International Students

FAMU encourages international students with superior scholastic records, adequate English proficiency, and an earned bachelor's degree from a recognized college or university to apply for admission to a designated program in the School of Graduate Studies and Research. Such students must have a grade point average of 3.0 or above at the undergraduate level or the equivalent, as determined by the Admissions Office. Other admission requirements are listed in the descriptions of each of the degree programs offered by the University.

Although international students must show sufficient financial resources to complete a program prior to admission, financial assistance may be given to students who are invited to enroll on the basis of academic performance, promise, leadership qualities, and special talents. This is based upon the recommendation of the graduate admissions committee of the school or area offering the degree and the approval of the dean of graduate studies.

Transfer Students

Students transferring from another institution must be in good academic standing at the previous institution and eligible to return.

Post-Baccalaureate Non-Degree Students

A person who holds a bona fide baccalaureate degree but who is not officially admitted to or approved for graduate study may be permitted to take a limited number of graduate courses for teacher certification, re-certification, or other special interests or needs. Successful completion of such post-baccalaureate coursework shall have no affirmative bearing on the

student's admissibility to graduate study, and may, or may not, at the discretion of the appropriate officials of the University, be used for graduate degree credit when/if such student subsequently gains admission to graduate study.

Admission of Special Students

A person who does not have the required 3.00 GPA or GRE scores for unqualified admission to graduate study may be admitted to graduate degree study, pending achievement of a satisfactory GRE score within one semester of admission date. Such special students shall be limited to 12 semester hours of coursework until they are fully admitted without qualification. Course credits exceeding the 12-hour limit by the student in the "special" admission category will not be accepted for degree credit. Special students are not eligible for financial assistance.

Transfer of Credit

At the discretion of the appropriate academic unit, a maximum of six (6) semester hours of graduate coursework may be accepted by the University at the master's level. The maximum permissible transfer credits at the Ph.D. level is twelve (12) semester hours. In both of the above instances, credit transfers must be from bona fide, properly accredited colleges and universities.

Time Limitation for Completion of Degrees

A maximum of five (5) years and seven (7) years is permitted for the completion of master's and Ph.D. degrees, respectively. Students exceeding these time limits from first matriculation to graduation may be required to initiate new courses of study.

Grading Policy

Grading Policy for Graduate Degree Students

1. **Minimum grade requirements for all graduate programs and degrees**
 - a. A cumulative GPA of 3.00 must be maintained regardless of course/credit hour load.
 - b. Only a grade of "B" or higher is acceptable for required courses. A required course must be repeated if a grade lower than a "B" is received. For all other courses the grade of "C" or better is acceptable.
 - c. A grade of "U" in any phase of the thesis/research/dissertation process shall require the student to be placed on probation for one semester. A second "U" grade in the thesis/research/dissertation process may warrant termination of the student's degree-seeking status.
 - d. The student's chief advisor is responsible for informing the student of grade requirements and the need to adhere to the grading standards.
2. **Appeals of grade assignments**
 - a. All appeals regarding grade assignments must be made on an individual basis.
 - b. Each appeal must have formal, documented approval of the graduate faculty of the college, school, or institute in which the student is studying.
 - c. All appeals must be made to the Graduate Council within one month after the grade variance from established policy has occurred.
 - d. A two-thirds (2/3) affirmative vote of the entire voting membership of the Graduate Council shall be required to make a grade exception.
 - e. Grade appeals may be made by a student's chief advisor or any voting member of the Graduate Council from the student's school or college.
 - f. No graduate student, regardless of degree sought, or time in study, shall be permitted to appeal directly, or in person to the Graduate Council regarding his or her grade(s).
 - g. Grade appeals may be made orally, but must be accompanied by a written statement which outlines the appeal facts and justifications and produced in sufficient quantity for the entire Graduate Council membership.
3. **More restrictive grading policies by individual schools or colleges or programs**

- a. More restrictive grading policies by individual schools, colleges, institutes or programs must have prior approval of the Graduate Council before their establishment.
 - b. A two-thirds (2/3) vote by the voting membership of the Graduate Council is required for the approval of more restrictive grading policies.
- 4. Grades and Financial Aid**
- a. Each graduate student who receives any form of financial aid must earn the grades and maintain the GPA stipulated above while carrying a full load of credit hours.
 - b. It is the responsibility of each respective school or college, via its graduate officer or student advisor, to monitor each graduate student's credit hour load, grades, grade point average (GPA), and overall progress toward the degree. This officer/advisor must report promptly to the graduate dean all actions, or recommended actions, for any student who violates or is in default of the above policies and standards.
 - c. A full credit load consists of a minimum of nine (9) hours in the Fall and Spring Semesters and six (6) hours in the Summer term.
 - d. Any graduate student who fails to maintain the minimum credit hour load, grades, and grade point average (GPA) required must be immediately removed from financial assistance with prompt documentary notice to the graduate dean.

Grade Forgiveness Policy For Graduate Students

A graduate student enrolled at Florida A & M University who receives a C, D, or F grade, which fails to meet the requirements of a specific graduate program, may petition the Program Dean or Graduate Director to retake the course. The course must be taken at Florida A & M University (FAMU), unless the course is offered at Florida State University (FSU) under the FAMU/FSU cooperative program and the course must carry the same course number and description. Only the higher grade shall be used in computing the overall grade point average (GPA), but both grades will remain on the transcript. If both grades are the same, only the second will be counted in the GPA. A graduate student may repeat no more than two courses in any graduate program at Florida A & M University, and may repeat each course only once. A grade forgiveness form must be submitted by the student to the Registrar's Office after the course is retaken and prior to graduation.

Graduate Student Grievance Procedure

It is the goal of the School of Graduate Studies and Research to provide students with an expeditious, fair, equitable, and consistent procedure for resolving their academic grievances. This policy includes procedures and rules to guide the student through the process. The intent is to resolve issues informally before filing a complaint, or seeking redress beyond the unit in which the alleged offense occurred.

- The student shall submit his/her grievance in writing within 30 days or 10 days into the next semester by using a form provided by the graduate coordinator or academic dean of the college. This form should be stamped to indicate the date and time the grievance was initiated.
- The grievance process can start/stop at any level. However, the graduate coordinator should act as the facilitator.
- If the professor and graduate coordinator cannot find a satisfactory solution, the matter will be forwarded to the graduate committee/graduate faculty within the college.
- The graduate committee/graduate faculty will forward a report indicating their 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 on graduate student grievance.
- The graduate council committee should submit a report to the dean of the School of Graduate Studies and Research.
- The dean of the School of Graduate Studies and Research will review all the documents provided on the issue and make a decision.
- The dean of the School of Graduate Studies and Research will refer the matter to the Provost if a satisfactory solution is not reached.
- The Provost shall 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 dean of Graduate Studies and Research should be provided copies of the written recommendation at each step.

Time Frame:

It is imperative that graduate student academic grievances be handled in an expeditious manner from the date of initialization.

Financial Assistance

Financial assistance is available to support graduate students through the various colleges, schools and institutes, and the Office of the Graduate Dean. The categories of financial aid include:

- Fellowships
- Assistantships
- Matriculation fee waivers
- Out-of-state fee waivers
- Thesis/dissertation incentive awards

Although the assistance provided via the Graduate Dean's office is not based upon need, applicants must establish their eligibility to receive aid through their academic advisors, the respective college and school deans, and/or institute directors. Only fully-admitted, full-time graduate students shall be eligible to receive financial assistance from university funding sources. Most graduate students should be prepared to pay some of their graduate study costs utilizing their own funds.

Eligibility Requirements

Financial assistance is reserved for fully-admitted, full-time, degree-seeking, graduate students who are in good academic standing. Full-time graduate students must enroll for at least nine (9) graduate hours each semester, except in the summer semester when a full load is six (6) semester hours.

Undergraduate courses will not be included for determining a student's full-time status. The student's cumulative graduate GPA must never fall below 3.0, and there can be no grade below "B" in required courses. In addition, the student must be making satisfactory progress toward the degree by successfully completing at least nine credit hours each semester. Fellowship recipients may also receive matriculation fee waivers, and those from outside Florida may receive an out-of-state assistantship waiver, if funds are available.

University-based Funding & Funding from an External Source

Funds at the University are insufficient to provide fellowships to all worthy students. Therefore, we strongly encourage students to apply for outside funds. If, while receiving University-based funding, a student receives funds from an outside source (i.e., a National Science Foundation, Pfizer, Graduate Assistance in Areas of National Need or Javitz Fellowships), the student will be required to accept that award, which will run concurrently with the University-based award. The total amount of funds that a student can be awarded will be based on the Free Application for Federal Student Aid (FAFSA) calculations. The University based award may be reduced if the total funding from all sources exceed the gross financial need as determined by FAFSA.

For example, Student A may find, after filling out the FAFSA form, that his/her gross financial need is \$22,500. Student A has received a fellowship from the GAANN (Graduate Assistance in Areas of National Need Program) totaling \$16,600. Student A also has been awarded a University-based fellowship totaling \$9,000. This would equal a total of \$25,600 and would exceed the student's financial need of \$22,500 by \$3,100. If the student accepts the GAANN award, it would be necessary to reduce the \$9,000 University-based fellowship to \$5,900 so that the total of the GAANN and University fellowship will not exceed the \$22,500 FAFSA calculation.

Awards from Multiple External Sources

A student who has taken the initiative to apply for funding from various external sources may have her/his efforts rewarded by receiving awards from two or more of those sources.

In most cases, individual funding institutions have very specific guidelines that restrict a recipient from concurrently holding another award, fel-

lowship or assistantship. However, in rare cases, no restrictions or limitations are imposed. If a student has been awarded funding from two or more sources, and neither source has restrictions about holding co-existing awards, then the student is allowed by the University to receive all awards.

To ensure that the financial needs of other students are met, the University deems a student ineligible for receipt of University-based funds if the total amount of the awards received from the multiple outside sources exceeds her/his gross financial need as determined by FAFSA calculations. The amount of federal loans a student is eligible for is also affected by the total amount of outside funding the student receives. The amount of federal loans is also affected if the agency or institution granting the funds is federally affiliated.

Federal Loans and Funding from External Sources

Graduate students may borrow money from the federal government to help pay for their educational expenses. However, the federal government has imposed restrictions on the amount of loans that a graduate student may apply for annually. There are also certain criteria which must be met in order for a graduate student to receive federal loans.

Furthermore, the government uses a formula to determine eligibility for a loan. The information a student must place on the FAFSA (Free Application for Federal Student Aid, attainable at the Financial Aid office or at www.fafsa.ed.gov) is applied in the formula to determine need and the amount the government will lend. All of this information is available in the Student Guide to University Financial Aid, which can be retrieved from the Financial Aid Office, the Department of Education or at www.ed.gov/prog_info/SFA/StudentGuide.

If a student is receiving funding from an outside source(s) (i.e. National Science Foundation, Pfizer, or Javitz), and wishes to apply for a federal loan, s/he must fill out a FAFSA form. The amount of loan the student is eligible for will be determined by the award amount and various other factors, such as marital status, and number of dependents.

University-based Funding and Federal Loans

Again, graduate students may borrow money from the federal government to help pay for their educational expenses, with the understanding that such funding comes with restrictions.

A student receiving University funding may also be eligible for federal loans. The amount of the loan is determined by need, based on the formula used on the FAFSA form. For example, if the FAFSA calculations show that Student B has a gross financial need of \$20,000, and the University is giving the student \$9,000 in funding, then the student should be eligible for \$11,000 in loans. For more information, the student should contact the Financial Aid Office, 101 Foote-Hilyer, (850) 599-3730

Fellowship/Grant Application Submission

Each graduate student receiving or seeking funding from the University, is strongly encouraged to put forth at least one effort to obtain funding from an agency external to the University.

Generally, applications to external foundations are due early in the FALL semester for funding for the next academic year. Faculty and department heads are encouraged to provide graduate students assistance with producing outstanding and competitive fellowship and grant applications. Where possible, the School of Graduate Studies and Research will provide grant/fellowship writing workshops.

COLLEGE OF ARTS AND SCIENCES

The College of Arts and Sciences offers masters' degrees in applied social sciences, biology, chemistry, physics, community/school psychology, social work and software engineering. The Ph.D. degree in Physics is also offered.

Applied Social Science

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, Sociology, and Criminal Justice

Courses are available in the M.A.S.S. Program from the disciplines of political science, public administration, history, sociology, 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; (4) Sociology, and (5) 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, Sociology, and Criminal Justice are as follows:

Political Science

- Introduction to Political Science
- American National Government

Criminal Justice

- Criminological Theory
- Research Methods

Sociology

- Social Thought/Theory
- Research Methods

History

- Nature of History
- Historiography

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 1000 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 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. 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 the outside the student's area of concentration.

NOTE: For additional information and requirements pertaining to 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 Methods3
 ISS 5939 Interdisciplinary Seminar3
 POS 5208 Psychology of Political Behavior3
 POS 5117 Prob. State & Local Govt.3
 12

Spring Semester

PAD 5701 Stats. for Public Managers3
 POS 6427 Seminar in Legis. & Legis.3
 POS 6247 Seminar in Political Science3
 POS 5277 Elect. & Political Participation3
 12

Summer Semester

ISS 6942 Intern or
 HIS6971 Thesis6
 POS 5932 Selected Topic in Political Science3
 9

Public Administration Program Courses

Fall Semester

ISS 6305 Social Sci. Research Methods3

ISS 5939 Interdisciplinary Seminar3
 PAD 5417 Prob. in Pub. Person Adm.3
 PAD 6227 Seminar Pub. Finance Adm.3
 12

Spring Semester

PAD 5701 Stats. for Public Managers3
 PAD 6035 Seminar in Adm. Politics3
 PAD 5025 Public Management3
 PAD 5306 Problem of Public Analysis3
 12

Summer Semester

ISS 6942 Intern or
 HIS 6971 Thesis6
 PAD 6060 Seminar in Public Mgmt.3
 9

History Program Courses

Fall Semester

ISS 6305 Social Sci. Research Methods3
 ISS 5939 Interdisciplinary Seminar3
 AMH 5930 Selected Topics in US History3
 AMH 5578 Problems in African Am. His.3
 12

Spring Semester

ISS 5316 Social Science Statistics3
 AFS 5151 Life & Culture of Sub Africa3
 AMH 5409 Prob. History of the South3
 AMH 5116 Civil War Reconstruction3
 12

Summer Semester

ISS 6942 Intern or
 HIS 6971 Thesis6
 HIS 5209 Contemporary Problems or
 AMH 5932 Seminar US History3
 9

Criminal Justice

Fall Semester

ISS 6305 Social Sci. Research Methods3
 ISS 5939 Interdisciplinary Seminar3
 CCJ 5608 Crim. Theory & Practice3
 CCJ 5446 Correctional Mgt.3
 12

Spring Semester

ISS 5316 Social Science Statistics3
 CCJ 5910 Ind. Res. In Corrections3
 CCJ 5940 Special Topics3
 CCJ 5022 Juvenile Justice3
 12

Summer Semester

CCJ 5941 Special Topics II or
 CCJ 6974 Internship Paper6

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 broad 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 is 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.

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 Master 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 5255 Sociology of Education (3) An examination of the theories and research that is 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 systems of education globally.

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.

Biology Master of Science

A program of study leading to a master of science in biology is offered by the Department of Biology in the College of Arts and Sciences. This program is designed to develop competency in the teaching of biology at the undergraduate level, and also competency in research methods essential for pursuing doctoral studies.

The four areas of specialization are cell and molecular biology, physiology, ecological science, and an interdisciplinary program in space life sciences. After completing the core courses, the student may choose one of the four 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.

1. Admission

Admission to the master's program is in conformity with the uniform requirements that the Board of Regents has established for the entire SUS.

- A 3.0 (on a 4.0 scale) cumulative grade point average covering the last 60 semester hours of undergraduate preparation, or a possession of a baccalaureate degree from an accredited institution of higher education;
- Approval of applications from undergraduate seniors is conditional upon their completion of the baccalaureate by taking courses prescribed by the department, prior to commencement of graduate studies;
- A combined score of 1,000 on the verbal and quantitative section of the aptitude test of the Graduate Record Examination;
- In addition to meeting the minimum numerical requirements, the other factors that will be considered are the quality of the student's undergraduate preparation, the quality of the student's undergraduate performance in specific courses, the student's motivation and attitude as ascertained by at least two letters of recommendation written by undergraduate instructors, and/or a personal interview; and

- Foreign students whose native language is not English must make a score of 550 or better on TOFEL (Test of English as a Foreign Language).

2. Academic Requirements:

The master's degree requirements should be met in four to six semesters. The requirements include:

- At least 31 semester hours of graduate credit (5000-level and above courses and 4000-level courses recommended by the student's committee), including a minimum of 6 semester hours of thesis credit;
- Teaching experience in at least one biology laboratory course recommended by the student's supervisor committee;
- Submission of an acceptable master's prospectus;
- Completion of an acceptable research thesis;
- Passing the final comprehensive examination; and
- Successful oral presentation of thesis.

Core Courses

| | |
|-------------------------------------------------|-------|
| PCB 5455 Statistical Procedures | 3 |
| PCB 5205c Cell Structure and Function | 3 |
| BSC 5935/5921 Graduate Seminar/Colloquium | 1* |
| BSC 7912 Graduate Directed Research | 1-4 |
| BSC 5971 Thesis | 6-12 |
| BSC 8920 Master's Comprehensive Exam | 0 |
| | 16-25 |

* Student should enroll in seminar or colloquium each semester of residence.

Elective Courses

The three areas of emphasis are cell and molecular biology, physiology, and ecology.

Cell Molecular Biology (15 credit hours of electives)

| | |
|----------------------------------------------------------------|---|
| PCB 6524 Molecular Biology | 4 |
| PCB 5235 Immunology | 4 |
| Advanced Cell Biology | 4 |
| PCB 6525 Molecular Genetics | 4 |
| Radiation Biology | 3 |
| PCB 5595 Principles of Gene Manipulation | 4 |
| PCB 6175 Principles of Techniques in Electron Microscopy | 3 |
| PCB 5025 Molecular Cell Biology | 4 |
| PCB 6615 Experimental Embryology | 4 |

Physiology (15 credit hours)

| | |
|----------------------------------------------|---|
| 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 |
| Animal Reproductive Physiology | 3 |

Ecology (15 credit hours)

| | |
|--------------------------------------|---|
| PCB 5307 Limnology | 4 |
| PCB 5325 Terrestrial Ecology | 4 |
| PCB 5314 Marine Ecology | 4 |
| PCB 5045 Environmental Ecology | 3 |
| PCH 5365 Physiological Ecology | 4 |
| BSC 6600 Microbial Ecology | 4 |
| PCB 5046 Ecological Processes | |

Graduate Course Descriptions

BSC 5101 History of Biology (2) A survey of the historical develop-

ments from ancient times to modern times. A discussion of the milestones is a vital part of the course.

BSC 5921 Colloquium (1) Presentations by invited scientists. Compulsory attendance for a "S" or "U" credit.

BSC 5935 Graduate Seminar (1-2) Oral presentations on selected topics in the field of specializations.

BSC 5940 Supervised Teaching (variable 1-4).

BSC 5971 Thesis (3-6) may be accumulated up to a maximum of 15 hours.

BCB 6600 Microbial Ecology (4) Prereq: MCB 3023 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) Oral defense of Master's thesis and research.

OCB 5050 Marine Biology (3) Prereq: PCB 2033C. Topics of marine ecosystem such as primary production, energy relations, physiochemical factors, taxonomic groups, deep estuaries, lagoons, and marshes are covered. Field trips supplementary.

OCB 5845 Estuarine Biology (3) Prereq: PCB 2033C. Study of the chemical and physical processes in estuaries and salt marshes as related to the seasonal and spatial patterns of plant and animal species. Emphasis on estuarine community structure, and utilization by species and man. Field trips are required.

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 1011C. 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: PCB 3033 Ecology, Comparative Physiology. Terrestrial environment, plant adaptations, freshwater animals and activities, marine organisms and physiology, estuarine 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: PCB 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, 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 3063. Theories of ori-

gin 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 6175 Principles and Techniques of Electron Microscopy (3) Theory and practice of fixation, embedding, staining, and ultra sectioning for electron microscopy. Study of simple organisms, cells, and tissues.

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 6615 Experimental Embryology (4) Prereq: ZOO 3653. Developmental Anatomy. Experimental approach to fertilization, gastrulation, organogenesis, cytodifferentiation, and reconstitutive development.

PCB 6804 Animal Reproductive Physiology (3) Study of the Vertebrate reproductive cycles. Development of sex, maturity, hormonal control, mating patterns, migrations, gestation in mammals, egg-laying, parental care, and associate phenomena.

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.

PHZ 5156 Scientific Computations (4) Prereq: Knowledge of a computer language-FORTRAN, Pascal or Basic. Algorithms, models, fundamental numerical operations, linear algebraic functions, eigenvalue problems, and Monte Carlo methods.

ZOO 5215 Advanced Invertebrate Biology 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 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 in Chemistry. The course-type option (non-thesis) is designed to provide students with a strong technical education, but with less emphasis on research. The non-thesis option is primarily designed for persons who wish to combine advanced work in chemistry with another profession, such as business or patent law for persons already engaged in an industrial or governmental occupation requiring advanced work in chemistry or for persons engaged (or who will be engaged) in high school or junior college teaching of chemistry. All candidates for the master of science degree in chemistry must satisfy all additional requirements for the master's degree of the Department of Chemistry.

Admissions: All candidates for admission to the chemistry department for the M.S. degree in chemistry must possess a bachelor's degree in chemistry from an accredited institution of higher learning. They must have at least an overall "B" average. Students who do not possess a bachelor's

degree in chemistry will be required to complete a department-designated sequence of undergraduate courses with grades of "B" or better. A battery of ACS placement examinations will be administered to every entering student to determine course selection during his/her first year of graduate study. Applicants must also take the Graduate Record Examination (GRE). They must earn a combined score of at least 1,000 on the verbal and quantitative sections of the GRE, and/or possess at least a grade point average of 3.00 on a 4.00 scale over the junior and senior years of undergraduate study.

Course Requirements: All students pursuing the M.S. Degree in Chemistry are required to complete a minimum of thirty-one (31) semester hours. For both the thesis-type and course-type options, a course of study is formulated for each student by a supervisory committee. In any case, each student must complete sixteen semester hours of core courses as listed below:

Core Courses

| | Sem Hrs. |
|-------------------------------------------------------------|----------|
| CHM 5155 Chemical Separations Methods | .3 |
| CHM 5460C Chemical and Statistical Thermodynamics | .3 |
| CHM 5610C Inorganic Chemistry Principles | .3 |
| BCH 5041C Protein Biochemistry | .3 |
| CHM 5225C Advanced Organic Chemistry | .3 |
| CHM 6935 Chemistry Graduate Seminar | .1 |

Course Electives

| | Sem.Hrs. |
|----------------------------------------------------------------------|----------|
| CHM 5301 Bio-Organic Chemistry | .3 |
| CHM 5150C Advanced Analytical Chemistry | .3 |
| CHM 5490C Chemical Spectroscopy | .3 |
| CHM 5440C Chemical Kinetics | .3 |
| CHM 5480C Quantum Chemistry | .3 |
| CHM 5260C Physical Organic Chemistry | .3 |
| CHM 5380C Topics in Organic Synthesis | .3 |
| CHM 5650C Structural Methods in Inorganic Chemistry | .3 |
| CHM 5513C Principles of X-Ray Crystallography | .3 |
| CHM 5540C Chemical Applications of Group | .3 |
| CHM 5140C Electronic Instrumentation for Chemical Analysis | .3 |
| CHM 5971C Graduate Thesis in Chemistry | .Var. |
| BCH 5045 Nucleic Acids | .3 |
| BCH 5501C Enzymology | .3 |
| CHS 5610C Environmental Chemistry | .3 |

Students following the Thesis tract 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, six (6) of these hours may be substituted with elective courses.
- Successfully give an oral presentation and defend 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.

Students who wish to pursue a teaching career must complete, in addition to the core courses, twenty-one (21) to twenty-three (23) hours of education courses in the College of Education.

Regardless of the type of master's degree, students pursue in the chemistry department, all of them must satisfy the following additional requirements:

- Maintain a cumulative GPA of at least 3.0 on a 4.0 scale.
- For at least two semesters, successfully complete a task assigned by the Chairman of the department and the Chairman of the Graduate Committee. The task may be teaching at least one undergraduate laboratory course under departmental supervision or assisting a faculty member in grading or any

other activity deemed to be an important part of graduate training.

- Achieve a passing grade (70%) in a written Comprehensive examination.

Graduate Course Descriptions

BCH 5501C Enzymology (3) Prereq: One semester of introductory biochemistry or consent of instructor. Study of structure of enzymes; enzyme kinetics; mechanism of enzyme action and regulation of enzyme activity.

BCH 5045 Nucleic Acids Biochemistry (3) Prereq: One semester of introductory biochemistry or consent of instructor. A detailed study of the chemistry of nucleic acids; DNA, RNA and protein biosynthesis and processing; genes and control of gene expression recombinant DNA; gene function in immunological specificity and in development; genetic basis of cancer.

BCH 5041C Protein Biochemistry (3) Prereq: One semester of introductory biochemistry or consent of instructor. A comprehensive study of chemistry of amino acids, peptides, and proteins; protein structure; purification and analysis of proteins; protein turnover.

CHM 5140C 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 5150C Advanced Analytical Chemistry (3) Acid-Base, complexation, redox, and solubility equilibria treated at an advanced level; electrochemical methods of analysis, including potentiometric, coulometric, voltammetric, and conductometric methods. Statistical methods used in chemical analysis.

CHM 5151C Spectrochemical Analysis Methods (3) Spectrochemical information and measurements. Optical sources, transducers, and dispersive device used in atomic and molecular spectroscopy, nondispersive systems, multichannel analyzers, and multiplexing methods.

CHM 5155C 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 5225C Advanced Organic Chemistry (3) Prereq: One year of undergraduate organic chemistry and consent of department. 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 5260C Physical Organic Chemistry (3) Prereq: Advanced Organic Chemistry. 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 5380C Topics in Organic Synthesis (3) Prereq: Advanced Organic Chemistry. Discussion and application of modern synthetic methodology relating to natural products and other complex organic molecules, blocking groups and selective functional group interconversions.

CHM 5440C Chemical Kinetics (3) Prereq: Chemical and statistical thermodynamics or consent of department. Theory and methods for the study of reaction rates and the elucidation of reaction mechanisms in the gas and liquid phases.

CHM 5460C Chemical and Statistical Thermodynamics (3) Prereq: One year of calculus based undergraduate physical chemistry or by consent of the department. 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 5480C Quantum Chemistry (3) Prereq: One year of calculus

based physical chemistry or by consent of the department. 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 5490C Chemical Spectroscopy (3) Prereq: Quantum chemistry. 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 5531C X-Ray Crystallography (3) Prereq: Inorganic chemistry principles. 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 5540C Chemical Application of Group Theory (3) Prereq: Admission to graduate program. A detailed treatment of the principles of group theory and their applications to quantum mechanics and spectra of molecules.

CHM 5610C Inorganic Chemistry Principles (3) Prereq: One semester of undergraduate inorganic chemistry or consent of the department. Atomic structure, term symbols, modern bonding theories, acid-base chemistry, coordination chemistry, chemical reactions and mechanisms.

CHM 5650C Structural Methods in Inorganic Chemistry (3) Prereq: Inorganic chemistry principles. A brief introductory treatment of group theory; presentation of modern structural techniques applicable to elucidation of inorganic molecules as revealed through spectroscopic methods.

CHS 5610C Environmental Chemistry (3) Methods of sampling, detection monitoring, and analysis for chemical pollutants in the air, in the water environment, and in food and drugs; chemical technology's role in solid waste management; introduction to environmental laws.

CHM 5931C Special Topics (3 to 6) Prereq: Consent of the department. 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 5942C Chemistry Laboratory Supervision and Instruction (3 to 6) Prereq: Consent of the department. Strong emphasis is placed on theoretical principles of undergraduate chemistry and pedagogy and reinforced with graduate student teaching of a chemistry laboratory course under faculty supervision.

CHM 5971C Graduate Thesis in Chemistry (6-9) Prereq: Completion of core courses or consent of department. 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 in his or her area of specialization according to departmental standards.

Master of Science in Physics

The Florida A&M University (FAMU) Department of Physics, in the College of Arts and Sciences, 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 M.S. program is also designed to facilitate research that will significantly contribute to the understanding of the physical universe.

The student may choose either a thesis or non-thesis program leading to the master of science in physics degree. The specialization areas are: (1) experimental high energy and nuclear physics, (2) experimental fluid dynamics and plasma physics, (3) computational physics, (4) molecular physics, (5) quantum chemistry, (6) astrophysics, (7) experimental con-

densed matter physics, and (8) accelerator and laser physics.

Admission

Admission to the master of science in physics program is in conformity with the uniform requirements that the Board of Governors has established for the entire State University System of Florida. 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, or a combined score of 1000 on the Verbal and Quantitative Sections of the Aptitude Test of the Graduate Record Examination must be achieved;
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. A grade of 3.0 (out of 4.0) must be made on the departmental proficiency examination. This exam consists of a written examination given twice per year covering the content of an undergraduate program in basic physics. All first year graduate students must take the exam before or during their second semester of graduate study;
3. After completion of the requirements for a thesis or non-thesis program, the degree candidate shall be required to pass an oral examination of the master of science in 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.

- No more than 3 semester hours of PHY 6918 credit and 3 semester hours of PHY 6110 credit may be counted toward the master of science in physics degree.
- 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 Arts and Sciences, offers a program of study leading to the doctor of philosophy in physics 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 program's specific goals focus on producing research physicists of the highest caliber.

The design of the Ph.D. program is such that it will compliment the ongoing research at FAMU. The areas of specialty include (1) experimental high energy and nuclear physics, (2) experimental fluid dynamics and plasma physics, (3) computational physics, (4) molecular physics, (5) quantum chemistry, (6) astrophysics, (7) experimental condensed matter physics, and (8) accelerator and laser physics.

Admission

Admission to the Doctorate of Philosophy in Physics program is granted in conformity with the uniform requirements established by the Board of Governors for the State University System of Florida. 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 and/or a GPA of 3.0 on all graduate work attempted, or a combined score of 1000 on the Verbal and Quantitative sections of the Graduate Record Exam; (3) have received two (2) strong letters of support from undergraduate or graduate faculty who are familiar with the applicant's academic ability and work experience; and (4) Foreign students whose native language is not English, must make a score of at least 550 on the TOEFL.

Academic Requirements

A full-time student in the doctoral graduate program will take nine credit hour each Fall, Spring, and Summer term. A maximum of 90 credit hours or 72 hours for the minimum FAMU residence requirement and 18 hours of dissertation research activities is required for the Ph.D. in Physics. The average time to complete the physics doctorate is five years

Admission with a Bachelor of Science Degree

- Student will take the advanced graduate laboratory and five (5) elective courses.
- Student will take written qualifying exam at the end of first year.
- Student will take additional elective courses to expand his/her knowledge in chosen specialty in the second year.
- 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.
- Student must demonstrate proficiency in graduate-level classical mechanics, electrodynamics, and quantum mechanics in order to pass the candidacy exam.

Admission with a Master of Science Degree

- 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.
- Student will then join the Ph.D. program, after passing the qualifying exam, M.S at the second-year level.
- Each student, after passing the "A" exam, will then begin thesis research supervised by a faculty member.
- The student, upon successful completion of research, will then be

- required to take the "B" exam on his or her written dissertation
- The oral defense will be conducted by a committee of three physics faculty: the research advisor and two faculty from different research specialties.
- 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.

Course Descriptions

PHY 5909r Directed Individual Study (1-12): Individual study directed by graduate faculty on a topic of mutual student and faculty interest.

PHY 5920r Colloquium (1) Physics colloquia as scheduled.

PHY 5971r 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 Computation Physics (3): Computational methods of theoretical physics with applications to atomic, molecular, condensed matter, and many body physics.

PHY 6246 Classical Dynamics-I (3): Lagrange's and Hamilton's equations of motion, variational methods, symmetry, kinematics and dynamics of rigid body motion, special relativity, canonical variables and transformations.

PHY 6247 Classical Dynamics-II (3): Hamilton-Jacobi theory, small oscillations, continuous systems and theory of classical fields, non-linear dynamics and recent developments in chaotic dynamics.

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 6656 Quantum Theory of Angular Momentum (3): Angular momentum operators and wave functions, couplings of two angular momentum, vectors, rotation transformations coupling of more than two angular momenta, spherical tensor operators, the rigid rotor model.

PHY 6668 Quantum Field Theory-I (3): Elementary relativistic quantum field theory: the Klein-Gordon 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 6918r 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 6938r Special Topics in Physics (2-4): Special topics is a faculty supervised study of advanced subjects in experimental and/or theoretical physics.

PHY 8966r 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 in which the Master's thesis defense is to be made.

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; have finished all dissertation research requirements; and are in preparation for the dissertation defense.

PHZ 6115 Mathematical Methods for Physics-I (3): Analytical function theory, linear vector spaces, tensor calculus, function space, orthogonal polynomials, Fourier analysis and introduction to group theory.

PHZ 6116 Mathematical Methods for Physics-II (3): Ordinary differential equations, partial differential equations, Sturm-Liouville theory, linear operators in Hilbert space, Fourier transforms and fast Fourier transforms for spectrum analysis.

PHZ 6136 Group Theory in Physics-I (3): Introduction to group theory: generators of continuous groups, orbital angular momentum, angular momentum coupling, inhomogeneous Lorentz and inhomogeneous Poincare groups, symmetries and invariance principles.

PHZ 6137 Group Theory in Physics-II (3): Born-Oppenheimer approximation, rotational and vibrational molecular wave functions, multi-electron wave functions and operators, Hartree-Fock approximations, configuration interaction, pair and coupled pair theories, many-body perturbation theory.

PHZ 6156 Advanced Computer Methods in Physics (3): Introduction to computer operating systems and compilers, 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. The 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 phe-

nomena; 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 6656 Quantum Theory of Angular Momentum (3): Angular momentum operators and wave functions, coupling of two angular momentum vectors, rotation transformations, coupling of more than two angular momenta, spherical tensor operators, the rigid rotor model.

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.

Physics Graduate Faculty By Rank

Professor Emeritus: Greenfield, Mark B.

Professors: Etemadi, Babak; Johnson III, Joseph A.; Kennedy, Robin J.; Mochena, Mogus; Saha, Bidhan, C.; Treadwell, Elliott; Weatherford, Charles A.; Williams, Ronald L.

Associate Professors: Appartaim, Richard; Belay, Kalayu; Encinosa, Mario R.; Johnson, Lewis, E.; Mezonlin, Ephrem; Niculescu, Halina; O'Neal, Ray; Stampe, Patricia A.

Assistant Professors: Jack, Mark A.; Williams, Kyron

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 so as 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 applications meeting the criteria are recommended for admission to the department chairperson; however, only 15 new entrants per program are accepted each academic year.

The curriculum is composed of a community psychology track and a school psychology track. Some of the courses overlap between the two tracks, while other courses are unique to the State certification requirements for school psychologists. Elective courses beyond the two required tracks are also available and further enhance the breadth and quality of the training curriculum.

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 40 semester hours, including 31 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:

| | Sem. Hrs. |
|---------------------------------------------------------------|-----------|
| 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 | .4 |
| CYP 6936 Seminar in Community Psychology | .3 |
| CYP 6938 Advanced Seminar in Black Psychology | .3 |

Electives:

| | |
|---------------------------------------------|-------|
| EAB 6766 Advanced Applied Behavior Analysis | .3 |
| DEP 6105 Advanced Child Development | .3 |
| Culminating Courses: | |
| CYP 6948 Internship in Community Psychology | .6-12 |
| PSY 6971 Thesis | .6-12 |

School Psychology

Professional School Psychology

Three (3) Credit Hours from the following:

| | |
|---------------------------------------|----|
| SPS 6936 Seminar in School Psychology | .3 |
|---------------------------------------|----|

Psychological Foundations:

Fifteen (15) Semester Credit Hours from the following:

| | |
|-----------------------------------------------|----|
| CLP 6166 Psychopathology | .3 |
| CYP 6938 Advanced Seminar in Black Psychology | .3 |
| DEP 6105 Advanced Child Development | .3 |
| PPE 6055 Theories of Personality | .3 |
| EDP 5136 Adolescent Psychology | .3 |

Assessment Foundations:

Eleven (11) Semester Credit Hours from the following:

| | |
|-----------------------------------------|----|
| CLP 6445 Individual Personality Testing | .4 |
| PSY 6317 Advanced Psychological Testing | .3 |
| SPS 6626 Psychoeducational Diagnosis | .4 |

Electives

| | |
|-------------------------------------------------------|----|
| MHS 5215 Individual Personality Testing | .4 |
| MHS 5211 Psychoeducational Diagnosis and Prescription | .4 |

Research and Measurement:

Six (6) Semester Credit Hours from the following:

| | |
|---------------------------------------------------------------|----|
| PSY 6216 Research Methods | .3 |
| PSY 6206 Psychological Statistics, Measurement and Evaluation | .3 |

Interventions (Direct and Indirect):

Nine (9) Semester Credit Hours from the following:

| | |
|-------------------------------------------------|----|
| SPS 6206 Intervention Techniques | .3 |
| MHS 5565 Group Therapy and Practice | .3 |
| MHS 5435 Theory and Techniques in Counseling or | |
| EAB 6766 Advanced Behavior Modification | .3 |
| MHS 5431 Consultation Skills | .3 |

Educational Foundations:

Six (6) Semester Credit Hours from the following:

| | |
|-------------------------------------------------|----|
| EDA 5051 Overviewing Educational Administration | .3 |
| EDE 5225 Elementary School Curriculum Design or | |
| ESE 5215 Secondary School Curriculum | .3 |

Electives

| | |
|------------------------------------------------|----|
| EDF 5311 Advanced Educational Psychology | .3 |
| EDF 5608 Sociological Foundations of Education | .3 |

Supervised Practicum and Internship:

Minimum of Ten (10) Semester Credit Hours:

| | |
|------------------------------------------|-------|
| PSY 6945 Practicum in School Psychology | .4-12 |
| SPS 6948 Internship in School Psychology | .6-12 |

Educational Specialist Degree (Ed.S.) in School Psychology

The Ed.S. Degree in School Psychology prepares individuals to apply clinical, counseling and educational psychology principles, with an emphasis on multicultural Psychology, to the diagnosis and treatment of student academic and behavioral problems. It includes instructions in child and adolescent development; learning theory; psycho-educational assessment, observation and other procedures for assessing educational, personality, intelligence and motor skill development; therapeutic intervention strategies for students and families; identification and classification of disabilities and disorders affecting learning, behavior, and mental health; school psychological services planning; supervised clinical counseling practice; ethical standards; and applicable regulations. The curriculum is designed to ensure candidates have a foundation in the knowledge base for psychology and education, including theoretical models, empirical findings, and practical techniques in each professional domain outlined by the National Association of School Psychology (NASP) and the Florida Department of Education (FDOE). Upon completion of the curriculum, candidates will demonstrate the professional skills necessary to deliver effective services that result in positive outcomes in each professional domain. All courses are consistent with professional standards outlined by the Florida Department of Education, National Council for Accreditation Teacher Education, and the National Association of School Psychologists. These national and state governing bodies provide Standards which serve to guide the design of school psychology graduate education by providing a basis for foundational development and evaluation which meet quality standards. National requirements for Specialist-Level Programs (1.6-1.7) at the Specialist-level programs consist of a minimum of three years of full-time study or the equivalent at the graduate level. The School Psychology Program includes at least 62 graduate semester hours and one academic year of supervised internship experience, consisting of a minimum of 1200 clock hours. Students will earn the Master's of Science Degree after completing the 39 semester hours during the first year of training.

Professional School Psychology (6 Hours Required)

*SPS6936 Advanced Seminar in School Psychology

*SPS6931 Ethics and Law for School Psychology

Psychological Foundations (15 Hours Required)

*DEP 6105 Advanced Child Development

PPE 6055 Personality Theories

*CYP 6938 Advanced Seminar in Black Psychology

EDF 5136 Adolescent Psychology

EDF 5211 Advanced Education Psychology

*SPS 6705 Neuro-Psychology of Behavior Disorders

*EXP 6406 Advanced Foundations of Learning

*DEP 6047 Development of Ethnic and Diverse Children

Assessment Foundations(10 Hours Required)

*SPS6191 Psychoeducational Assessment I

*SPS6192 Psychoeducational Assessment II

*CLP6445 Individual Personality Testing

Interventions (Direct & Indirect) [21 Hours Required]

*SPS6206 Intervention Techniques I

*SPS6704 Intervention Techniques II

*EAB6766 Advanced Behavior Modification

*MHS 5400 Theory & Techniques in Counseling

*MHS 5565 Group Theory and Practice

MHS 6600 Consultation Skills

*SPS6205 Advanced Consultation Techniques

*SPS6708 Crisis Management/Intervention

Research and Measurement (6+ Hours Required)

*PSY6216 Research Methods

*PSY6206 Psychological Statistics & Measurement
PSY6971 Thesis (Optional)**Educational Foundations (12 Hours Required)***EDA5051 Overviews Education Administration
EDE5510 Elementary School Administration*EDE5225 Elementary School Curriculum Design
ESE5215 Secondary School Education

*TSL 5700 ESOL

*RED5336 Reading in the Content Area

Practicum in School Psychology (Minimum of three [3] Semester Hours)

*SPS6945C Supervised Practicum in School Psychology

Supervised Internship (Maximum 18 Semester Hours/Year)

*SPS6948 Internship in School Psychology

Note: Courses with * are required for program completion.**Completion of the Ed.S. and Degree Certification**

For Successful Completion of a State-approved initial educator preparation program, each student must have a 3.0 GPA at the professional level in the student's field of study (from certification law) and must have passed the FTCE General Knowledge Test, the FTCE Professional Skills Tests, and the FTCE Subject Area Test (School Psychologist). The one exception for EXIT is for students who took and passed all sections of the CLAST prior to July 1, 2002. These students will not be required to take the General Knowledge Test for EXIT.

Hence the following graduation requirements must be met to receive an Education Specialist Degree in School Psychology:

- Completion of all required course work with a minimum cumulative GPA of 3.0;
- Successful Completion of Practicum and Internship
- A Live-text portfolio which documents mastery of the Twelve Florida Accomplished Practices
- Pass all subtests for the Florida Teacher Certification Examination
- Completion of the departmental Comprehensive Examination for School Psychology; and
- External evaluations of at least satisfactory school psychology practitioner ability.

Preparing for the Florida Teacher Education Certification Exam

Examination dates and locations can be found at <http://www.firm.edu/doi/sas/ftce/ftcesche.htm>. Information about computer-based testing is at <http://www.cefe.usf.edu/ComputerBased/MainCompBased.aspx>. In addition to study guides and sample tests instructors provide, you can purchase test preparation guides online at <http://www.cefe.usf.edu/guides.aspx> for \$5.62 each. They download as Adobe Acrobat (pdf) files.

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 interven-

tion 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 changing the community as a means of changing behavior. 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 6205 Advanced Consultation Techniques (3) Emphasis is on fostering collaboration between school and the home/parents. This course provides conceptual and empirical bases for home, school and community consultation and collaboration.

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 6705 Neuro-Psychology or Behavior Disorders (3) Empirical based course assessing the relationship between neurological dysfunctions and DSM diagnosed disorders and emotional disturbance, such as depres-

sion, anxiety, Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorders (CD). Emphasis is on neurological deficits and neuro-pharmacological and behavioral treatments for school age children.

SPS 6708 Crisis Management and Intervention (3) Emphasis is on theory and practice used to prevent and prepare for crisis events. Course incorporates practical planning for immediate response to crisis events.

SPS 6931 Ethics and Law for School Psychology (3) Ethical codes and professional standards are addressed. Provides an in-depth study of disability laws and rights of students and parents within school settings.

SPS 6936 Seminar in School Psychology (3) Topics treated relate to the history and scope of school psychology, the use and misuse of standardized tests, alternative and traditional assessment procedures, the law school psychology, and the certification and training of school psychologists.

SPS 6945 Practicum in School Psychology (4) Students gain supervised, applied experiences in assessment, consultation and intervention in school/community settings.

SPS 6948 Internship in School Psychology (V) Prereq: Completion of all course requirements in school psychology. Supervised practical experience in the institutional setting. (Clinical field experience).

Master of Social Work

The mission of the Master's of Social Work (M.S.W.) program is to advance social and economic justice by educating students for knowledgeable and competent social work practice in urban and rural community development and administration. This mission affirms the profession's historical commitment to promoting a just social and economic order, thereby ensuring equal opportunities for all persons, particularly members of oppressed populations, to achieve their full potential. The MSW program is committed to meeting the needs of at-risk populations in both urban and rural areas of the FAMU service area, as well as in the state of Florida, the nation, and the international community. The MSW program is accredited by the Council on Social Work Education (CSWE).

Admission Requirements

In evaluating applicants, the MSW Admissions Committee takes into consideration many factors and no one criterion alone automatically determines acceptance or non-acceptance into the program. Consideration is given to the following admission requirements:

1. A bachelor's degree from an accredited university or college.
2. A grade point average of 3.0 or better (on A = 4.0 scale) for the last 60 hours of academic work. Students with a GPA of less than 3.0 but higher than 2.5 may be considered for "Special Student Status" admission.
3. A total Graduate Records Examination (GRE) with a score of at least 1000 Combined Verbal and Quantitative scores necessary to be considered for graduate financial assistance from the University.
4. Three letters of recommendation from persons who can address the applicant's ability and potential for graduate education and professional social work practice.
5. A personal narrative statement reflecting the applicant's academic and Employment history, as well as a discussion regarding his/her interest in advanced social work practice.
6. Proficiency in English.
7. Completion of a Criminal Background and Abuse Registry Check, in accordance with the Florida Statute 943.0542 requiring that all students who work or volunteer with children, the elderly, and/or disabled persons complete and pass a criminal background check.
8. A current Florida State Immunization Record.
9. Completion of the "Certification of Eligibility Form" needed to assess the applicant's eligibility for various University financial aid packages.
10. A personal interview may be required of applicants to evaluate her/his potential for developing into a professional social worker.

Program Curriculum

The MSW program curriculum is carefully designed to comply with all of the accreditation standards mandated by the Council of Social Work Education (CSWE), our national accrediting body. Students are

provided with the opportunity to benefit from intensive classroom instruction, enriching field placements, involvement in the community, and social work research projects currently being conducted by faculty members. The graduate curriculum enables students to gain the professional knowledge, values and skills necessary to become competent leaders in the field of social work.

The first year of study is comprised of social work foundation coursework, while the second year focuses on advanced practice knowledge and skills. The curriculum infuses social work values and ethics, knowledge on human behavior and the social environment, issues of diversity, the promotion of social and economic justice, a focus on populations-at-risk, social work practice skills, social welfare policy analysis, development and implementation, social work research, and field experience opportunities throughout the two-year program. During the foundation year, the program provides students with the generalist perspective of social work in order to ensure graduates are equipped with the knowledge, values and skills needed to address social and economic inequality, racism, classism, sexism, as well as other forms of oppression in the lives of individuals, families, groups, organizations and institutions.

After completing the foundation year, the student continues on to take coursework and field work in the program's advance concentration in community development and administration.

Community Development and Administration Concentration

In the advanced year of the MSW program, emphasis is given to the role of community-based social service administration in the social change process. The concentration focuses on the development of administrative skills necessary to improve the responsiveness and effectiveness of organizations that serve the community. Students are introduced to a wide range of technical and interpersonal skills designed to enhance the development, maintenance and responsiveness of social programs and service delivery systems to urban and rural communities. It further focuses on the development of requisite skills necessary for competent social planning, mobilizing communities and human service consumer groups, program development, resource development and management, and program evaluation. Graduates of the program are then equipped for positions as social service administrators, program designers, grant writers, program evaluators, social and economic community developers, consultants, and directors of their own agencies.

Faculty

Chairperson: Jarmon, Brenda

Associate Professors: Haile, Barbara; Langley, Merlin; Perry, Robin

Assistant Professor: Jackson, Jean Hyché

Field Director: Carter, Kevin

Foundation Curriculum

The following courses are required for all students enrolled in the MSW program:

| | Credits |
|-----------------------------------------------------------------|---------|
| SOW 5106 Human Behavior and the Social Environment I | .3 |
| SOW 5235 Social Welfare Policies and Programs I | .3 |
| SOW 5404 Social Work Research I | .3 |
| SOW 5341 Social Work Practice I | .3 |
| SOW 5620 Dynamics of Oppression | .3 |
| SOW 5107 Human Behavior and the Social Environment II | .3 |
| SOW 5236 Welfare Policies and Programs II | .3 |
| SOW 5343 Social Work Practice II | .3 |
| SOW 5425 Social Work Research II | .3 |
| SOW 5534 Field Practicum I | .3 |
| SOW 5545 Field Seminar I | .1 |
| SOW 5535 Field Practicum II | .3 |

SOW 5546 Field Seminar II1
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Advanced Curriculum

The following advanced courses are taken after all requirements of the foundation year have been successfully completed:

| | |
|--------------------------------------------------------------|---------|
| | Credits |
| SOW 5334 Theories of Communities & Organizations | 3 |
| SOW 5344 Community Development in Social Work Practice | 3 |
| SOW 5386 Program Design and Development | 3 |
| SOW 5433 Program Evaluation | 3 |
| SOW 5538 Field Practicum III | 3 |
| SOW 5547 Field Seminar III | 1 |
| SOW 5387 Resource Development and Management | 3 |
| SOW 5241 Advanced Social Welfare Policies and Programs | 3 |
| SOW 5539 Field Practicum IV | 3 |
| SOW XXXX Social Work Elective Course | 3 |
| SOW XXXX Social Work Elective Course | 3 |
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Graduate Course Descriptions

SOW 5106 Human Behavior and the Social Environment I (HBSE) (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 5107 Human Behavior and the Social Environment II (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 5260 Dynamics of Oppression (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. Offered in Fall and Summer semesters.

SOW 5235 Social Welfare Policies and Programs I (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 and Programs II (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 of poverty, racism, and gender inequality. Offered only in the Spring semester.

SOW 5341 Social Work Practice I (3) Prerequisites: Admission to the MSW Program and completion of, or concurrent enrollment in, SOW 5106. 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 (3) Prerequisites: Prerequisites: Admission to the MSW Program, SOW 5341, and completion or concurrent enrollment in SOW 5107. Fundamentals of macro social work practice aimed at eliminating barriers to enhanced social functioning. Examines principles, theories, and skills of social work practice in groups, communities, organizations and large systems. Principles of social planning, community development, and social action are incorporated. Offered only in Spring.

SOW 5404 Social Work Research I (3) Prerequisites: Admission to graduate school or consent of the instructor. 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 inter-relatedness, problem formulation, and report writing. Offered only in the Fall semester.

SOW 5535 Field Practicum II (3) Prerequisites: SOW 5534 and the written consent of the MSW Field Coordinator. 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 5425 Social Work Research II (3) Prerequisites: SOW 5404. This course focuses on introducing the student 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 (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 Coordinator. MSW-supervised field experience in an approved social work setting at the foundation-year level. The field practicum must be taken concurrently with Field Seminar I [225 clock hours].

SOW 5545 Field Seminar I (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 Coordinator. Focus on integrating knowledge, values, and skills in relation to the field experience.

SOW 5546 Field Seminar II (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 Coordinator. Focus on integrating knowledge, values and skills in relation to field experience.

SOW 5334 Theories of Communities and Organizations (3) Prerequisites: Successful completion of all foundation year coursework or the consent of the instructor. 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 (3) Prerequisites: Successful completion of all foundation year coursework, admission into the MSW program, and completion of, or concurrent enrollment in, SOW 5334. Focus 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 (3) Prerequisites: Successful completion of all foundation year coursework, admission to the MSW program, and completion of, or concurrent enrollment in, SOW 5334. 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 Fall semester.

SOW 5433 Program Evaluation (3) Prerequisites: Successful completion of all foundation year coursework or consent of the instructor.

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 Fall semester.

SOW 5538 Field Practicum (3) Prerequisites: SOW 5535 and SOW 5546, completion of, or concurrent enrollment in, 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 their advanced knowledge, values and skills may be applied [225 clock hours].

SOW 5387 Resource Development and Management (3) Prerequisites: Successful completion of all foundation year coursework, admission to the MSW program, and completion of, or concurrent enrollment in, 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 and Programs (3) Prerequisites: Completion of all foundation year coursework, or consent of instructor. Examination of the utilization of policies and programs by social service administrators to empower groups, communities and organizations. Students apply judicial and legal actions to a chosen social welfare issue, develop a policy to address it, and devise strategies to bring the policy to change through organizational and potential channels.

SOW 5547 Field Seminar III (1) Prerequisites: SOW 5535 and SOW 5546, successful completion of, or concurrent enrollment in, SOW 5334, SOW 5344, SOW 5386, and SOW 5433, and written consent of the MSW Field Coordinator. Integration of advanced knowledge and skills applied in the field placement.

SOW 5539 Field Practicum IV (3) Prerequisites: SOW 5538 and SOW 5547, completion of, or concurrent enrollment in, 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].

MSW Program Electives

SOW 5123 Psychopathology (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 (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 professionals, paraprofessionals and volunteers is undertaken.

SOW 5336 Rural Social Work (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 5335 Empowerment (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 5621 Women, Power, and Change (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 (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 5540 Field Practicum Elective I (1) Prerequisites: Admission to the MSW program and written consent of the MSW Field Coordinator. A one-credit practicum elective in which the MSW student is given the opportunity to extend, advance, and concentrate learning beyond the tasks required in the MSW field sequence. Requires 75 clock hours of field work in an approved MSW-supervised social work setting.

SOW 5541 Field Practicum Elective II (2) Prerequisites: Admission to the MSW program and written consent of the MSW Field Coordinator. A two-credit practicum elective in which the MSW student is given the opportunity to extend, advance, and concentrate learning beyond the tasks required in the MSW field sequence. Requires 150 clock hours of field work in an approved MSW-supervised social work setting.

SOW 5542 Field Practicum Elective III (3) Prerequisites: Admission to the MSW program and written consent of the MSW Field Coordinator. A three-credit practicum elective in which the MSW student is given the opportunity to extend, advance, and concentrate learning beyond the tasks required in the MSW field sequence. Requires 225 clock hours of field work in an approved MSW-supervised social work setting.

SOW 5000 Directed Independent Study (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 (1 - 6) Prerequisites: 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 (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 Computer and Information Sciences

Master of Science in Software Engineering

The Florida A&M University Department of Computer and Information Sciences (CIS) offers a Master's degree in Software Engineering Science (MSES). This degree, which is based on a curriculum from the Software Engineering Institute (SEI), 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 receiving a Ph.D. in computing.

Facilities

The resources of the CIS Department include four laboratories for

research and teaching. The equipment is used for software engineering, graphics and visualization, high performance computing, distributed and parallel computing, and databases.

Admission Requirements

A candidate must meet the university-level admission requirements for graduate school including:

- a 3.0 (on a scale of 4.0) cumulative grade point average covering the last 60 semester hours of undergraduate preparation, or a combined score of 1050 on the Verbal and Quantitative Sections of the Aptitude Test of the Graduate Record Examination;
 - possession of a baccalaureate degree from an accredited institution
 - for non-English speaking students, a score of at least 600 on the TOEFL
- In addition to university-level admission requirements,
- A candidate must have the equivalent of a minor in computer and information science or a related field; and
 - Completion of the following courses and their prerequisites: COP 3610, COP 4020, and COT 4210.

Degree Requirements

The MSES degree program requirements consists of course work and a master's thesis. Students must:

- maintain a grade of 3.0 (out of 4.0) in all courses in the curriculum,
- select an area of research study, thesis advisor, and thesis committee during their second year of study,
- submit a thesis accepted by the thesis advisor and the thesis committee, and
- complete 33 hours of classroom courses.

A recommended schedule of courses is listed below.

Year One

Fall Term

- * CIS5025 Programming Languages
- * CEN5075 Software Systems Engineering
- * COT5310 Theory of Formal Languages and Automata

Year One

Spring Term

- * CEN5016 Formal Methods
- * CEN5064 Advanced Systems Design
- * Elective

Year Two

Fall Term

- * CEN5015 Software Development and Maintenance
- * COP5614 Operating Systems
- * Elective

Year Two

Spring Term

- * CEN5055 Software Project Management
- * CEN5070 Software Verification and Validation
- * CIS5970 Thesis

Course Descriptions

CIS5025 Programming Languages Prereq: CDA 3101 or equivalent, COP2532 or equivalent, and COP 4020 or equivalent. Provides a course in language theory, grammars, syntax, and semantics. Scanners, symbol tables and the pragmatics of implementation used to develop software.

COT5310 Theory of Programming Languages and Automata Prereq: COT3100 or equivalent and COT 4210 or equivalent. 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.

COP5614 Operating Systems Prereq: CDA 3101 or equivalent, COP2532 or equivalent and COP 3610 or equivalent. Provides a study of computer operating systems which are the primary resource managers of computer hardware. 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 compar-

ison of representative commercial operating systems is included. Laboratory use of the computer is an integral part of this course.

CEN5075 Software Systems Engineering Prereq: CIS4301 or equivalent. 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.

CEN5016 Formal Methods of Software Engineering Prereq: COT3100 or equivalent. Exposes students to the use of specification 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.

CEN5064 Advanced Systems Design Principles Prereq: CEN5075. 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.

CEN5015 Software Development and Maintenance Prereq: CEN5064. Covers design, implementation, and maintenance (changing) of software. Various methods and languages are used in these activities.

CEN5070 Software Verification and Validation Prereq: CEN5064, CEN5016. 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.

CEN5055 Software Project Management Teaches process considerations in software engineering. Provides advanced material in software project planning, monitoring and controlling mechanisms, and leadership and team building.

CIS5930 Special Topics in Software Engineering (Elective). Introduces students to current topics in software engineering. Topics are announced as the course is taught.

CIS5935 Introduction to Research Introduces students to research principles such as literary searches, library usage and basic research techniques.

CIS5970 Thesis Thesis preparation, presentation, and defense.

COLLEGE OF ENGINEERING SCIENCES, TECHNOLOGY AND AGRICULTURE

Graduate Faculty

Professors: Anderson, Lee E.; Cilek, James; Colova, Violetta; Flowers, Ralph W.; Gardner, Cassel S.; Hsieh, Yuch P.; Hubbard, Michael; Kanga, Lambert; Leong, Stephen (Associate Dean); Lu, Jiang; Muchovej, James; Neil, James; Olorunnipa, Zacch; Oghenekome, Onokpise; Pancholy, Sunil K.; Pescador, Manuel L.; Phills, Bobby R.; Sheikh, Mehboob B.; Smith, John P.; Thomas, Michael; Thomas, Verian D; Wright, Charles.

Associate Professors: Bellarmine, Thomas; Bloem, Kenneth; Bloem, Stephanie; Cheng, Bin-Luh; Duke, Edwin; Hight, Stephen; Kairo, Moses; Legaspi, Jesusa; Lorenzo, Alfredo; Mbuya, Odemari; Musingo, Mitwe; Peterson, John; Reitz, Stuart; Worthen, Dreamal I; Zhong, Harry

Assistant Professor: Anglade, Yves; Barber, Jane; Hix, Raymond; Park, Hyun Woo

Agricultural Sciences Master of Science

Description

The Division of Agricultural Sciences in the College of Engineering

Sciences, Technology and Agriculture presently offers the master of science degree program in agricultural sciences. Candidates will be required to successfully complete a minimum of thirty-six (36) semester hours, including six hours of thesis. The degree requires a minimum of approximately eighteen calendar months for its completion. The present areas of concentration are: Agribusiness, Animal Science, Enology and Viticulture, Entomology, Environmental Science, Food Science, and Plant Science.

The curriculum of the master's program is structured so that students may expand their knowledge in selected areas of agriculture instead of specializing in any one field. However, the research performed by these students will be specific in nature and it will be supervised by agriculture faculty members in their areas of expertise. The students will receive in-depth training in modern agricultural research methods and effective transfer techniques for current agricultural and food science information and technological advances.

Admission Requirements

For admission to the master's program, the candidate must have received a bachelor's degree in agriculture or a related field. The candidate must also satisfy the University's regulation of a GPA of 3.0 in the junior and senior years of the undergraduate program or a score of 1,000 (verbal and quantitative) or better on the GRE. International applicants whose native language is not English shall be required to present a score of 500 on the Test of English as a Foreign Language (TOEFL). Students must maintain a GPA average of 3.0 or better and must have a "B" or better in all core courses.

Agribusiness

The academic program for the Master's of Science in Agricultural Sciences with an emphasis in Agribusiness, is as follows:

| I. Select the following required courses | Sem. Hrs. |
|-------------------------------------------------------------------------------|------------|
| AGG 5825 Fundamentals of Research Design | .4 |
| AGG 5931 Professional Seminar | .3 |
| *AGG 5920 Colloquium (repeated) | .0 |
| II. Select one of the following core courses | |
| AGR 5445 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 three of the following core courses | |
| AEB 5307 Agricultural Marketing and Finance | .3 |
| AEB 5335 Advanced Agricultural Price Analysis | .3 |
| AEB 5555 Econometrics | .3 |
| AEB 5375 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. | .11 |
| Total | .36 |

Entomology

The academic program for the Master of Science in Agricultural Sciences with an emphasis in Entomology, is as follows:

| I. College Requirements | Sem. Hrs. |
|--------------------------------|-----------|
|--------------------------------|-----------|

| | |
|-------------------------------------------|----|
| AGG 5825C Fundamentals of Research Design | .4 |
| AGG 5931C Professional Seminar | .3 |
| AGG 5920 Colloquium | .0 |

II. Major Requirements¹

| | |
|---------------------------------------------|----|
| ENY 5155C Systematic Entomology | .3 |
| ENY 5355C Insect Morphology | .4 |
| EVR 6064 Principles of Ecology ² | .3 |

III. Approved Electives in Area of Concentration³

| | |
|-----------------------------------------|------|
| PMA 5407C Integrated Pest Management | .3 |
| ENY 6215 Biological Control of Weeds | .3 |
| ENY 5101C Principles of Animal Taxonomy | .4 |
| ENY 5500 Aquatic Entomology | .3 |
| ENY 6663 Medical Entomology | .3 |
| AGG 5910 Supervised Research | .1-3 |

IV. Approved Electives not in Area of Concentration³

| | |
|---------------------------|------------|
| V. Master's Thesis | .6 |
| Total Credit Hours | .36 |

Nine (9) credits per semester X 2 years = 36 (plus at least one (1) credit per summer if on assistantship)

¹ Major requirement may be exempted upon approval of a student's Thesis Committee and credits satisfied by taking additional electives.

² Other approved Ecology courses include: Environmental Ecology (PCB 5045), Ecological Processes (PCB 5046), Marine Ecology (PCB 5314), Terrestrial Ecology (PCB 5325), Advanced Plant Pathology (BOT 5604).

³ Non-Major Electives may include (but are not limited to) the following:

| | |
|-------------------------------------------------|------|
| AEB 5185 Advanced Agricultural Production | .3 |
| ANS 5205C Advanced Animal Production | .3 |
| FOS 5314 Advanced Food Processing and Storage | .3 |
| AGR 5445 Advanced Plant Sciences | .4 |
| AGR 5900 Directed Individual Study | .1-4 |
| EVR 5063 Elements of Environmental Biology | .4 |
| PHC 6000 Epidemiology | .3 |
| BOT 5937 Selected Topics in Plant Biotechnology | .3 |
| SWS 5217 Soil and the Environment | .3 |
| FRC 5805C Viticulture | .4 |

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 core courses | Sem. Hrs. |
|-------------------------------------------------------------------------------|-----------|
| AGG 5825 Fundamentals of Research Design | .4 |
| AGG 5931 Professional Seminar | .3 |
| AGG 5920 Colloquium (repeated) | .0 |
| II. Select one of the following core courses | |
| AGR 5445 Advanced Plant Sciences | .3 |
| ANS 5205C Advanced Animal Production | .3 |
| SWS 5217 Soil and the Environment | .3 |
| PMA 5407C Integrated Pest Management | .3 |
| AEB 5185 Advanced Agricultural Production | .3 |
| III. Select a minimum of 15 credit hours of the following core courses | |

| | |
|----------------------------------------------|-----|
| FOS 5314 Advanced Food Processing & Storage | 3 |
| FOS 5315 Advanced Food Chemistry | 3 |
| FOS 5325 Advanced Food Analysis | 3 |
| FOS 5930 Seminars in Food Science | 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. Approved Electives 5
(Elective include courses in the area of concentration or related areas)

V. AGG 5976 Master's Thesis 6
(The candidate must complete and successfully defend an original thesis)

Total Credit Hours 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 core courses | Sem. Hrs. |
| AGG 5825 Fundamentals of Research Design | 4 |
| AGG 5931 Professional Seminar | 3 |
| ACG 5920 Colloquium (repeated) | 0 |

| | |
|-----------------------------------------------------|---|
| II. Select one of the following core courses | |
| AEB 5185 Advanced Agricultural Production | 3 |
| AGR 5445 Advanced Plant Sciences | 3 |
| EVR 5063 Elements of Environmental Biology | 4 |
| FOS 5314 Advanced Food Processing & Storage | 3 |
| PMA 5407C Integrated Pest Management | 3 |
| SWS 5217 Soil and the Environment | 3 |

| | |
|-------------------------------------------------------|---|
| III. Select all of the following core courses: | |
| ANS 5202 Monogastric Farm Animals | 3 |
| ANS 5205C Advanced Animal Production | 3 |
| ANS 5447 Ruminant Nutrition | 4 |
| ANS 5454 Animal Science Experimentation | 3 |
| ANS 5446 Advanced Animal Nutrition | 3 |

IV. Approved Electives 4-5

V. AGG 5976 Master's Thesis 6
(The candidate must complete satisfactorily complete and successfully defend an original thesis).

Total Credit Hours 36

Plant Science

The academic program for the Master's of Science in Agricultural Sciences with an emphasis in Plant Science is as follows:

| | |
|------------------------------------------------------|-----------|
| I. Select the following required core courses | Sem. Hrs. |
| AGG 5825 Fundamentals of Research Design | 4 |
| AGG 5931 Professional Seminar | 3 |
| *AGG 5920 Colloquium (repeated) | 0 |

| | |
|-----------------------------------------------------|---|
| II. Select one of the following core courses | |
| ANS 5205C Advanced Animal Production | 3 |
| SWS 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 5322C Plant Breeding | 4 |
| AGR 5445 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 or related areas. 4

Total Credit Hours 36

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-putout 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 (1-4) 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 prepare 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 permission 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 5445 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 biochemistry, metabolism, and physiology. Nitrogen fixation, nutrient translocation, juvenility, photo-periodism, 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.

ENG XXXX Construction Technology and Management II. (3) Presents the theory and practice pertaining to the construction projects. The roles of designer, owner, general contractor, and construction manager are

outlined. Real world problems are part of the course.

ENG XXXX Construction Technology and Management I (3) The course deals with the issues in construction management. Topics include strategic planning in construction, planning for productivity, factors affecting productivity, productivity analysis, and the means to improve productivity.

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 5204C Insect Ecology (3) Prereq: ENY 3004C. Behavioral, population and community ecology of insects. Co-evolution, mimicry and insect defenses. Nutritional ecology, conservation biology, dispersal and life cycles, population dynamics of insects and cycles of gradation. Relationships of insects with their biotic and physical environments, along with the roles of insects in nature

ENY 5227C Advanced Urban Entomology (3) Prereq: ENY 4229. Biology, ecology, identification, and management of pest organisms associated with people, structure and the urban environment. Emphasis on economic importance and control strategies for arthropod pests commonly invading households and commercial structures in urban environments.

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 Principles of Biological Control (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 6402C Insect Physiology (3). Prereq. ENY 3004C. Physiology of insects with emphasis on integration of physiological processes and systems. Structural organization of insects and their tissues and organs; insect biochemistry; endocrinology; neurobiology; photo- chemo- and mechanoreception. Major metabolic pathways for energy transformation and utilization in insects. immune mechanisms. Physiology of reproduction. Applications of biotechnology to insect control. Osmoregulation.

ENY 6651C Insect Toxicology (3). Prereq. CHM 2210, ENY 3004C. Classification and properties of major types of insecticides, chemistry, formulation, toxicity, metabolism and mode of action, selectivity, use hazards, residues, environmental problems, biological magnification, persistence and effects on non-target organisms. Emphasis on target site physiology, biochemistry and molecular biology, pharmacodynamics, metabolism and the development of resistance.

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 Food 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 5135 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 5428 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 4321C. 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 Food 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 vinification 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 IPM, modern pest control strategies, case histories of IPM programs. By permission only.

SWS 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 soil survey data; laboratory analyses and testing of spoils; soil classification and engineering applications; agricultural land classifications; soils and water conservation; and sustainable agroecosystems.

SWS 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.

SWS 5405C Soil Chemistry (3) Prereq: General Chemistry, General Soils. The inorganic and organic constituents of soils. The chemical and physical properties of soil colloids, ions exchange, soil absorption 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 offers a B.S. and M.S. 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 and at the John A. Mulrennan, Sr. Arthropod Research Laboratory in Panama City are available for thesis research. A Ph.D. student can take course work both universities depending on their interests and their major professor can be any regular faculty member at either university.

As this degree is directed towards African-Americans, women, and other minorities, each Ph.D. curriculum will be designed to meet the specific needs of each student. Scholarships and assistantships are available.

The graduate admission requirements for the cooperative Ph.D. in entomology are:

1. The student shall have earned a graduate degree from an accredited institution or shall have earned a 3.0 GPA or better in all work attempted while registered as an upper division student working for a baccalaureate degree.
2. The student shall have a total Quantitative-Verbal Graduate Record Examination (GRE) score of 1,000 or higher or an equivalent score on an equivalent measure approved by the Board of Regents. All applicants to graduate programs in the State of Florida must submit a GRE score even if the GRE has been waived.
3. International students whose native language is not English shall score 550 or better on the Test of English as a Foreign language (TOEFL).
4. The student shall request three letters of recommendation from individuals in a position to evaluate the student as a potential graduate student.
5. The student shall provide a personal and professional goal statement. This is a one page statement relating to the student's background, training, experience and proposed educational goals.
6. The student shall submit transcripts from all institutions of higher learning attended.
7. The student must have a major professor prior to being admitted for graduate studies.

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 be 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) 599-8864.

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 Florida 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 importance 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) Prereq: 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.

non-educational institutions and agencies. Students acquire skills and competencies in the areas of Adult Education, Counselor Education, and Educational Leadership (Administration and Supervision).

The Adult Education and Counselor Education programs offer 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 engaging 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 the Department of Educational Leadership and Human Services are required to see their faculty advisor at the beginning of each semester and at the end of each semester prior to registering for the next semester courses; and are to dress as professional educators, and to attend all required meetings.

Faculty

Professors: Burnette, Ada Puryear; Dozier-Henry, Oare'; Hope, Warren; Moore, Mary; Poole, Gloria.

Associate Professors: Billups, Arland; Bogan, Yolanda; Davenport, Elizabeth; Lutti, Ghazwan; McConnell-Robinson, Nancy; Green-Powell, Patricia

Adult Education Administration Master of Education/Master of Science

The program in Adult Education prepares practitioners to provide leadership to facilitate adult learning in a variety of organizational, higher education and community settings as program planners, administrators, supervisors, trainers, adult educators, adult literary developers and other continuing education specialists. Students are prepared to take on these roles through the mastery of certain subject matter and the acquisition of research skills. The systematic study of the underlying theories and current practices involves participation in required coursework, experiential learning activity and independent study.

Admission requirements

An applicant must:

1. Meet all university admission requirements for graduate study;
2. Declare in writing his or her intention to major in adult education
3. Present three (3) letters of recommendation that include references to professional experiences and personal qualities;
4. Receive approval as an adult education administration major pending review by the adult education coordinator and department chairperson.

Basic Curriculum Guide

| | Semester Hours |
|--------------------------------------------------------------|----------------|
| Foundations | .6 |
| EDF 5211 Advanced Educational Psychology | .3 |
| EDF 5481 Introduction to Educational Research* | .3 |
| EDF 5543 Philosophical Foundations of Education | .3 |
| EDF 5608 Sociological Foundations of Education | .3 |
| Adult Education | .24 |
| ADE 5075 Higher Adult Education | .3 |
| ADE 5081 Introduction to Adult Education* | .3 |
| ADE 5181 Community Adult Education Programs | .3 |
| ADE 5182 Planning and Development of Adult Education* | .3 |
| ADE 5197 Basic Education for Adults | .3 |
| ADE 5260 Organization and Administration of Adult Education* | .3 |

COLLEGE OF EDUCATION

The curricula are designed to produce teachers and educators who are exemplary professionals: professionally astute, academically astute, confident, analytical/reflective, proactive, and ethical.

The College of Education offers the Doctorate of Philosophy in Educational Leadership. Additionally the Master of Education and the Master of Science in education are offered in the following specialty areas:

- Adult Education
- Business Education
- Counselor Education
- Early Childhood and Elementary Education
- Educational Leadership (Administration & Supervision)
- Health and Physical Education
- Industrial Arts/Technology
- Secondary Education and Foundations

Department of Educational Leadership and Human Services

The Department of Educational Leadership and Human Services provides experiences for a variety of professional careers in educational and

ADE 5266 Supervision of Adult Programs*3
 ADE 5385 Psychology of the Adult Learner*3
 ADE 5471 Materials and Methods of Adult Education*3
 ADE 5474 Methods, Techniques, and Materials of Adult Education . . .3
 ADE 5772 Research Seminar*3
 ADE 5906 Directed Individual Study1-3
 MHS 5420 Guidance and Counseling in Adult Education3
 Educational Leadership6
 EDA 5051 Overview of Educational Administration*3
 EDA 5201 School Business Management3
 EDA 5222 Personnel Administration3
 EDA 5530 Principles of Secondary School Administration3
 Thesis Option(for Master of Science Program)3-6

***Required Courses**

A minimum of thirty-six (36) semester hours must be completed for the master's degree.

Certification in Adult Education

Courses in the program leading to certification in adult education administration are arranged so that a student who has completed graduate study at the master's level or higher may satisfy the requirements for certification by completing the following modified core:

| | Semester Hours |
|------------------------------------------------------------------------|----------------|
| Adult Education Core | 18 |
| ADE 5182 Planning and Developing Adult Programs* | 3 |
| ADE 5260 Organization and Administration of Adult Education* | 3 |
| ADE 5266 Supervision of Adult Programs* | 3 |
| ADE 5471 Materials and Methods of Adult Education* | 3 |
| EDA 5051 Overview of Educational Administration* | 3 |
| EDA 5201 School Business Management* | 3 |

*Required Courses

Graduate Course Descriptions

ADE 5075: Higher Adult Education (3) Learning facilitation, program development and planning, in colleges, and universities and continuing professional education. Emphasis professional development, and recurrent education.

ADE 5081: Introduction to Adult Education Programs (3) Overview of the profession and practice of adult education with emphasis on historical development, philosophy, purposes, functions, scope, and clientele.

ADE 5181: Community Adult Education Programs (3) Examiners multi-dimensional aspects of community. Explores communities as national laboratories of learning. Includes principles and practices in organizing, planning and administering community adult education programs. Emphasis on developing and maintaining appropriate community relationships, professional and lay roles, institutional or agency relation processes and decision making patterns.

ADE 5182: Planning and Development of Adult Programs (3) Planning and development of programs in a broad spectrum of agencies and organizations that provide adult education or facilitate adult learning as a part of their mission. Emphasis on program content, organization, target clientele and the effects of organizational and community dynamics on program planning, and staff organization.

ADE 5197: Basic Education for Adults (3) Prereq: ADE 5081. Analysis of functional needs of undereducated adults. Emphasis on approaches to teaching essential skills, concepts, and attitudes.

ADE 5260: Organization and Administration of Adult Education (3) Management and leadership in organizations. Emphasis on administrative responsibilities, leadership, group dynamics and organizational practices.

ADE 5266: Supervision of Adult Programs (3) Prereq: ADE 5260. Basic principles, concepts, techniques and practices of supervision. Emphasis on professional and leadership development.

ADE 5385: Psychology of Adult Learning (3) Psychological factors

influencing the intellectual development learning styles and preferences, and adult orientation toward learning of adults. Emphasis on social, physical, and psychological forces affecting adult learners.

ADE 5471: Materials and Methods in Adult Education (3) Prepares participants to systematically plan and provide educational learning opportunities for adults. Focus on adults as learners, specialized methods and materials used in educational and other training settings, and organizational/community dynamics affecting the provision of adult education programs.

ADE 5474: Methods, Techniques and Materials of Adult Basic Education (3) Innovative approaches to program instruction and skills development in relation to adult education programs.

ADE 5772: Research Seminar (3) Restricted to students seeking master's degree in adult education and/or certification in adult basic education. Analysis of current research related to trends, implications, problems, procedures, and innovative programs. Explores research as a means of developing knowledge in the field.

ADE 5906: Directed Individual Study (variable 1-6) Prereq : For majors only, with department approval. Individual study may include historical perspectives, adult psychology of learning, program development, organization and administration for adults, adult programs in other countries.

ADE 5971: Thesis (3-6) An independent investigation of a problem in adult education.

MHS 5420: Guidance and Counseling in Adult Education (3) Provides theories and practical application in guidance and counseling for adults in a variety of settings.

**Counselor Education
Master of Education/Master of Science**

The Counselor Education Program within the Department of Educational Leadership and Human Services offers graduate study 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 learner 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 constitute a pervasive focus in all program studies.

Admission Requirements

An applicant must:

1. Meet all University admissions requirements: i.e. "B" (3.0) average in the last sixty (60) semester hours of undergraduate work or a score of 1,000 on the GRE (Verbal and Quantitative subtests).
2. Meet all criteria for undergraduate admission to teacher education.
3. Declare in writing intention to major in Counselor Education.
4. Present three (3) letters of recommendation, one of which should be from a qualified professional helper. These letters should address the applicant's personal and professional qualities.
5. Receive approval as a Counselor Education major by the coordinator of Counselor Education and the Department Chairperson.
6. Indicate in writing his/her understanding of the qualifications for certification in the State of Florida if he/she plans to work as a counselor in the school system. The applicant must present a copy of a valid teacher certificate or passing scores on the FTCE (Florida Teacher Certification examination) if entering the approved school guidance/counselor track.

**Counselor Education:
Curriculum Guide**

Foundations (6 semester hours required)

EDF 5481 Introduction to Educational Research*3

| | |
|------------------------------------------------------------|---|
| MHS 5005 Introduction to Profession of Counseling | 3 |
| MHS 5620 Organization and Administration of Human Services | 3 |
| SDS 5011 Elementary Guidance Systems | 3 |

Assessment (6 semester hours required)

| | |
|-----------------------------------------------------|---|
| MHS 5200 Use and Interpretation of Tests* | 3 |
| MHS 6220 Individual Psycho-Educational Testing | 3 |
| EEX 5211 Psycho-Educational Diagnosis/Prescriptions | 3 |
| PSY 6317 Advanced Psychological Testing | 3 |

Career Information (3 semester hours required)

| | |
|--------------------------------------|---|
| MHS 5340 Career Development Systems* | 3 |
|--------------------------------------|---|

Learning/Human Development/Personality Theory

(3 semester hours required)

| | |
|----------------------------------------------------------------|---|
| MHS 6050 Personality Theory and Counseling | 3 |
| EDF 5211 Advanced Educational Psychology | 3 |
| EDF 5219 Modalities of Learning and Human Development | 3 |
| MHS 5420 Human Development and Learning Theories in Counseling | 3 |

Counseling Techniques (12 semester hours required)

| | |
|---------------------------------------------------|---|
| MHS 5400 Theories and Techniques of Counseling* | 3 |
| MHS 5500 Group Theory and Practice* | 3 |
| MHS 5428 Counseling Clients with Special Needs | 3 |
| MHS 6430 Family Counseling | 3 |
| MHS 6470 Human Sexuality and Counseling | 3 |
| MHS 6800 Practicum in Counseling* | 3 |
| MHS 6930 Special Topics in Mental Health Services | 3 |

Consultation (3 semester hours required)

| | |
|-------------------------------|---|
| MHS 6600 Consultation Skills* | 3 |
|-------------------------------|---|

Legal and Ethical Issues (3 semester hours required)

| | |
|---------------------------------------------------------|---|
| MHS 5780 Legal/Ethical Issues in Counseling Profession* | 3 |
|---------------------------------------------------------|---|

Psychopathology

| | |
|----------------------------------------|---|
| MHS 6070 Psychopathology in Counseling | 3 |
|----------------------------------------|---|

Internship/Clinical Experience (3-6 hours required)

| | |
|-------------------------------------------------|---|
| SDS 6820 Supervised Internship: School Guidance | 3 |
| SDS 6830 Supervised Internship: School Guidance | 3 |
| MHS 6830 Supervised Clinical Field Experience | 3 |
| MHS 6831 Supervised Clinical Field Experience | 3 |

Electives (number of hours varies)

Thesis Option (1-6 semester hours)

| | |
|-----------------|-----|
| SDS 6970 Thesis | 1-6 |
|-----------------|-----|

** Required valid teaching certificate or passing scores on FTCE

* A minimum of 48 semester hours must be completed for the master's degree.

* Students whose undergraduate degree is not in education must take RED 5336 and TSL 5700.

Elective Track Non-Teacher Mental Health Counseling

An option for licensure in mental health counseling is provided for students who do not plan to work specifically in a public or private school setting (Pk-12). Students follow the core program, but must take these additional courses: MHS 6830, MHS, 6831, MHS 5428, MHS 5620, MHS 6070, MHS 6470 and MHS 6930. In addition, students must adhere to any changes instituted by the State of Florida's Licensing Board for mental health counselors.

Clinical Field Experience

Students may choose the field experience setting appropriate for their career objective. They must complete 1,000 hours of practicum and internship experiences under a licensed mental health professional. The records of students who opt for the mental health track will be appropriately identified "Non-Teacher Education Approved Program."

COURSE DESCRIPTIONS

EEX 5211: PSYCHO-EDUCATIONAL/DIAGNOSIS AND PRESCRIPTION (3) Focus is on developing and implementing psycho-educational prescriptions for students/clients within context of services performed by guidance counselors, school psychologists, and other facilitating professionals.

MHS 5005: INTRODUCTION TO GUIDANCE SYSTEMS (3) Emphasis is on the philosophical, sociological contexts from which the need for guidance arises. Analysis of the nature and function of guidance services/processes in various helping settings.

MHS 5200: USE AND INTERPRETATION OF TESTS (3) Provides opportunity to develop competencies in the techniques of selecting and interpreting test results. Emphasis is placed upon drawing implications of psychological and educational data collected on the individual from group comparisons.

MHS 5340: CAREER DEVELOPMENT SYSTEMS (3) Systematic study of the nature and significance of career development, basic theories and models of career choice, information resources and services, career education practices.

MHS 5400: THEORIES AND TECHNIQUES OF COUNSELING (3) Emphasis is on counseling theories/psychotherapeutic techniques, with concentration on reviewing and analyzing concepts, practices, applications, and relevant issues involved in the helping relationship.

MHS 5420: HUMAN DEVELOPMENT AND LEARNING THEORIES IN COUNSELING (3) Emphasis is on human development and learning theories and their relationship in understanding psychological dynamics inherent in the therapeutic process.

MHS 5428: COUNSELING CLIENTS WITH SPECIAL NEEDS (3) Application of counseling theory pertaining to the psychological, sociological, cultural and physical issues which affect clients with special needs. Issues considered are clients with alcohol, drug, health, educational, and psychological problems.

MHS 5500: GROUP THEORY AND PRACTICE (3) Emphasis is upon concepts, techniques, and processes used in group guidance and group counseling situations. Prerequisite: MHS 5400

MHS 5620: ORGANIZATION AND ADMINISTRATION OF HUMAN SERVICES (3) Analysis of administrative systems in K-12 schools, higher education, agencies, and institutions with emphasis on structure, management, facilities, budget, personnel, and leadership for optimizing human services.

MHS 5780: LEGAL AND ETHICAL ISSUES IN COUNSELING (3) Emphasis is on the counselor's functions within the context of legal and ethical mandates. Issues considered are: concepts/terminology in the legal system, structures and functions, confidentiality, assessment, liability, records, students' rights, discipline, abuse/neglect, and codes of ethics.

MHS 5905: DIRECTED INDIVIDUAL STUDY (VARIABLE 1-6) Advanced students who demonstrate sufficient interests and skills are approved to take individual study in various areas of counseling. Permission of instructor required.

MHS 6050: PERSONALITY THEORIES AND COUNSELING (3) Focus is on the relationship of traditional and multicultural theories of personality and their relationship to the theoretical orientations and professional techniques of counseling theories. Emphasis is on the application of theories to the understanding and explanation of human behavior and mental health issues as well as the therapeutic interventions.

MHS 6070: PSYCHOPATHOLOGY IN MENTAL HEALTH SERVICES (3) Emphasis is on the mental health service providers in school and non-school settings who must understand: boundaries between normality and disorder; differences/ similarities within disorders; similarities/differences between child and adult disorders; and causal relationships inherent in disorders.

MHS 6220: INDIVIDUAL PSYCHO-EDUCATIONAL TESTING (3) Professional use of individual psychological assessments. Emphasis on administration, scoring, and interpreting individual mental tests (Wechsler Scales/ Binet Scale) as well as other tests used in individual assessments batteries. Permission of instructor required; fully admitted status. Prerequisite: MHS 5200

MHS 6430: FAMILY COUNSELING (3) Designed to help professionals acquire knowledge and basic competencies in marriage and family therapy. Focuses on the family as a system; its psychodynamic, cognitive/behavioral, humanistic/existential and transpersonal perspectives.

MHS 6470: HUMAN SEXUALITY IN COUNSELING (3) Focuses on reliable information and proposed skills which facilitate appropriate sexual development and responsible sexual behavior. Emphasis is on human sexuality and intimacy, wellness, family, creativity, and the quality of life during the developmental history of each person being served by effective counselors.

MHS 6600: CONSULTATION SKILLS (3) Emphasis is upon theory and skills involved in the consultation processes. Various consultation models are explored in depth with clinical type activities to demonstrate competencies.

MHS 6800: PRACTICUM IN COUNSELING (3) Experiences individual and group counseling with emphasis on student's performance in implementing a model of counseling. Prerequisite: All foundations courses; fully admitted status.

MHS 6830: SUPERVISED CLINICAL FIELD EXPERIENCE (3) Experiences in realistic settings for the demonstration and observation of competencies inherent in the professional work of therapeutic agents. Permission of instructor required. Prerequisite: All foundation courses; fully admitted status.

MHS 6831: SUPERVISED CLINICAL EXPERIENCE (3) Experiences in realistic settings for the demonstration and observation of competencies inherent in the professional work of therapeutic agents. Permission of instructor required. Prerequisite: All foundations courses; fully admitted status.

SDS 5011: ELEMENTARY GUIDANCE SYSTEMS (3) Emphasis is on guidance functions in the elementary school; counselor's roles as therapists, behavioral analyst, diagnostician, consultant, role model; professional responsibilities such as counseling, evaluating, observing, prescribing, and consulting.

MHS 6930: SEMINAR: SPECIAL TOPICS IN MENTAL HEALTH SERVICES (3) Course centering around topics of current interests in the area of mental health services. Focus may vary from semester to semester, but all topics will center on the therapeutic relations inherent in effective counseling; topics included are as follows: alcohol abuse, substance abuse, violence, AIDS/HIV, death/dying, human sexuality, and Limited English Proficiency (LEP/ESOL) clients.

SDS 6820: SUPERVISED INTERNSHIP: SCHOOL GUIDANCE (3) Experiences in realistic settings for the demonstration and observation of competencies inherent in the professional work of school counselors. Permission of instructor required. Valid teaching certificate or passing scores on FTCE or NTE. Prerequisite: All foundation courses; fully admitted status.

SDS 6830: SUPERVISED INTERNSHIP: SCHOOL GUIDANCE (3) Experiences in realistic settings for the demonstration and observation of competencies inherent in the professional work of school counselors. Permission of instructor required. Prerequisite: All foundation courses; fully admitted status; valid teaching certificate or passing scores on the Florida Teacher Certification Examination or National Teacher's Examination.

SDS 6970: Thesis (1-6)

Educational Leadership Master of Education/Master of Science/Doctor of Philosophy

The program in educational leadership offers a planned sequence of experiences designed to develop leadership skills essential to the improvement of administration and supervision in schools, and other educational entities. Emphasis is placed upon increased understanding of the school management function. Course work and engagements provides a unique setting for preparation for multicultural leadership. Curricula are designed to prepare the student for entry-level administrative posts in school systems (Level 1 for Florida Certification) for professional development and improvement, and for leadership positions in other educational entities.

Masters of Education and Master of Science

Admissions Requirements

An applicant must:

1. Meet all university admission requirements for graduate study: i.e., 3.0 GPA in last 60 hours of undergraduate work or a score of 1,000 on the GRE (verbal and quantitative subtests)
2. Declare in writing his/her intention to major in educational leadership;
3. Present three (3) letters of recommendation that should address the applicant's personal and professional qualities;
4. Receive approval as an educational leadership major by the coordinator and the educational leadership department chairperson.

Curriculum Guide (for students seeking master's degree)

| | Semester Hours |
|----------------------------------------------------------------------|----------------|
| Foundations | .3 |
| EDF 5481 Introduction to Educational Research | .3 |
| Educational Leadership Core | .33 |
| EDA 5051 Overview of Educational Administration | .3 |
| EDA 5201 School Business Management | .3 |
| EDA 5222 Personnel Administration in Education | .3 |
| EDA 5232 Legal Aspects of Education | .3 |
| EDA 5195 Educational Leadership II | .3 |
| EDA 5510 Principles of Elementary School Administration or | |
| EDA 5530 Principles of Secondary School Administration | .3 |
| EDA 5940 Internship in Educational Administration | .3 |
| EDA 5193 Educational Leadership Instruction | .3 |
| EDA 5217 Communication Techniques | .3 |
| EDA 5275 Application of Technology in Educational Leadership | .3 |
| EDG 6250 Curriculum Design and Development | .3 |
| TSL 5700 ESOL Issues and Strategies for other Professional Educators | .3 |

Note: If mastery of four ESOL standards can be demonstrated through previous ESOL in-service then candidates may take another curriculum or foundations course.

Areas of Emphasis3

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.

*** Required near completion of program.

**** Course Requirements are subject to change in accordance with state and federal mandates.

*****The master's degree in Educational Leadership requires 39 semester hours of prescribed course work.

1. Student must have completed 39 hours of course work to enroll.

(Add-on Educational Leadership Certification Program)

Admission Requirements

(For students with Master's degrees seeking certification in Educational Leadership)

Applicants must:

1. Complete application for admission to graduate program;
2. Declare in writing his/her intention to seek certification in educational leadership;
3. Hold a masters degree or higher;
4. Present three (3) letters of recommendation that address the appli-

cant's personal and professional qualities;

Completion Requirements

A minimum program of twenty-one (21)**** semester hours of educational leadership courses selected from the following. Other courses may be required.

| | |
|---------------------------------------------------------------|--------|
| EDA 5051 Overview of Educational Administration or | |
| EDA 5191 Leadership in Education: Theories and Practices |3 |
| EDA 5201 School Business Management |3 |
| EDA 5222 School Personnel Administration |3 |
| EDA 5232 Legal Aspects of Education |3 |
| EDA 5510 Principles of Elementary | |
| School Administration |3 |
| -or- | |
| EDA 5530 Principles of Secondary School Administration |3 |
| EDA 5217 Communication Techniques |3 |
| EDA 5275 Application of Technology in Educational Leadership |3 |
| EDG 6250 Curriculum Design and Development |3 |
| TSL 5700 ESOL Issues and Strategies for Other Prof. Educators |3 |
| EDG 6250 Curriculum Design and Development |3 |

Note: All courses listed are required for completion of the Modified program. Six (6) hours curriculum and six (6) hours foundation courses required if appropriate courses not previously taken. The total number of semester hours for the modified program may vary from 24 to 36 semester hours.

** Course requirements are subject to change in accordance with state mandates.

*** Students must pass the Florida Educational Leadership Examination before they can graduate and a Department Comprehensive Examination.

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 5191 Leadership in Education: Theories and Practices (3) This course focuses on leadership theories that have been developed through studies in business, education, industry and the military will be examined and application made to educational practices.

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 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 5216 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.

EDA 5530 Principles of Secondary School Administration (3) Skills needed for middle school and high school based management leadership for grades 5-12.

EDA 5905 Directed Individual Study; Educational Leadership (Variable 1-6) Permission of instructor only. Advance 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. Available through participating systems and supervised by university personnel as student administers some aspect of an educational program and issues in leadership for public and non-public schools. Periodic reporting, classes, and on-campus conferences required and issues in leadership for public and non-public schools.

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.

Educational Leadership Doctor of Philosophy

The Ph.D. Program in Educational Leadership has been designed as a non-traditional program to insure the academic success of qualified individuals who are interested in serving in rural and urban settings. The full time program is designed to move students to Ph.D. candidacy in two years. Given the developmental focus of this program, transfer credit will not be accepted. Student cohorts are admitted once each year in the fall semester.

This program will enable graduates to pursue leadership career opportunities in educational settings and organizations involved with education-related issues. The program is designed to provide professionals with theoretical and practical knowledge that will enable them to be effective change agents and successful program managers, – particularly in schools, higher education and agencies that serve the needs of minority and at-risk populations.

This unique program is organized in the cohort format based upon the constructivist philosophical foundation. Inter-and intra-personal development and cultural factors are identified as essential elements for effective leadership and are emphasized as part of the doctoral program. A strong emphasis is also placed upon acquisition of theoretical content and research methodology.

Program Requirements

Admissions

Applications for admission into the Ph.D. program in Educational Leadership should be submitted to:

The Department of Educational Leadership and Human Services
Department Chairman
Florida A&M University
308 GEC-B
Tallahassee, FL 32307-4900

Students must also 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. The application deadline for fall admission is December 31st. For students who wish to apply for fellowships or assistantships, financial aid paperwork must be submitted as soon after acceptance into the program as possible. Admission decisions

will be made Spring Semester of each academic year, with notification to accepted students also in the Spring Semester. Submission of a completed application does not guarantee admissions. Applications are evaluated based upon a calculated formula.

Applicant must submit:

1. A completed graduate application (applicants who have never attended FAMU complete FAM 5100 and mail it to the Department of Educational Leadership and Human Services Chairman with a \$20.00 non-refundable application-processing fee; FAMU graduates and former students must complete Readmission Form FAM 5101). No fee is required when submitting FAM 5101.
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. Transcripts should be mailed to the Department of Educational Leadership and Human Services Chairman.
3. An official copy of results of the Graduate Record Examination (taken within the last five years).
The application form and official transcripts must be submitted to the Department of Educational Leadership and Human Services Chairman. The following additional items must be submitted to:
Dept. of Educational Leadership & Human Services
Attn: Educational Leadership Ph.D. Admissions
Florida A&M University
GEC-B, Room 308
Tallahassee, Florida 32307-4900
4. A current resume.
5. Three letters of reference from professionals who can assess the applicant's ability to succeed in a doctoral program. Students must request these and include them as part of their application packet.
6. 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.
7. Copies of teaching or other professional certificates. A Teaching certificate IS NOT required for admission to this program.
8. Samples of any published work completed by the applicant.

Course of Study

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 credit. The minimum total of 69 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 and leadership, and technological applications in research and leadership. Cohort participants enroll in courses as a group. The program faculty determines courses for each cohort. Within each course, students are encouraged to focus the problem-centered learning experiences on their specific area of interest.

Course Descriptions

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.

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 effect leadership in order to promote constructive change.

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 communi-

ty 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 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.

EDA 6271: Computers & Leadership (3) Allows decision-makers to explore, select, use, and maintain a variety of methods, software, and tools that will enhance their leadership competencies in teaching/learning environments.

EDA 6276: Research & Data Analysis for Educational Managers (3) Reviews and expands upon research methods and the analysis of data. The course focuses on integrating and applying these techniques to practical situations as a means of improving education.

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 6421: Advanced Research Methods (3) Provides the opportunity for students to learn and apply appropriate quantitative methodologies for use in educational settings.

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. Diversity among individuals and groups is a specific focus in this course.

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 (3) provides an in-depth explorations 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 on 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 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: Quantitative 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 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.

EDA 7947: Advanced Administrative Internship (3) Offers opportunities for students to explore effective leadership styles under the supervision of an experienced and effective educational leader at an educational site. Follow-up seminars will provide opportunities to expand upon these experiences with faculty, co-learners, leaders of business and industry, and successful practitioners in education

EDA 7980: Dissertation (variable 1-6) Affords doctoral students 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.

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.

EDH 6631 Board Relations in Postsecondary Institutions (3) Examines ways to develop and enhance relationships with governing board in higher education.

EDH 6632 Postsecondary Culture Seminar (3) Compares and contrasts the culture of postsecondary institutions and the leadership roles of presidents, administrators, faculty, support staff, and auxiliary staff.

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.

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.

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 span three core areas:

Semester hours

Common Professional Core

| | |
|-----------------------------------------------------------------------------------------|----|
| EDA 6216 Leadership & Communication Technologies in Teaching/Learning Organizations ... | .3 |
| EDA 6271 Computers & Leadership | .3 |
| EDA 6276 Research & Data Analysis for Educational Managers | .3 |
| EDA 6278 Self & Interpersonal Contexts in Teaching/Learning Organizations | .3 |
| EDA 6421 Advanced Research Methods | .3 |

Educational Leadership Core

| | |
|---------------------------------------------------------------------------------------------------|----|
| EDA 6061 Effective School Organizations or EDH 6631 Board Relations in Postsecondary Institutions | .3 |
| EDA 6064 Organizational Behavior in Educational Settings | .3 |
| EDA 6191 Race, Class, and Gender: Policy Issues in Leadership | .3 |
| EDA 7062 Diagnosing & Creating Effective Organizations | .3 |
| EDA 7220 Personnel Issues in Adult Education Enterprises | .3 |
| EDA 7224 Organizational Development and Human Resources | .3 |
| EDA 7233 Legal Issues in Educational Policy | .3 |
| EDA 7280 Curriculum & Public Policy | .3 |
| EDA 7405 Quantitative Research Methods I | .3 |
| EDA 7406 Quantitative Research Methods II | .3 |
| EDA 7415 Qualitative Research Design | .3 |

Specialty Core

| | |
|--------------------------------------------------------------------------------|----|
| EDF 6074 Comparative Leadership Issues Among Rural, Urban & Suburban Districts | .3 |
| EDA 6215 School and Community Relations or EDH 6632 Postsecondary | |

| | |
|----------------------------------------------------------------------------|------------|
| Culture Seminar | .3 |
| EDA 6260 Facilities & Other Auxiliary Services | .3 |
| EDA 7406 Qualitative Research Methods II | .3 |
| EDH 6635 Overview of Higher Education Administration | .3 |
| EDH 7307 Curriculum, Instruction and Distance Learning in Higher Education | .3 |
| TOTAL | .54 |

Students must complete 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 mandates.

Graduation Requirements

The requirements for graduation from the Ph.D. Program in Educational Leadership are:

1. the successful completion of 18 courses and a minimum of 15 dissertation credit hours in the Common Professional and Educational Leadership Cores and 3 courses in the specialty core;
2. a minimum 3.00 cumulative grade point average;
3. evidence of successful integration of program content through the successful completion of the doctoral comprehensive examination and the defense of the dissertation prospectus, and
4. the successful completion and defense of the dissertation.

Note that the dissertation work may add to the minimal course requirement for degree completion.

Department of Elementary Education

Graduate Faculty

Professors: Lemons, Robert; Mercer, Walter; Smith, Marian
Associate Professors: Ansley, Thyria; Bauman, Gail; Dixon, Gwendolyn; Fontaine, Nancy; Manson, Tony; Smith, Marian
Assistant Professor: Thomas, Patty

Elementary Education Master of Education/Master of Science

Admission Requirements

An applicant must:

1. Take GRE,
2. A combined score of 1000 or higher on the verbal and quantitative sections of the Graduate Record Examination, or
3. A 3.0 cumulative grade point average covering the last 90 quarter hours or 60 semester hours of undergraduate courses.
4. Hold a baccalaureate degree from an accredited college or university.
5. Declare in writing his or her intention to major in elementary education.
6. Present three letters of recommendation that speak of his or her personal and professional qualities.
7. Receive approval as an elementary education major by the program coordinator and department chairperson.

Curriculum Guide

Sem.Hrs.

| | |
|------------------------------------------|----|
| <u>Foundations of Education</u> | .6 |
| EDF 5211 Advanced Educational Psychology | .3 |

| | |
|------------------------------------------------------------------------------------------------------------|----|
| EDF 5543 Philosophical Foundations of Education | 3 |
| or | |
| EDF 5608 Sociological Foundation of Education | 3 |
| <u>Curriculum and Methods Series</u> | 18 |
| EDE 5225 Elementary School Curriculum Design and Development | 3 |
| EDE 5262 Career Education and the Elementary School Teacher | 3 |
| EDE 5308 Theory, Utilization and Production of Instructional Materials for the Elementary School | 3 |
| EDE 5395 Problems in Instruction in the Elementary School | 3 |
| EDE 5815 Emergent Trends in Teaching the Basics | 3 |
| RED 5747 Curriculum and Research in Reading | 3 |
| <u>General Professional Training</u> | 6 |
| EDE 5930 Seminar in Elementary Education | 3 |
| EDF 5481 Introduction to Educational Research | 3 |
| XXX XXXX Comprehensive Examination | 0 |
| Electives* | 6 |
| *Six (6) semester hours of electives are to be selected with the approval of the student's advisor. | |
| Summary | |
| Foundations of Education | 6 |
| Curriculum and Methods Series | 18 |
| General Professional Training | 6 |
| Electives | 6 |
| Total | 36 |

Course Descriptions

EDE 5225 Elementary School Curriculum Design and Development (3) Basic principles of curriculum planning including theory, structure, content and implementation.

EDE 5262 Career Education and the Elementary School Teacher (3) Focuses on helping teachers attain career education teacher competencies. An examination will be made of processes by which student learner outcomes in career education may be attained.

EDE 5308 Theory, Utilization and Production of Instructional Materials for the Elementary School (3) Developing appropriate instructional materials and using both hardware and software for the purpose of meeting the learning style of all students. Emphasis will be placed on training inservice teachers to show competency in the use of varying instructional practices which will meet the emotional, physical, and intellectual needs of students.

EDE 5395 Problems of 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 5906 Directed Individual Study (1-12) Independent study in which students must have written agreement with the University professor who agrees to supervise the study to be undertaken.

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.

EED 5215 Behavior Management of the Emotionally Disturbed (3) Prereq: EEX 4010 or EEX 5011; EED 6115. Techniques of stimulus control, shaping new behaviors, increasing, maintaining, reducing behaviors,

group contingencies, contracting, and precision teaching appropriate for the emotionally handicapped student.

EED 5245 Curriculum Development and Implementation for the Emotionally Disturbed (3) Prereq: EEX 4010 or EEX 5011. Nature and needs, characteristics, identification procedures, placement and delivery of services to the emotionally handicapped population to insure appropriate educational programming.

EED 6115 Educational Planning and Programming for the Educational Needs of the Emotionally Disturbed (3) Prereq: EEX 4010 or EEX 5011. Classroom management, methods and techniques for the emotionally handicapped student; classroom design for implementing individualized instruction.

EEX 5051 Educating Exceptional Students (3) Surveys range of exceptionalities (gifted, mentally retarded, learning disabled, motor handicapped, etc.) and methods of providing educational experiences for each type of individual. Field experience required.

EEX 5211 Psycho-Educational Diagnosis/Prescription (3) Training in psycho-educational assessments. Emphasis on administration, scoring, interpreting individual mental tests (Wechsler Scales and Binet Scale) as well as other tests used in individual assessment batteries. Required for certification in school psychology.

ELD 5045 Seminar in Special Education for the Mainstreamed (3) Various conceptual and/or theoretical models related to mainstreaming are reviewed; current trends and issues related to the education of children with specific learning disabilities.

LAE 5319 Foundations of Language and Cognition (3) This course will assist students in acquiring specific understanding of reading as a process of student engagement in both fluent decoding of words and the construction of meaning. This course addresses the Florida Department of Education reading endorsement competency: "Has substantive knowledge of language structure and function and cognition for each of the five major components of the reading process;" state (Just Read! Florida) and (federal) No Child Left Behind Act 2001 requirements that all teachers have high quality skills to provide scientifically-based reading instruction for all students.

MAE 5116 Teaching Mathematics in Elementary School (3) Includes an examination of current trends in methods of instruction; use of printed and manipulative materials; research, and curricula in mathematics teaching K-7.

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.

RED 5247 Supervision in Reading (3) This course is designed for students to demonstrate knowledge of effective research-based instructional methodology to prevent reading difficulties and promote the acceleration of reading progress for students who are struggling, including those with disabilities and from diverse populations. Further, the practicum component will be used to obtain practical experience in increasing the reading performance of students with the prescription and utilization of appropriate strategies and materials based upon scientifically based reading research to address the prevention, demonstration of differentiated instruction, identification and remediation of reading difficulties.

RED 5345 The Improvement of Reading (3) Designed for inservice or prospective school teachers to study developmental reading. Focuses on special problems, curriculum, materials, and equipment.

RED 5546 Reading Instruction for Students with Disabilities (3) This course addresses the fourth reading competencies: 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.

RED 5547 Reading Diagnosis and Improvement II (3) Prereq: RED 5546. Continuation of RED 5546, with emphasis on improvement of reading in light of recorded data and findings of research; instructional materials and procedures appropriate for each child.

RED 5549 Foundations of Assessment (3) This course addresses the third reading competency: 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 student's response to interventions.

RED 5747 Curriculum and Research in Reading (3) Critical review of the recent research in reading as it relates to reading curriculum in the elementary school.

RED 5925 Workshop in Reading (6) Intensive summer experience designed for in-service teachers and tailored to needs of individuals teaching at any level, K-12.

RED 5858 Educational Clinic in Reading (3) Deals with the nature and causes of reading disabilities as well as the development of clinical skills related to the diagnosis and evaluation of reading difficulties, including laboratory experiences.

SCE 5116 Elementary School Science (3) Refines scientific concepts, principles, and generalizations utilizing new, innovative science programs with special emphasis on S-APA, SCIS and ESS.

SCE 5930 Seminar in Elementary Science (3) Lectures and laboratory experiences designed to provide opportunities to acquire techniques for teaching science to children and young adolescents and to develop learning activities and instructional units for classroom use.

Pre-Kindergarten/Primary Education (Age Three Through Grade Three) Track Course of Study

| | |
|------------------------------------------------------|-----------|
| Professional Core | Sem. Hrs. |
| EDF 5543 Philosophical Foundation of Education | 3 |
| EDF 5481 Educational Research | 3 |
| EEC 5705 Advanced Child Development | <u>3</u> |
| | 9 |

| | |
|----------------------------------------------------------------------------------------------------------------|-----------|
| Content and Methods | Sem. Hrs. |
| EEC 5405 Family and Community Partnerships in Education | 3 |
| EEC 5605 Guiding and Managing Behavior | 3 |
| EEC5206 Developmentally Appropriate Practices for Young Children: Curriculum Planning and Implementation | 3 |
| RED 5116 Foundations of Reading Instruction | 3 |
| ELD 5045 Seminar in Special Education | 3 |
| EEC 5730 Health, Safety, and Nutrition of Young Children | 3 |
| EEC 5612 Assessment of Young Children | <u>3</u> |
| | 21 |

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Electives | Sem. Hrs. |
| EEC 5304 Developmentally Appropriate Practices: Creative Expression and Culture (Other courses may count as this elective based on the approval of Early Childhood Education faculty advisors. These courses must be appropriate to the field of study and include curriculum and methods of children ages three through eight.) | 3 |

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| EEC 5615 Current Issues and Trends of the Education of Young Children (Other courses may count as this elective based on the approval of Early Childhood Education faculty advisors. These courses must be appropriate to the field of study and include curriculum and methods of children with special needs ages three through | 3 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|

| | |
|--------------|-----------|
| eight.) | 6 |
| TOTAL | 36 |

Courses Leading to Certification

EEC 5206 Developmentally Appropriate Practices for Young Children: Curriculum Planning and Implementation (3) This course provides an overview of basic concepts, goals, and principles underlying development of good programs, plus administrative and supervisory considerations

EEC 5304 Developmentally Appropriate Practices: Creative Expression and Culture (3) This course teaches techniques for teaching all areas of the early childhood curriculum so that these areas may be learned more creatively

EEC 5405 Family and Community Partnerships in Education (3) The course will provide students with a knowledge base to understand and work effectively with families, schools and communities in building partnerships for educating children. It offers students the opportunity to become familiar with the dynamic relationships between families, educational systems and the community. It emphasizes the importance of culture, values and family structure on home-school collaborations, and provides the foundation and skills for designing and implementing effective and creative strategies to enhance home, school and community partnerships. In addition, the course will provide students with knowledge concerning early childhood education. Included will be a historical perspective and current status of early childhood education, effective programs and practices, curricula area, and teacher professional development. Salient topics include: the home and family child rearing practices; parent involvement; community agencies, parent-teacher conferences; home visits, professional ethics; interagency collaboration; components of successful change; best practices program models; community assessments; and evaluation of school-linkages

EEC 5605 Guiding and Managing Behavior (3) This course identifies and analyzes theories, programs, and essential components in classroom management. Explores techniques for classroom teachers to use in developing a child study with emphasis on educational implications.

EEC 5612 Assessment of Young Children (3) This course is designed to assist the primary teacher and primary specialist to understand the processes of and methods for screening, assessing and assignment of preventative, developmental and enrichment strategies for primary children.

EEC 5615 Current Issues and Trends of the Education of Young Children (3) This course identifies issues and trends in the area of early childhood education and addresses possible causes and relationship.

EEC 5705 Advanced Child Development (3) The course will provide students with a knowledge base on 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; parent-hood; nutrition; sensory and perceptual development; skill development; intelligence; attachment; illness and health; disabilities, peer relations; family relations; puberty; and childhood and adolescent problems.

EEC 5730 Health, Nutrition and Safety (3) This course fulfills the health, safety and nutrition requirement for pre-kindergarten / primary certification. It includes methods for establishing and maintaining a healthy and safe environment for young children, for providing nutritious meals and snacks, and for facilitating health, nutrition and safety activities for children.

EDF 5481 Introduction to Education Research (3) Methodology of research in behavioral sciences, documentation, measurement, data analysis and reporting. Students evaluate existing research and design new studies.

EDF 5543 Philosophical Foundations of Education (3) Major philosophies of education with emphasis on developing skills in using tools and techniques of philosophy in analyzing education theories, concepts and issues.

ELD 5045 Seminar in Special Education (3) This course provides information on theories and methods for assessing children age three

through eight with special needs, for planning and facilitating curriculum activities, and for working with families and community resources. It also includes special topics for current interest in regard to laws, policies and procedures for children with special needs.

RED 5116 Foundations of Reading Instruction (3) This course provides a critical review of issues in reading as they relate to the reading curriculum in the elementary school and to the teaching of reading in the 21st Century. Teachers are also exposed to ideas on just what an effective teacher of reading actually does to positively influence children's reading performance. These two important emphases... teachers' effectiveness and reading comprehension... are interwoven throughout this course. In addition, broad-based coverage provides multiple perspectives and essential topics for teaching reading in the elementary school. Incorporated in the coverage are discussions based on the recommendations of learned societies and accrediting agencies as: the Florida Adopted Subject Area Competencies, The International Reading Association, Florida Generic Teaching Competencies and the Association of Childhood Education International (ACEI).

Department of Health, Physical Education and Recreation

Graduate Faculty

Professors: Chandler, Steve; Ramsey, Joseph; Thompson, Barbara
Associate Professor: Jackson, Jr., E. Newton
Assistant Professor: Hickey, Brian; Sermon, Janet; Sherrod, E. Gaynell

Physical Education

Master of Education/Master of Science

The graduate program provides the student intensive training in theory and research in sport management. The program allows flexibility for individual students and encourages interdisciplinary endeavors. Students receive training and experience in sport and leisure management.

Program of Study

The Master of Education (non-thesis) program of study requires a minimum of thirty-six (36) semester credits, including courses in the basic core and area of specialization. The Master of Science degree program requires a minimum of thirty (30) semester credits and a thesis (6 semester credits).

Admission Requirements

Admission to the graduate program is open to qualified students with a bachelor's degree or its equivalent in physical education or related field. Applicants are requested to submit a complete set of official transcripts, at least three letters of recommendations, resume and a brief statement of interest and goals. In addition, the applicant must meet the following minimum requirements for admission:

1. Possession of an undergraduate or graduate degree from an accredited institution of higher education.
2. A combined score of 1000 or higher on the verbal and quantitative sections of the Graduate Record Examination.
OR
3. A 3.0 cumulative grade point average covering the last ninety (90) quarter hours or sixty (60) semester hours of undergraduate courses.

Course Requirements

The program in Physical Education requires at least the bachelor's degree in health, physical education, recreation, sport management, fitness or related field of study. The courses for the program of study are as follows:

- a) core requirements- courses specific to area are required;
- b) supporting courses- required in the area of education;
- c) elective courses- free choice to complete the total hours.

| Core Requirements - Sports/Leisure Management | Sem. Hrs. |
|--------------------------------------------------------------------------|-----------|
| PET 5216 Psychosocial Basis of Physical Activity | 3 |
| PET 5465 Marketing and Fundraising for Sports/Leisure Programs | 3 |
| PET 5466 Theory and Practice of Sport/Leisure Management | 3 |
| PET 5477 Personnel Management in Sport and Leisure Programs | 3 |

| | |
|--------------------------------------------------------------|----|
| PET 5478 Legal Issues of Sports/Leisure Management | 3 |
| PET 5479 Sport and Leisure Facilities Management | 3 |
| PET 5947 Internship in Sport/Leisure Management | 3 |
| PET 5535 Research Methods in Physical Education | 3 |
| Any 12 hours of Supporting Courses | 12 |

Supporting Courses

| | |
|-------------------------------------------------------------|---|
| EDA 5051 Overview of Educational Administration | 3 |
| EDA 5201 School Business Management | 3 |
| EDA 5262 Planning Educational Facilities | 3 |
| EDF 5136 Adolescent Psychology | 3 |
| EDF 5481 Introduction to Educational Research | 3 |
| EDF 5543 Philosophical Foundations of Education | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| EDG 5706 Human Relations Skills | 3 |
| EDG 5791 Seminar in Multicultural Education | 3 |
| EDS 5130 Supervisory Techniques and Practice | 3 |
| EDS 5915 Seminar in Supervisory and Research | 3 |
| EME 5403 Fundamental Computer Concepts and Skills | 3 |
| EME 5420 Microcomputers for School Administrators | 3 |

Electives

| | |
|------------------------------------------------------|---|
| PET 5419 Supervision of Physical Education | 3 |
|------------------------------------------------------|---|

Graduate Course Descriptions

DAE 5320 Teaching Contemporary Dance (3) Emphasis is placed on developing teaching strategies and methodologies in presenting a variety of modern dance techniques, improvisations, compositions and critical analysis of dance performance for grades K-12.

DAE 5365 Methods of Teaching Ethnic Dance (3) Basic approaches to acquiring strategies and methods for the teaching of ethnic dance, grades K-12, with application for teachers to meet the fine arts high school graduation requirement in the area of dance.

HLP 5302 Supervision of Health and Physical Education (3) Techniques of supervision with emphasis on factors influencing needs and types of supervisory techniques on state, county, and local levels.

HLP 5495 Seminar: Readings and Current Literature in Health, Physical Education and Recreation (3) Introduction to new books, periodicals, and research and writing in field.

HLP 5905 Directed Individual Study (Variable 1-5) Designed for graduate students to engage in independent study in health, physical education, or leisure. Permission of the instructor and chairperson is required.

HSC 5305 Health Education in High School (3) Understanding principles of organization of school health programs, health programs, and the health curriculum for grades 9-12.

HSC 5307 Health Education in Middle School (3) Understanding principles of organization of school health programs, health programs, and the health curriculum for grades 6-8.

HSC 5317 Health Education Curriculum (3) Analysis of school health instruction program in the elementary and secondary schools.

HSC 5335 Problems in School Health Service (3) Emphasis on recognition and evaluation of pertinent health problems confronting schools and communities.

HSC 5633 Issues in Health (1) Critical analysis of issues in health which have influenced or should have influenced health teaching. Emphasis on problems, trends, issues in public and community health.

HSC 5904 Global Health Issues (3) Designed to explore issues, trends, problems, innovations and discoveries of health around the world.

PET 5145 Problems in Physical Education (3) Policies, physiological, and sociological problems are discussed with reference to physical education.

PET 5165 History and Philosophy of Physical Education and Sports (3) Nature, meaning, and objectives of profession.

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 5315 Analysis of Human Motion (3) Structural responses of body during movement, with special reference to anatomical and mechanical principles underlying performance of sport skills.

PET 5405 Administration in Physical Education (3) Organization and administration of physical education, athletics, health education, safety education, and recreation in schools, colleges, and community. Emphasis on administrative theory as applied to physical education and sports.

PET 5419 Supervision of Physical Education (3) Supervisory activities of county and city supervisors or programs. Emphasis on effective techniques for working with groups, relationships with local and state personnel, and techniques for evaluation of programs.

PET 5436 Physical Education Curriculum for the Elementary School (3) Aims, objectives, and procedures for curriculum construction for the elementary school. Factors affecting curriculum. Criteria for selection and evaluation of activities.

PET 5447 Physical Education in Middle and Secondary Schools (3) Aims, objectives, and procedures for curriculum design in grades K-12.

PET 5456 Teaching Physical Education: Application and Analysis (3) Application and analysis of teaching physical education at both levels (elementary and secondary). Emphasis on appropriateness and implications of teaching models.

PET 5465 Marketing and Fundraising for Sport/Leisure Programs (3) Explore a variety of proven methods of generating money and enthusiasm for sport, recreation and leisure programs.

PET 5466 Theory and Practice of Sport/Leisure Management (3) Practical application of management science to all realms of sport industry.

PET 5475 Principles of Sports and Leisure Management (3) Concerns the body of knowledge that constitutes theoretical foundations of sport and leisure and application of principles to field of study.

PET 5476 Problems in Interscholastic Athletics (3) Problems in sport administration on interscholastic and intercollegiate levels. Emphasis on athletic promotion, accounting, public relations, recruitment, and transportation.

PET 5477 Personnel Management in Sport and Leisure Programs (3) Concerns hiring and training practices of individuals involved in the operation of sports programs.

PET 5478 Legal Issues of Sport and Leisure Management (3) Fundamental legal principles affecting amateur sports and physical activity programs.

PET 5479 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.

PET 5498 Seminar in Athletic Administration (3) Concerns leading, administering, and managing programs in sports which include athletics, intramural competition and other activity-based programs.

PET 5535 Research Methods in Physical Education (3) Designed to explore the fields of physiological and psychological research as applied to the field of physical education. Practical experience in the use of various concepts, techniques, and processes for conducting and reviewing research studies is also presented.

PET 5947 Internship in Sport/Leisure Management (3) Practical insight into various sport and/or fitness management settings.

* PET 5419 and PET 5498 may be campus-based or field-based internships (Department chair approval).

Professor: Shotwell, Theresa A.

Master of Science/Master of Education in Business Education Major in Business Education

This graduate study program, within the Department of Business and Technology Education, leads to a Master of Education or a Master of Science degree in Business Education. To earn a **Master of Education** Degree, you must complete thirty-six (36) semester hours of (non-thesis) course work. To earn a **Master of Science** Degree, you must complete thirty (30) semester of hours of course work and a successful defense of six (6) semester hours of thesis credit. This program is designed to strengthen the professional development and enhance the competency of individuals interested in working in the field of business education and other related industries. The program does not fulfill the course requirements for teacher certification.

Admission Requirements

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. Must have earned a 3.0 GPA during the last 60 semester credit hours in the undergraduate program or receive a Graduate Records Examination (GRE) Score of 1000 or better.
4. Must take the Graduate Record Examination (GRE), regardless of G.P.A.

Curriculum Guide Business Education

| Required Foundations Courses | Sem. Hrs. |
|-------------------------------------------------------------------------|-----------|
| EDF 5608 Social Foundations of Education | 3 |
| EDF 5211 Advanced Educational Psychology | 3 |
| EDF 5481 Introduction to Educational Research | 3 |
| | <u>9</u> |
| Specialization | |
| BTE 5085 Adm./Supv. of Business Education | 3 |
| BTE 5171 Business Education Curriculum | 3 |
| BTE 5447 Improvement in Methods of Teaching Business Subjects. | 3 |
| BTE 5446 Measurement, Evaluation, and Classroom Management | 3 |
| BTE 5455 Cooperative Business Education | 3 |
| BTE 5671 Problems, Issues, and Trends in Subject Content | 3 |
| BTE 5685 School/Community Relations in Business Ed. | 3 |
| BTE 5900 Readings in Business Education | 3 |
| | <u>24</u> |
| Electives (Select a minimum of three [3] hours) | |
| BTE 5475 Teaching Youth in Business Education w/Special Needs | 3 |
| BTE 5925 Workshop in Business Education | 3 |
| OST 5585 Human Relations in Business | 3 |
| | <u>3</u> |
| or | |
| BTE 5971 – Thesis (Required for Master of Science degree) | 3-6 |
| TOTAL | 36 |

Teacher Certification for Business Education Grades 6 – 12

This certification program is for candidates who hold a bachelor's or higher degree; who are not already enrolled in a Business Teacher Education Program; and who seek a teacher certification in Business

Department of Business and Technology Education Graduate Faculty

Associate Professor/Chairperson: Dennis, Dawn Holley

Education The following requirements may change at anytime in accordance with the Florida Department of Education standards.

Requirements For Teacher Certification

- A. Candidate must have a bachelor's or higher degree.**
B. Complete COURSE WORK REQUIREMENTS consist of 57-63 semester hours as follow:

- I. Professional Education** (24-30 Semester Hours)
1. **Foundation Courses** -- Nine (9) Semester Hours
 EDF 1005 Introduction to Education (3) or
 EDF 5608 Soc. Found. of Education (3)
 EDF 2701 Teaching Diverse Populations (3)
 EDF 5211 Advanced Educational Psychology (3)
 or
 DEP 2004 Human Growth & Development (3)
 2. **General Education Methods-** Nine (9) Semester Hours
 ESE 3341 Theory & Prac. of Teaching in Secondary Schools (3) **or**
 ESE 5035 Innovative. Sec. School Curriculum (3)
 EDF 3430 Measurement & Evaluation (3) **or**
 ESE 5415 Evaluation in Sec. Schools (3)
 RED 3333 Teaching Reading in the Concentration (3)
 3. **Special Methods of Teaching the Subject** -Six (6) hrs.
 BTE 4410 Method Of Teach. Business Subj. (3)
or
 BTE 5447 Improv. Method Of Teach. Business Subj. (3)
 TSL 4324 ESOL Survey of Strategies for Learning for Secondary Schools (3)
 4. **Practical Experience in Teaching**
 - a) Six (6-12) semester hours earned in a college student teaching program *BTE 4945 - Student Teaching **or**
 - b) Two years of full-time teaching experience in a public, state supported, or nonpublic secondary school which is operated by a public school district.
- II. Business Education** - Thirty-three (33) Semester Hours
1. **Document or Word Processing** - Six (6) Semester Hours
 OST 2120 Document Processing II (3)
 OST 5715 Word Processing Techniques (3)
 2. **Accounting** - Six (6) Semester Hours
 ACG 2021 Financial Acct. Principles (3)
 ACG 2071 Managerial Acct. Principles (3)
 3. **Economics** - Six (6) Semester Hours
 ECO 2013 Principles of Economics I (3)
 ECO 2023 Principles of Economics II (3)
 4. **Computer Science** - Six (6) Semester Hours
 EME 4400 Computer Applications in Education (3)
 EME 5425 Computer Concepts (3)
 5. **Business English** - Three (3) Semester Hours
 OST 5338 Adv Communications in Bus. (3)
 6. **Business Law** - Three (3) Semester Hours
 BUL 3320 Business Law - Bus. Ed. (3) **or**
 BUL 4411 Legal Environment of Business (3)
 7. **Other Business Courses** Six (6) Semester Hours
 OST 1110 Document Processing I (3)

OST 4402 Admin. Support Systems (3) or
 OST 3639 Integrated Computer Applications (3)
 or
 OST 4501 Office Management (3) **or**
 OST 4811 Desktop Publishing (3)
 OST 4354 Records Management (3)

- C. Student must receive a passing score on the Florida Teacher Certification Examination (FTCE) and Business Education Subject Area Test.**

Course Descriptions

BTE 5075 Facilities, Equipment, and Specifications (3) Facilities, equipment, and specifications for business education program.

BTE 5085 Administration and Supervision of Business Education (4) Administrative and supervisory techniques in the area of organization, selection of personnel, preparation of financial reports, identification of facilities, and providing inservice training.

BTE 5171 Business Education Curriculum (3) Planning and organizing instructional programs in business education and review of factors influencing the school curriculum.

BTE 5446 Measurement, Evaluation and Classroom Management (3) Determination and construction of appropriate devices for measuring in evaluating student performance. Special emphasis on classroom management.

BTE 5447 Improvement in Methods of Teaching Business Subjects (3) Techniques, materials, and instructional media for teaching all business technology courses.

BTE 5455 Cooperative Business Education (3) An analysis of cooperative business education including strategies, structure of curriculum patterns, and applying the cooperative plan to business education.

BTE 5671 Problems, Issues, and Trends in Content Subjects (3) Historical information, issues, current trends, and new dimensions in business education.

BTE 5475 Teaching Youth in Content Subjects With Special Needs (3) This course is designed to lead students to a greater understanding of the educational needs of the disadvantaged youth. Additionally, this course should help students understand the process of teaching the disadvantaged and economically insecure person how to gain dignity that comes from being self-sufficient.

BTE 5485 Seminar in Comp. Business Education (3):

BTE 5685 School and Community Relations for Business Education Programs (4) An approach to identifying, assessing, and analyzing the various publics for the purpose of improving instruction in business education.

BTE 5900 Readings in Business Education (3) Current readings in all areas of business education to supplement student's program in area of business education.

BTE 5905 Directed Individual Study (1-5) Special out-of-class experiences supervised by department faculty.

BTE 5925 Workshops in Business Education (1-5) This course is designed to provide a "Master Plan" for development and presentation of successful workshop in business education.

BTE 5971 Thesis (6) An independent investigation of a problem or project in business education.

EDG 5991 National Board Certification Awareness and Readiness (1) Online course with practical approach to preparation for NBC that focuses on certified teachers who are interested in becoming a National Board Candidate. Uses concepts of the five core proposition. Students are matched with NBPT Mentors to assist them through the process.

OST 5338 Advanced Communications in Business (3) Techniques of effective business writing, speaking, and listening and techniques of dictating.

OST 5358 Records Management (3) Design and analysis of records system, management of life cycle of records, and retention and maintenance of records.

OST 5365 Programming for Information Management (3) Design,

preparation, and maintenance of software for information management systems using the computer. Emphasis is on design of procedures.

OST 5505 Administrative Office Management (3) Study of organization and management of office functions in relation to business enterprise. Course involves coordination of information processing with other services, communication media, analysis and evaluation of office jobs.

OST 5585 Human Relations in Business (3) Techniques of effective relationships among office personnel.

OST 5705 Management Information Systems (3) Emphasis on determination of management information requirements and the design and management of systems to meet those needs.

OST 5715 Word Processing Techniques (3):

OST 5725 Word Processing Applications (3):

Master of Education/Master of Science in Industrial Arts/Technology Education Major in Technology Education

This graduate study program, within the Department of Business and Technology Education, leads to a Master of Education or a Master of Science degree in Technology Education. This program is designed to strengthen the professional development and enhance the competency of individuals interested in working in the field of industrial arts/technology education specifically (construction, manufacturing, transportation and communication technologies) and other related industries. The program does not fulfill the course requirements for teacher certification.

To earn a Master of Education or Master of Science degree in Technology Education, the candidate:

1. Must have earned a bachelor's degree from an accredited institution.
2. Must meet all of the general requirements of both the University and the College of Education.
3. Must have earned a 3.0 GPA during the last 60 semester credit hours in the undergraduate program or receive a Graduate Records Examination (GRE) Score of 1000 or better.
4. Must take the Graduate Record Examination (GRE), regardless of G.P.A.

Curriculum Guide Technology Education

| | Sem. Hrs. |
|-----------------------------------------------------------------------------|-----------|
| Required Foundations Courses (nine semester hours) | |
| EDF 5481 Introduction to Educational Research | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| EDF 5543 Philosophical Foundations of Education | 3 |
| or | |
| ESE 5215 Secondary School Curriculum | 3 |
| 9 | |
| Technology Education Core | |
| EIA 5140 Curriculum Planning in Technology Education | 3 |
| EIA 5640 Problems, Trends and Issues in Technology Education* | 3 |
| EIA 5800 Philosophy of Industrial /Technology Education | 3 |
| EIA 5811 Laboratory Planning for Technology Education | 3 |
| EIA 5432 Instructional Methods in Industrial/Technology Education | 3 |
| EME 5420 Micro-Computers for School Administration or | |
| EME 5425 Computer Concepts for School Administrators | 3 |
| EVT 5507 Instructional Strategies for Teaching Disadvantaged | 2 |

| | |
|-------------------------------------------------------------------|---|
| EVT 5766 Testing and Evaluation in Technology Education | 3 |
| 24 | |

Electives (Select a minimum of three [3] hours)

| | |
|----------------------------------------------------------------|---|
| EIA 5750 Research in Industrial/Technology Education | 3 |
| EVT 5934 Seminar in Industrial/Technology Education | 3 |
| OST 5365 Programming for Information Management | 3 |
| 9 | |

or

| | |
|-------------------------------------------------------------------|-----------|
| EVT 5931 Thesis (Required for Master of Science Degree) | 3-6 |
| Total | 36 |

Course Descriptions

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.

EDG 5991 National Board Certification Awareness and Readiness (1) Online course with practical approach to preparation for NBC that focuses on certified teachers who are interested in becoming a National Board Candidate. Uses concepts of the five core proposition. Students are matched with NBPT Mentors to assist them through the process.

EIA 5140 Curriculum Planning in Industrial Arts/Technology Education (3) Curricular organization of industrial arts programs for specific community situations.

EIA 5432 Methods of Teaching Industrial Arts/Technology Education (3) The course provides an opportunity to develop an understanding of the learning needs of students at the 6-12 school levels; and the current trends, curriculum, and methods that are being utilized to develop instruction within industrial arts/technology education.

***EIA 5640 Trends and Issues in Industrial Arts (3)** State and federal legislation affecting the field of industrial arts. May be repeated for a maximum of 6 semester hours.

EIA 5661 Technical Problems (3):

EIA 5669 Special Problems in Industrial Arts (3-5) Experiences designed to meet the technical updating and other specific needs of industrial arts teachers in the existing and new technologies.

EIA 5750 Research in Industrial Arts Education (3) Review and evaluation of published research in industrial arts education. Design and development of surveys.

EIA 5800 Philosophy of Industrial Arts/Technology Education (3) Historical and philosophical basis of industrial arts, including its implications on research and curriculum development.

EIA 5811 Laboratory Planning for Industrial Arts/Technology Education (3) Development of educational specifications for planning and equipping industrial arts facilities at the various grade levels for the public schools.

EIA 5925 Workshop (1-6) Summer workshops designed to meet the specific and changing needs of Florida teachers and the State Department of Education.

EIA 5930 Seminar in Industrial Arts (3) Current issues in industrial arts. May be repeated for maximum of 6 semester hours.

EME 5420 Microcomputers for School Administration (3): This course reviews the skills in using computer tools to support school administrative functions. In addition, this course identifies the appropriate computer products for each administrative need and estimates the resources and requirements for implementing various products and applications. Skills in word processing for clerical support, spreadsheets for budgeting, databases for record keeping.

EME 5425 Computer Concepts for School Administrators (3): This course reviews the concepts and skills in computer technology for principals and school district administrators. In addition, an analysis of school computer needs and matching of products and techniques to each need is reviewed and the necessary skills in using computers for clerical support, financial records, and student/personnel record keeping are reviewed too.

EVT 5066 Principles and Philosophies of Vocational Education (3) History, philosophy, and development of vocational education. Understanding basic concepts of vocational education and consistent set of beliefs with relation to education for vocational competence.

EVT 5168 Curriculum Construction (3) Analysis of the scope and function of industrial education programs. Emphasis is on the development of plans for curriculum improvement to more effectively meet the needs of secondary school youth.

EVT 5260 Organization and Coordination of Cooperative Vocational Education (3) Cooperative education programs, their origin and purposes, and the duties, activities, and responsibilities of the coordinator.

EVT 5264 Administration of Vocational Education (3-5) Principles of organization, selection of personnel and procedures, direction of instructional and operational phases of vocational and secondary adult education programs within federal, state, and local requirements.

EVT 5265 Supervision and Coordination of Vocational Programs (3) Duties, responsibilities, and factors, involved in supervision and coordination of vocational and technical education programs at the secondary, post-secondary, and adult levels.

EVT 5267 Planning and Organization of the Local Vocational Program (3-5) Administrative course covering characteristics and functions of vocational school, as well as groups to be served, provisions, organizations, and planning necessary.

EVT 5507 Instructional Strategies for Teaching the Disadvantaged (3-5) Examination of instructional methods, techniques, materials, and resources for teaching disadvantaged students.

EVT 5561 Vocational Guidance (3) Principles, methods and procedures for organizing and carrying out an effective program of guidance to assist youth and adults in choosing, preparing for, entering and making adjustment in vocational careers.

EVT 5661 Technical Problems (5) Opportunity for individual students, through directed study, to undertake advanced study in a technical area. Recent developments and technical reports involved.

EVT 5664 Community Relations Affecting Vocational Education (3) Socio-economic foundations of vocational education, and developing and maintaining desirable workable relationships between school and community groups.

EVT 5766 Testing and Evaluation in Industrial Education (3) Significance of tests and measurements in modern program of industrial education. Emphasis is on various types of tests and techniques of testing and evaluating. Elementary statistics involved.

EVT 5820 School Shop Organization and Administration (3-5) Special problems of planning, organizing, and administering school shops, including equipment selection and organization.

EVT 5905 Directed Individual Study (1-5) Enables graduate students to pursue study in field when appropriate courses are not scheduled during a particular semester.

EVT 5906 Problems in Vocational Education (3-5) Conducted as a seminar or on individual study basis, permitting the student to study special problems or projects in his or her particular field. Technical and/or research reports required.

EVT 5934 Seminar in Industrial Education (3) Analytical study of policies, practices, and issues in vocational technical education and industrial arts. Seminar report based on interpreting and applying research findings and procedures to specific problems required.

EVT 5971, 5972 Thesis A, B (1-6) An independent investigation of a problem or project in technology or vocational education.

Department of Secondary Education and Foundations Graduate Faculty

Associate Professors: Ellis, Rufus; Ervin, Charles (Chair); Kelley,

Bernadette; Manson, Tony; Wallace, Renee

Secondary and Intermediate School Education

Master of Education/Master of Science

A student who desires to pursue the master of education or the master of science degree in secondary education with concentration in English, History, Mathematics or Science must meet all the requirements of the university and the School of Graduate Studies; in addition, a candidate will hold a bachelor's degree and normally will hold, or will be eligible for, a Florida educator's certificate. Provision is made, however, for students who have not met certification requirements in the state of Florida. The subject matter area of the student's program, composed of eighteen (18) semester hours of content courses, is planned jointly by faculty members from the Department of Secondary Education and Foundations and from the respective content area. The College of Education has a state approved Professional Teacher Option (PTO) Program. As an alternative to certification for students who hold degrees in certain non-education programs.

Curriculum Guides

I. For candidates who already hold Florida educator certification. Master of Education (M.Ed.)

| Course/Title | Sem. Hrs. |
|---------------------------------------------------------|-----------|
| A. Select one: | |
| EDF 5543 Philosophical Foundation | 3 |
| EDF 5211 Advanced Educational Psychology | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| B. Select one: | |
| ESE 5035 Innovations in Secondary School Curriculum | 3 |
| ESE 5215 Secondary School Curriculum | 3 |
| ESE 5415 Evaluation in the Secondary School | 3 |
| C. Required of all students: | |
| EDF 5481 Introduction to Educational Research | 3 |
| EDG 5791 Seminar in Multicultural Education | 3 |
| ESE 5935 Seminar in Secondary Education | 3 |
| D. Content Area Courses | |
| 18 | |
| E. Electives (chosen by the student and advisor) | |
| 3 | |
| Total | 36 |

Master of Science (M.S.) in Education

| | |
|------------------------------------------------|-----------|
| A. Select one: | |
| EDF 5543 Philosophical Foundation | 3 |
| EDF 5211 Advanced Educational Psychology | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| B. Select one: | |
| ESE 5035 Innovations in Secondary | 3 |
| ESE 5215 Secondary School Curriculum | 3 |
| ESE 5415 Evaluation in the Secondary School | 3 |
| C. Required of all students: | |
| EDF 5481 Introduction to Educational Research | 3 |
| EDG 5791 Seminar in Multicultural Education | 3 |
| ESE 5935 Seminar in Secondary Education | 3 |
| D. Content Area Courses | |
| 18 | |
| E. Thesis | |
| 3 | |
| Total | 36 |

II. For candidates who do not hold Florida educator cer-

tification. (M.Ed.):

| Course/Title | Sem. Hrs. |
|----------------------------------------------------------------------------------|-----------|
| A. Required of all students: | |
| EDF 5481 Introduction to Educational Research | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| EDG 5791 Seminar in Multicultural Education | 3 |
| ESE 5215 Secondary School Curriculum | 3 |
| ESE 5415 Evaluation in the Secondary School | 3 |
| B. Select one: | |
| EDF 5543 Philosophical Foundation or | |
| EDF 5211 Advanced Educational Psychology | 3 |
| C. Select one: | |
| ESE 5035 Innovations in Secondary School Curriculum or | |
| ESE 5935 Seminar in Secondary Education | 3 |
| D. Content Area Courses 18 | |
| E. EDG 5944 Student Teaching 6 | |
| F. XXXX Methods of Teaching in the Content Area 3 | |
| G. RED 3333 Reading in the Content Area (cert. requirement)** 3 | |
| Total | 48 |

*** Required for certification, but does not count towards the degree.

Master of Science (M.S.) in Education

| Course/Title | Sem. Hrs. |
|----------------------------------------------------------------------------------|-----------|
| A. Required of all students: | |
| EDF 5481 Introduction to Educational Research | 3 |
| EDF 5608 Sociological Foundations of Education | 3 |
| ESE 5215 Secondary School Curriculum | 3 |
| B. Select one: | |
| EDF 5543 Philosophical Foundation | 3 |
| EDF 5211 Advanced Educational Psychology | 3 |
| C. Select one: | |
| ESE 5035 Innovations in Secondary School Curriculum | 3 |
| ESE 5415 Evaluation in the Secondary School | 3 |
| ESE 5935 Seminar in Secondary Education | 3 |
| D. Thesis 6 | |
| E. Content Area Courses 18 | |
| F. EDG 5944 Student Teaching 6 | |
| G. XXXX Methods of Teaching in the Content Area 3 | |
| H. RED 3333 Reading in the Content Area (cert. requirement)** 3 | |
| Total | 48 |

*** Required for certification, but does not count towards the degree.

Secondary Education Continues Course Descriptions

EDF 5120 Child Development (3) Basic concepts, theories, principles and methods of studying children. Intensive study of age-level developmental characteristics.

EDF 5136 Adolescent Psychology (3) Designed to produce teachers who can intelligently guide the growth and development of adolescents. Includes learning experiences involving a study of the meaning of adolescence in America, the physical and psychological dimensions of adolescence and other relevant components.

EDF 5211 Advanced Educational Psychology (3) The role of principles of psychology in methods of teaching, formulation of objectives, evaluation of learning, and cognitive development of learners.

EDF 5219 Modalities of Learning and Human Development (3) Emphasis on theoretical bases for considering the dimension of human

learning and development, with a focus on the interrelationships among different stages of the life span and among the physical, intellectual, social, and personality influences.

EDF 5285 Instructional Development of Computer Courseware (3) Methods of systematically designing instructional materials for the computer; overview of CAI and CMI components and characteristics; hands-on use of programming languages appropriate for AI and CMI development.

EDF 5287 Instructional Technology (3) Applying instructional system principles to learning and teaching problems.

EDF 5400 Basic Statistics (3) An introductory statistics course. The course includes descriptive statistics and selected parametric statistical techniques of analysis.

EDF 5434 Testing and Evaluation (3) Selection, administration, interpretation, and utilization of standardized tests; construction of tests; uses of tests for various purposes.

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 5543 Philosophical Foundations of Education (3) Major philosophies of education with emphasis on developing skills in using tools and techniques of philosophy in analyzing education theories, concepts, and issues.

EDF 5608 Sociological Foundations of Education (3) An examination of the significant socio-cultural forces underlying major social problems confronting American education. The focus will be on special problems of rural and urban schools as related to minority groups.

EDF 5735 Research in Educational Computing (3) Overview of findings on the effectiveness of computers in instruction; techniques and procedures in conducting research on computer uses in education; research project required.

EDF 5939 Seminar in Research Design (3) Prereq: EDF 5481. Identification, planning, and implementation of research projects in education, including synthesis of research techniques in formulating designs. Each student is required to defend an original research design.

EDF 5971 Master's Thesis (3-6) Student designs, conducts, and reports on an original research project undertaken with support of thesis committee. Offered on a pass-fail basis, credit determined by student's thesis committee.

EDG 5706 Human Relations Skills (3) Examinations of the concepts, attitudes, habits, values, skills and techniques which promote relating effectively to other individuals and various subgroups other than one's own; study of the processes and specific strategies which promote positive human relations in multicultural classrooms.

EDG 5708 Populations, Concepts and Strategies in Multicultural Education (3) Examination of the origins, characteristics, cultures, lifestyles and contributions of the socially, ethnically, racially, socio-economically mixed populations in the United States; critically study of the nature, characteristics, purposes, values, terminology, concepts and components of multicultural education.

EDG 5791 Seminar in Multicultural Education (3) Designed to facilitate teaching in a multicultural setting; emphasis on understanding various subcultures and promoting favorable interaction among members thereof. Field experience required.

EDG 5906 Directed Individual Study (1-6) Prereq: Consent of instructor. Intensive study of topics fitting a particular student's needs and interests.

EDG 5931 Seminar in Special Topics (3) An examination of special topics in education focusing on teaching skills. The course focuses on the Florida Teacher Certification competencies.

EDG 5939 Seminar in Affective Education (3) Analysis of technology and methods useful in creating a learning climate likely to produce both cognitive and affective changes in children. Field experience required.

EDG 5944 Student Teaching (6-12) Supervised teaching in a public school.

ESE 6935 Seminar in Special Topics (3) An examination of special topics in education including classroom management and curriculum content.

EDM 5245 The Middle School Program (3) Designed to give particular attention to a critical analysis of current theory and practice in the

nature, purpose, organization, administration, and curriculum of the middle school program. Special emphasis is placed upon the social, economic, and educational bases operating to bring about changes in the curriculum.

EDS 5351 Supervision of Student Teaching (3) Designed to prepare inservice teachers to supervise student teachers/interns. Provides knowledge and skills enabling teachers to become effective resource and support persons for interns.

EME 5403 Fundamental Computer Concepts and Skills (3) Review of computer capabilities and limitations, parts of computer systems, and computer uses in various environments. Experience with several of the most common computer uses; programming, record keeping, and calculating.

EME 5420 Microcomputers for School Administration (3) Review of, and skills in using, computer tools to support school administrative functions. Identification of appropriate computer products for each administrative need, and estimation of resources and requirements for implementing various products and applications. Skills in word processing for clerical support, spreadsheets for budgeting, data bases for record keeping.

EME 5425 Computer Concepts for School Administrators (3) Concepts and skills in computer technology for principals and school district administrators. Analysis of school computer needs and matching of products and techniques to each need. Skills in using computers for clerical support, financial records, and student/personnel record keeping.

ESE 5035 Innovations in Secondary School Curriculum (3) Promising approaches to effecting functional curriculum change in the high school; emphasis on innovative techniques and instructional media for the multicultural classroom.

ESE 5215 Secondary School Curriculum (3) Designed to develop educators who are competent in structuring an effective secondary school curriculum for youth.

ESE 5415 Evaluation in the Secondary School (3) Points of view, methods, and techniques used in appraising behavioral growth of pupils, adequacy of instructional programs and facilities, and an examination and appraisal of instruments used in evaluating secondary schools. Emphasis will be on effective evaluation for multicultural populations.

ESE 5935 Seminar in Secondary Education (3) A reviews of basic concepts in secondary education. A through examination of current educational polices, practices, professional ethics, classroom management and school safety issues and trends in secondary education.

ESE 6939 Special Topics: SACS (3) Designed to give particular attention to a critical analysis of current theory and practice in the nature, purpose, organization, and administration of the self-study for the Southern Association of Colleges and Schools. Focuses on a specific content or service area.

Supplemental

The following course is required for certification, but do not count toward the degree:

*** Reading in the Content Area

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

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), pharmaceuticals, pharmacoepidemiology, (M.S. only) and pharmacoconomics (M.S. only) 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. Enrollment in the graduate programs is limited due to research facilities, the number of faculty and the availability of research and student support.

Minimum Requirements for Graduate Admission

FOR M.S. Programs

3.0 GPA in the last 60 semester hours; or
1,000 combined score on the GRE (verbal and quantitative)
Foreign students must obtain a Test of English as a Foreign Language (TOEFL) score prior to admission.

For Ph.D. Programs

1,000 combined GRE score and 3.0 GPA; or
A total of 6.0 or greater on the sliding scale:
GRE Score \times 3/1000 = GRE Factor
GRE Factor + GPA \geq 6.0 or

A Master's degree from an accredited institution and three (3) letters of recommendation.

Foreign students must obtain a Test of English as a Foreign Language (TOEFL) score 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 (PHA 975)
- 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.

| 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 |

Financial Aid

Support ranging from \$8,500 to \$16,200 per year is 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.

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 8967 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 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.

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 Seminar | 4 |
| PHA 6975 Research and Thesis | 6 |
| PHA 8966 Master of Science Comprehensive Examination | 0 |
| PHA 8967 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 II
- * 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 hours78-82

Electives may be chosen from, but not limited to:
All currently offered graduate courses in the College of Pharmacy

EVS 5027 Environmental Microbiology (FAMU/ESI)
EVS 5604 Hazard Material Management (FAMU/ESI)

EVS 5606 Environmental Physiopology 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 pre-requisite for each course before registration.

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 Sem. Hrs. | |
| 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 8967 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 I | 3 |
| PHA 6181 *Advanced Pharmaceutics II | 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 |
| PHA XXXX Industrial Pharmacy | 3 |
| PHA XXXX Pharmaceutical Packaging | 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 8967 Thesis Defense | 0 |

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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) To understand 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, ophthalmic 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 Pharmaceutics (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 pharmaco-economic 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 course of objective 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, cardiac control, vascular control, hemodynamics, cardiometabolism cardiac 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; 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. 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 effect 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, 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. How these techniques can be used to study disease and how they can be applied 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 with 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, reporting research findings, 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 instructional materials, evaluating student performance, teaching higher-order thinking skills, technology and teaching, and planning 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 & specialty areas requirements for the M.S. degree. The examination's purpose is to test student's knowledge in core & 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 & 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.

INSTITUTE OF PUBLIC HEALTH

The Institute of Public Health (IPH) at Florida A&M University is the result of the 1995 Florida Legislature's commitment to resolving the public health and environmental problems that disproportionately affect the educationally and economically disadvantaged residents of the state. Major health concerns include adverse health outcomes such as heart disease, stroke, cancer, chemical dependency, diabetes, unintentional injury and violence, infant mortality and HIV/AIDS. Access to health care, the need for health professional development, and sensitivity to cultural and ethnic differences are additional concerns.

Accreditation - The FAMU Public Health Program is fully accredited by the Council on Education for Public Health.

Mission and Goals of the Institute of Public Health - The mission of the Institute of Public Health and Master of Public Health (MPH) degree program is to improve the health status of the poor and underserved through graduate training, research and service. Special emphasis is placed on the provision of graduate training and research on diseases and health problems that disproportionately affect educationally and economically disadvantaged individuals. This includes, without limitations, the human health effects associated with acute and chronic disease, environmental pollution and violence.

The goals of the Institute are:

1. To provide quality graduate education and training in public health;
2. To advance knowledge of the cultural competencies required to decrease high risk behaviors and to promote healthy behavior choices;
3. To conduct research that provides an evidence base for improving the health of those who bear a disproportionate burden of disease;
4. To encourage effective health promotion and disease prevention measures through proactive community outreach efforts statewide; and
5. To contribute to the development of effective public health policy for Florida's poor and underserved populations.

Description of the Institute of Public Health - The administrative responsibility resides within the FAMU College of Pharmacy and Pharmaceutical Sciences (COPPS), in collaboration with the FAMU School of Graduate Studies, Research and Continuing Education. Faculty in the Institute provide leadership, instruction, research and specialized training in public health. The Institute utilizes existing faculty and staff (teaching, research, and administration) within the Schools of Allied Health and Nursing, the Environmental Sciences Institute, the COPPS (Environmental Toxicology Program, Division of Pharmaceutical Sciences, and the Division of Pharmacy Practice), and the School of Graduate Studies, Research and Continuing Education, Journalism, Media and Graphic Arts. Due to the interdisciplinary programmatic requirements of the Institute, faculty from the Department of Biology, Chemistry, Social Work, Sociology and Criminal Justice may also hold joint appointments. The Florida Board of Regents has approved the Institute as a Type II Center in the State University System of Florida (see Graduate Section of this catalog under College of Pharmacy and Pharmaceutical Sciences for a description of the Master of Public Health Program).

The MPH degree program emphasizes graduate training and development of research regarding disease and health problems that primarily affect the disadvantaged person, including without limitations, the

human health effects associated with acute and chronic disease, environmental pollution, and violence. The MPH program has two tracks: a 48-semester hour program and a 42-semester hour program. The 42 semester hour program (excludes the six (6) semester hours of internship) will only be offered to those with vast, past and current public health experience and a related health science degree. Each track requires course work in five (5) core areas: epidemiology, biostatistics, environmental and occupational health, health policy and management, and the social and behavioral sciences/health education. In addition, students gain depth in a specific public health area, as well as public health practice through field experience. Additional requirements for the MPH degree include the conduct of a special public health project and the passing of a written comprehensive exam.

Master of Public Health

Specialization in Public Health Program Curriculum-Year 1

Semester 1 (Fall) Sem. Hrs.

| | |
|------------------------------------------------------------------------------------|---|
| PHC 6100 Introduction to Public Health | 3 |
| PHC 6050 Biostatistics for Public Health Practice | 3 |
| PHC 6357 Public Health Perspectives of Environmental and Occupational Health | 3 |

Semester 2 (Spring)

| | |
|-----------------------------------------------------------|---|
| PHC 6000 Introduction to Epidemiology | 3 |
| PHC 6506 Behavioral Science and Health Education..... | 3 |
| PHC 6102 Principles of Health Policy and Management | 3 |

Semester 3 (Summer)

| | |
|---------------------------------------------------------|---|
| PHC 6704 Applied Community-Based Research Methods | 3 |
| PHC 6934 Topics in Public Health (Seminar) | 3 |
| PHC 6945 Public Health Practice I (Rotation) | 3 |

Program Curriculum-Year 2

Public Health Practice Courses

| | |
|-----------------------------------------------------------|---|
| PHC 6703 Special Problems in Public Health | 3 |
| PHC 6910 Public Health Practice II (Special Topics)..... | 3 |
| PHC 7911 Public Health Practice III (Independent Study).. | 3 |
| PHC 7946 Public Health Internship | 3 |
| PHC 7965 Comprehensive Examination | 1 |

Track Courses

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 Diseases | 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 |

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 |

Behavioral Science and Health Education

| | |
|-------------------------------------------------|---|
| PHC 6532 Current Issues in Women's Health | 3 |
|-------------------------------------------------|---|

| | |
|-------------------------------------------------------------------|-----------|
| PHC 6411 Social Marketing..... | 3 |
| PHC 6416 Contemporary Urban Health | 3 |
| PHC 6444 Community Organizing and Public Health | 3 |
| PHC 6407 Understanding Individual Health Behaviors | 3 |
| PHC 6587 Planning and Evaluation of Health Education | 3 |
| PHC 6627 Health Education Issues for Underserved Populations..... | 3 |
| Total Core Course Requirements | 33 |

Course Descriptions Master of Public Health

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 epidemiologic terminology, measurement of disease, disability and health in population groups, vital statistics and reportable disease mechanisms, procedures for infectious and chronic disease control.

PHC 6002 Epidemiology of Infectious Diseases (3) This course will focus on the epidemiology of selected infectious diseases, which are of (1) current public health importance and (2) 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.s) 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. The instructor will assign course readings.

PHC 6003 Epidemiology of Chronic Diseases (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. The instructor will assign course readings.

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.

PHC 6011 Advanced Epidemiologic 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.

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.

PHC 6050 Biostatistics for Public Health Practice (3) This course will introduce the participant to the theory, fundamentals and practical applications of biostatistical techniques to the practice of public health. Topics to be discussed include the nature of data, need, and practical uses of biostatistics to evaluate public health problems, sampling methods, probability, hypothesis testing, distributions, measures of central tendency, measures of dispersion, confidence estimation, simple statistical tests for comparison of means, comparison of proportions, evaluation of measures of association.

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.

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.

PHC 6160 Economic Aspects of Health Care (3) This course emphasizes how problems in the pricing, production and distribution of health care services 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 competition in health care, and regulation and financing of hospital and primary care services. 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.

PHC 6310 Environmental Toxicology for Public Health Professionals (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.

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.

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.

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 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 6407 Understanding Individual Health Behaviors (3) This course introduces students to the specific models geared toward individual behavior change. Students will also have an understanding of individual health behaviors of most concern to decrease risk of fatal disease. The course will focus on the individual health behaviors throughout the various stages of life that put some individuals at risk of disease. In addition, students will be introduced to various alternative individual health behaviors that have been shown to result in good health outcomes.

PHC 6408 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 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.

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.

PHC 6416 Contemporary Urban Health (3) This course will introduce the participant to the principles, theories, concepts and methodologies involved in the study of health problems that are disproportionate in contemporary urban populations. This will include program planning/needs assessment, coalition development and program evaluation.

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.

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 underserved communities.

PHC 6587 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.

PHC 6627 (HSC 6627) Health Education Issues for Underserved Populations (3) This course will introduce the participant to the health issues of underserved populations in the United States. Participants in this course will learn about the health status of underserved populations, factors impacting the health status of these populations, and developing culturally competent health education.

PHC 6703 Special Problems in Public Health (1-4) This course will provide advanced research skills in addressing public health. Students will gain advanced independent research skills in addressing public health problems that plague poor and underserved populations.

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.

PHC 6761 Public Health Program Evaluation (3) This course will introduce a range of research methods and techniques used in designing and conducting health services research, with a special emphasis 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 conducting 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.

PHC 6705 Health Outcomes Research in 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 practice. The course will also provide students with the fundamental conceptual skills necessary for understanding the relationship between the organization of healthcare delivery and clinical practice. The course will explore a number of health care methods used in the practice of health care delivery, including both allopathic and homeopathic methods of clinical practice.

PHC 6910 Public Health Practice II (Special Project) (3) A special project is a core requirement of all MPH students in the Florida A&M University Institute of Public Health. This project is a research project in a public health area. Each project of choice should be in the chosen public health track of each student. During the fourth semester of study, each student will be enrolled in Public Health Practice II (Special Project). The student will independently conduct their research on the chosen topic with specific deliverables to be submitted during the course of the semester. During the fifth semester of study, an oral presentation and written report must be submitted and approved before the MPH degree is conferred.

PHC 6934 Topics in Public Health (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, bio-terrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases.

PHC 6945 Public Health Practice I (Rotation) (3) The purpose of this course is to orient the students to public health practice and appli-

cations 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 student work performance.

PHC 7911 Public Health Practice III (Independent Study) (3) 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.

PHC 7946 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 7965 Comprehensive Examination (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.

PHC 6011 Advanced Epidemiological Methods 3
 PHC 6003 Epidemiology of Chrronic Disease 3
 PHC 6002 Epidemiology of Infectious Disease 3
 PHC 6408 Principles of Behavioral Science and Health Education .3
 PHC 6157 Principles of Health Policy and Management 3
 PHC 6934 Topics in Public Health (Seminar) 3
 PHC 6704 Applied Community Based Research Methods 3
 PHC 6708 Statistical Methods for Categorical Data Analysis 3
 PHC 6709 Statistics and Computer Methods in Public Health 3
 PHC 6711 Biostatistics for Public Health Practice II 3
 PHC 6712 Techniques of Demographic Analysis 3
 PHC 6713 Applied Regression Analysis 3
 PHC 7708 Cardiovascular Disease Epidemiology 3
 PHC 7709 Cancer Epidemiology 3
 PHC 7710 Clinical Epidemiology 3
 PHC 7712 Design, Conduct and Analysis of Clinical Trials 3
 PHC XXXX Geographical Information Systems 3
 PHC 6703 Directed Readings in Epidemiology 3
 PHC XXXX Epidemiology of Emerging and Re-emerging Diseases .3
 PHC 7222 Maternal and Child Health Epidemiology 3
 PHC XXXX Doctoral Internship in Epidemiology 3
 PHC 7980 Doctoral Dissertation 12

Doctor of Public Health

Degree Requirements

The Doctor of Public Health (DrPH) degree program is designed primarily for those individuals planning careers involving public health professional practice, teaching, or research by providing training for the effective conduction or supervision of research, and the integration of new knowledge and techniques into community and/or public health practice. Graduates are oriented toward applied research in the development, implementation, and evaluation of public health programs and are typically employed by operating community or public health programs at the local, state, national or international levels in governmental, private, or voluntary agencies, as well as colleges and universities. The DrPH Program is a 54-credit hour or a 72-credit hour program offered in the areas of behavioral science and health education and epidemiology.

Specialization in DrPH Program

72-Credit Hour Curriculum For Behavioral Science Sem. Hrs.
 PHC 6100 Introduction to Public Health 3
 PHC 6050 Biostatistics for Public Health Practice 3
 PHC 6357 Public Health Perspectives of Environmental and Occupational Health 3
 PHC 6000 Introduction to Epidemiology 3
 PHC 6506 Principles of Behavioral Science and Health Education .3
 PHC 6102 Principles of Health Policy and Management 3
 PHC 6934 Topics in Public Health 3
 PHC 6704 Applied Community Based Research Methods 3
 PHC 6587 Planning and Evaluation of Health Education 3
 PHC 6444 Community Organizing and Public Health 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
 PHC 6708 Statistical Methods for Categorical Data Analysis 3
 PHC 6709 Statistics and Computer Methods in Public Health 3
 PHC 6712 Demographic Analysis 3
 PHC 6713 Applied Regression Analysis 3
 PHC 7750 Advanced Health Program Evaluation 3
 PHC 7714 Health Education Seminar Series 3
 PHC 7715 Planning and Administration of Health Education and Promotional Programs 3
 PHC 7716 Advanced Theory in Health Education 3
 PHC 7980 Dissertation 12

Specialization in DrPH Program

72-Credit Hour Curriculum For Epidemiology Sem. Hrs.
 PHC 6500 Introduction to Public Health 3
 PHC 6050 Biostatistics for Public Health Practice 3
 PHC 6357 Public Health Perspectives of Environmental and Occupational Health 3
 PHC 6000 Introduction to Epidemiology 3

Doctor of Public Health Course Descriptions

PHC 6500 Introduction to Public Health (3) 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 Biostatistics for Public Health Practice I (3) This course covers basic statistical techniques that are important for analyzing data arising from public health, environmental health, and 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 standardizations, 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.

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 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 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 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.

PHC 6408 Principles of Behavioral Science and Health Education (3) 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 6157 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.

PHC 6934 Topics in Public Health (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, bio-terrorism, occupational exposure, environmental exposures and disease outcomes, breast and prostate cancer screening guidelines, evaluation of tobacco cessation programs and emerging infectious diseases.

PHC 6011 Advanced Epidemiology Methods (3) 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. 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 6071 Epidemiology of Chronic Disease (3) 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 6072 Epidemiology of Infectious Disease (3) 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.

PHC 6711 Biostatistics for Public Health Practice II (3) 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.

PHC 6709 Statistics and Computer Methods in Public Health (3) This course will introduce course participants to the processes of data management in the fields 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 6713 Applied Regression Analysis (3) This course will present a unified treatment of modern regression models for discrete and continuous data focusing on practical application to medical and health data. Topics include multiple linear and nonlinear regressions of continuous response data, model diagnostics, analysis of variance and covariance 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 6708 Statistical Methods for Categorical Data Analysis (3) 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 7711 Applied Survival Analysis (3) 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 6712 Demographic Analysis (3) 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. Prerequisites: Biostatistics for Public Health Practice I, II

PHC XXXX Directed Readings in Epidemiology (6) 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 Clinical Epidemiology (3) 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 the basic requirements for randomized clinical trials.

PHC XXXX Geographical Information Systems (3) 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 application 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.

PHC 7709 Cancer Epidemiology (3) 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 7708 Cardiovascular Disease Epidemiology (3) 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 7222 Maternal and Child Health Epidemiology (3) 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 7980 Doctoral Dissertation (3 - 4) The dissertation must address an original research question employing a rigorous scientific approach using epidemiologic and statistical methods. As part of the dis-

sertation, the student must interpret and discuss the significance and potential application of the study results within the context of the public health arena. The successful dissertation will contain the components of public health research, public health policy and communication; and thus demonstrate the student's capacity for public health practice. It is recognized that students enter the dissertation process with the intent of advancing the public health dialogue by disseminating their work through peer-reviewed forums.

ENVIRONMENTAL SCIENCE

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 Environmental Sciences 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) on the last 60 semester hours or the last 90 quarter hours of undergraduate education or have a combined score of 1000 on the Graduate Record Examination or an advanced degree in a related area of study. Admission to the Environmental Sciences M.S. degree program may be subject to space and fiscal limitations. Selection criteria includes such factors as grades, test scores, educational objectives, area of study, work experience, recommendations, and personal records. All admissions shall be approved by the ESI graduate committee, the ESI director, and the Dean/director of Graduate Studies.

This program requires a minimum of 36 credit hours which is a combination of three basic components: (A) Core courses (19 hrs.), that provide a fundamental understanding of environmental science, issues and policies; (B) Concentration courses (minimum 18 hrs.), which enable students to establish a solid foundation in their area of interest and (C) Thesis (6 hrs.).

Program of Study

A. Core Courses (*)

Freshman Year

Fall Semester

| | |
|----------------------------------------------------|-----------|
| EVR 6064 Principles of Ecology* | 3 |
| EVS 5905 Enviro. Colloquium/Seminar* | 1 |
| EVS 6885 Environmental Research Design & Analysis* | 4 |
| Elective | 3 |
| | 11 |

Spring Semester

| | |
|----------------------------------------------------|-----------|
| CHS 5610 Environmental Chemistry w/Lab* | 4 |
| EVR 5260 Sources and Cont'l of Enviro Pollution* | 3 |
| EVR 5864 Environmental Policy & Risk Management* | 3 |
| EVS 5905 Environmental Science Colloquium/Seminar* | 1 |
| | 11 |

Summer Semester

| | |
|---------------------------------------|------------|
| EVS 5911 Supervised Research | 1-3 |
| EVS 5912 Dir. Individual Study and/or | 1-3 |
| EVS 5941 Internship | Var |
| | 1-6 |

B. Concentration Areas

Environmental Biotechnology

Sophomore Year

| Fall Semester | Sem. Hrs. |
|----------------------------------------|-----------|
| EVS 5028 Molecular Biology Techniques | 3 |
| EVS 5896 Environmental Biotechnologies | 3 |
| EVS 5905 Envir. Colloquium/Seminar | 1 |
| EVS 5970 Master's Degree Thesis | 3 |
| | 10 |

Spring Semester

| | |
|------------------------------------|-----------|
| EVS 5605 Environmental Toxicology | 3 |
| EVS 5905 Envir. Colloquium/Seminar | 1 |
| EVS 5970 Master's Degree Thesis | 3 |
| Elective | 3 |
| | 10 |

Environmental Restoration and Waste Management

Sophomore Year

| Fall Semester | Sem. Hrs. |
|--------------------------------------|-----------|
| EVS 5604 Hazardous Material Mgmt. | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| GLY 5828 Subsurface Fate & Transport | 3 |
| | 9 |

Spring Semester

| | |
|--------------------------------------------------|----------|
| EVS 5604 Waste Treatment & Disposal | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| EVS 5673 Bioremediation Application & Techniques | 3 |
| | 9 |

Marine and Estuarine Environments

Sophomore Year

| Fall Semester | Sem. Hrs. |
|--------------------------------------|-----------|
| EVR 5213 Marine Pollution | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| PCB 5315 Marine/Estuarine Ecosystems | 3 |
| | 9 |

Spring Semester

| | |
|------------------------------------------|-----------|
| EVR 5068C Marine Microbial Ecology w/Lab | 4 |
| EVS 5608 Aquatic Toxicology | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| | 10 |

Environmental Policy and Management

Sophomore Year

| Fall Semester | Sem. Hrs. |
|----------------------------------------------------------|-----------|
| EVR 5863 Envir. Resource. Econ. & Policy | 3 |
| EVR 5865 Environmental Risk Analysis | 3 |
| EVS 5862 Environmental Regulations & Regulatory Agencies | 2 |
| EVS 5970 Master's Degree Thesis | 3 |
| | 11 |

Spring Semester

| | |
|----------------------------------------|----------|
| EVR 5866 Prin. of Envir. Law Practice | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| EVS 6883 Environmental Decision Making | 3 |
| | 9 |

Radiation Protection**Sophomore Year**

| <u>Fall Semester</u> | Sem. Hrs. |
|---------------------------------|-----------|
| CHS 5105 Env. Radiochemistry | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| RHT 5415 Rad. & Hlth Physics | 3 |
| | 9 |

Spring Semester

| | |
|-------------------------------------|----------|
| EVS 5616 Civili. Rad. Waste Mgmt | 3 |
| EVS 5693 Rad. Instr. & Measurements | 3 |
| EVS 5970 Master's Degree Thesis | 3 |
| | 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 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 Instrumentation & 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 Ph.D. degree program in the Environmental Sciences Institute will prepare 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 include 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 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 referred scientific journal
- 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 1000 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 in the Test of English as a Foreign Language (TOEFL). Admission to the Environmental Sciences 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 & Contr of Enviro Pollution | 3 |
| EVS 5905 Environmental Colloq./Seminar* | 2 |
| EVR 6064 Principles of Ecology | 3 |
| EVS 5862 Enviro. Policy and Risk Mgmt. | 3 |
| EVS 6885 Environmental Research Design & Analysis w/Lab | 4 |

19

*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. |

**C. Concentration Areas
Environmental Chemistry**

| | |
|------------------------------------------------|---|
| CHS 5610C Environmental Chemistry | 3 |
| CHS 5105 Radiochemistry I | 3 |
| CHS 5106 Radiochemistry II | 3 |
| EVR 5260 Sources & Contrl of Enviro Pollu | 3 |
| EVS 5603 Site Characterization & Soil Survey | 3 |
| EVS 5604 Waste Treatment and Disposal | 3 |
| EVS 5607 Environmental Radioactivity | 3 |
| EVS 5673 Bioremediation Application & Tech | 3 |
| EVS 5693 Radiation Instruments & Measurement | 3 |
| EVS 6029 Comp. Methods in Env. Science | 3 |
| EVS 6705 Atmospheric Contaminant Transport | 3 |
| EVS 6706 Fate & Tran. Env. Cont. | 3 |
| EVS 6815C Chemical Separation Techniques w/Lab | 4 |
| GLY 5828 Subsurface Fate and Transport | 3 |

| | |
|----------------------------------------------|---|
| RHT 5130 Sources & Contrl of Radioact 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 |

Environmental Policy and Risk Management

| | |
|--------------------------------------------|---|
| EVR 5863 Env. Resource, Economics & Policy | 3 |
| EVR 5864 Env. Policy & Risk Management | 3 |
| EVR 5865 Env. Risk Analysis | 3 |
| EVR 5866 Principle Env. Law Practice | 3 |
| EVR 6265 Remote Sensing of Environments | 3 |
| EVS 5862 Env. 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 Adv. Topics in Aquatic & Terres. Ecol. | 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. Advanced examination of radioactive elements.

CHS 5610 Environmental Chemistry (3); Prereq: CHM 1045, MAC 3311. Natural and anthropogenic chemical processes in air, water and earth; their characteristics, and effects on the environment. 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) Introduction to 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. 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.

EVR 5063 Elements of Environmental Biology (3) Prereq: BSC 1011. Aspects of environmental biology at the biochemical and cellular level. Selected topics in cell structure and function, biochemistry kinetics, genet-

ics 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 .

EVR 5213 Marine Pollution (3) Prereq: CHM 3210. Impact of urbanization, industrialization, waste disposal and other human activity on the oceanic ecosystem. Analysis 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. Origins of environmental Pollutants, their characteristics and their pathways in the Earth's atmosphere, waters and soils. Mechanisms of pollution. Chemical, physical and biological effects of environmental pollution. Methods of pollution monitoring, prevention, abatement and remediation.

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: 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 5068C 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.

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, cosmogenic 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 5673 Bioremediation Applications & Techniques (3) To introduce 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 radiations; and for collecting, analyzing and interpreting radiations; and for collecting, analyzing and interpreting radiation data. Detector types; counting systems; methods and instrumentation for photon, charged particle 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 5863 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.

EVS 5896 Environmental Biotechnologies (3) Principles and practice of the various biotechnologies and their applications in environmental analysis, monitoring and measurement. This course review 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 research 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: 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: 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: 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: 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: 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 can not 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: (24 credit 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 1011. 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 set up to provide off-campus credit for students participating in internships at the Oakridge 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.

FAMU-FSU COLLEGE OF ENGINEERING

Description

The FAMU-FSU College of Engineering was authorized by the 1982 Legislature as a joint program between Florida A&M University and the Florida State University. Programs of study lead to the bachelor of science degrees in civil, chemical, computer, electrical, industrial and mechanical engineering; master of science (MS) degrees in civil, chemical, biochemical, electrical, industrial and mechanical engineering; and Ph.D. degrees in the same disciplines. A student entering the college applies for admission at one of the two universities and must satisfy their admission and general degree requirements of the university, the college, and the department, respectively. The degree is granted by the College of Engineering through the university where the student is registered. A single engineering complex convenient to both campuses is located near Innovation Park, a research and development community.

The goals of the college are: to educate engineers of excellence, at both the undergraduate and graduate levels, by the highest standards in the discipline recognized by national peers; to provide greater participation in professional engineering and technology, engineering teaching and research, of blacks, women, and other minorities; and to achieve

national and international recognition of the college through the excellence of activities of its faculty and students in their research and scholarly pursuits, as well as their professional and service endeavors.

The departments of chemical, civil, electrical and mechanical engineering offer thesis and non-thesis programs for the Master of Science degree and the department of industrial engineering offers a thesis program. The thesis-based programs are designed to provide the student with advanced course work and experience in researching the chosen engineering discipline. The non-thesis programs are designed to provide the student with a strong technical education with less emphasis on research. The thesis programs are appropriate for a student who plans to engage in research or to continue graduate studies for the doctoral degree. A candidate for the master's degree must satisfy all regulations and requirements established by the College of Engineering and specific department. For the Master of Science, non-thesis programs, a candidate must pass a comprehensive examination. For thesis programs, candidates must pass an oral examination (thesis defense) on their thesis. The Doctor of Philosophy degree is awarded after the student satisfies all requirements of the university. In addition to the general requirements, the departments have specific requirements, which are listed under each department.

Facilities

The College occupies over 200,000 sq. ft. 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, the Center for Advanced Power Systems and other university, public and private organizations engaged in research, development and clean industry operations.

Each department of the College operates specialized laboratories for teaching and research that are listed in the description of its programs.

The College operates for the common use of all programs a computing facility, a library and reading room, and a machine shop.

Libraries

The main book and journal collections for engineering are housed in the Dirac Science Library at FSU and in the Coleman Library at FAMU. The College also maintains an "Engineering Library Resource and Reading Room" (sometimes referred to simply as Engineering Reading Room or College Library) that functions as a satellite to the two university libraries relative to engineering needs. Collections at the College Library include monographs, texts and reference works that directly support instruction and research at the College. Library computer facilities enable extensive electronic literature search throughout the university libraries and other sources. Library services include literature search training sessions for students and faculty. The College Library is headed by a full time librarian who is also a staff member of one of the two university libraries. Other College Library personnel include assistants supported by the College.

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. Over 230 of these machines for general student use are high-end Pentium-class workstations supported by a cluster of Sun servers backed by a Storage Area Network. 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. Additionally, both universities provide on-campus facilities that are available to all students. Available software includes major general-purpose packages as well as special applications oriented toward particular disciplines. The college's research labs contain dozens of machines clustered together to provide

enhanced research capabilities as well as Sun and other servers and Linux-based computing clusters to perform complex number crunching for simulations.

The college's computing infrastructure uses a gigabit core Layer 3 switch interconnected to edge switching via gigabit fiber. The college internet connection is a gigabit link connecting through the Florida State University backbone (Florida State University acts as the Internet services provider for the college) allowing for fast access to the Internet2 and the new LambdaRail network. Florida A&M University's computing facilities also are connected to the Tallahassee MAN, thus providing a link to the college for its students.

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); these rooms have two studio cameras and one document camera connected to a desktop PC with a scan converter to display Web pages. A two-way live videoconferencing link via dedicated Fractional T-1 to the FSU-Panama City campus provides interactivity to synchronous distance delivery of classes to those students.

A Real Video G2 server is used to stream live and recorded programs, classes, and events from the college. The PolyCom VS4000 provides for 4-point IP videoconferences.

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. Satisfy any admission requirements of the department.

For additional information, refer to the degree requirements under each department.

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.

Correspondence and Information

For application materials, students should contact the University Admissions Office. Write to: Florida A&M University, Office of Admissions, Tallahassee, FL 32317. Telephone: (850) 599-3796. For specific department information and admission status, students may contact the College Graduate Studies Office. Write to: FAMU-FSU College of Engineering, Graduate Studies Office, 2525 Pottsdamer Street, Tallahassee, FL 32310-6046 /Telephone: (850) 410-6423.

For academic advisement and information on graduate assistantships, students should contact their department.

Write to: Department Name, 2525 Pottsdamer Street, Tallahassee, FL 32310-6046. Telephone: Chemical Engineering - (850) 410-6151; Civil Engineering - (850) 410-6136; Electrical Engineering - (850) 410-6454; Industrial Engineering - (850) 410-6345; Mechanical Engineering - (850) 410-6330.

Additional information is available at <http://www.eng.fsu.edu/grad-services>.

Chemical and Biomedical Engineering

Description

The Department of Chemical and Biomedical Engineering at the FAMU-FSU College of Engineering offers the degrees of doctor of philosophy and master of science in both chemical and biomedical engineering, and the bachelor of science degree in chemical engineering. The bachelor's degree is fully accredited by ABET. The department is strongly committed to continue 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 engineers that can handle challenging applications of the modern chemical industry. Eleven full-time teaching faculty members, one adjunct teaching professor, and one research associate currently comprise the faculty.

Research areas include polymer processing, biochemical, biomedical, and electrochemical engineering, process control, materials research, macromolecular dynamics, environmental engineering, transport in porous and microstructured media, reaction kinetics, molecular transport phenomena, thermodynamics, NMR/MRI methods in transport, and engineering education. Many of these efforts are conducted in close cooperation with the Florida State University Institute of Molecular Biophysics (IMB), School of Computational Sciences (SCS), National High Magnetic Field Laboratory (NHMFL), Center for Materials Research and Technology (MARTECH), and the Departments of Physics, Chemistry and Biochemistry, and Biological Sciences; the Florida A & M University School of Pharmacy and Pharmaceutical Sciences; as well as with the Departments of Mechanical, Industrial, and Electrical and Computer Engineering in the College of Engineering.

The Department of Chemical and Biomedical Engineering's main office is located in the College of Engineering building at 2525 Pottsdamer Street. The mailing address is: College of Engineering, Suite 131, 2525 Pottsdamer Street, Tallahassee, Florida, 32310-6046; Phone: (850) 410-6149 or 410-6151; Fax: (850) 410-6150; e-mail: cheme@eng.fsu.edu; website: <http://www.eng.fsu.edu/cheme>.

Department of Chemical and Biomedical Engineering Faculty

Rufina Alamo, Professor; Ph.D., Madrid, 1981. Polymer Crystallization and Characterization, Structure – Property Relations, Morphology of Semi-Crystalline Polymers.

Ravindran Chella, Associate Professor; Ph.D., Massachusetts, 1984. Polymer Blends and Composites, Phase Separations in Polymers, Patterns of Multiphase Flow.

Chi-Kai Kevin Chen, Assistant Professor, Ph. D., Virginia, 2001. Neuroengineering, Physiology of Drug Delivery Systems.

John R. Collier, Professor; Ph.D., Case Institute, 1966. Polymer Rheology, Textiles and Fibers; Fluid Flow; Whisky Making.

Wright C. Finney, Research Associate; M.S., Florida State, 1978. Environmental Science and Engineering, Aerosol Dynamics and Characterization, Biomedical Engineering.

Samuel Grant, Assistant Professor, Ph.D., Illinois-Chicago, 2000. Transport Properties in Biomedical Applications using Nuclear Magnetic Resonance and Magnetic Resonance Imaging (NMR/MRI).

Egwu E. Kalu, Associate Professor; Ph.D., Texas A&M, 1991. Electrochemical Engineering, Electrophysiological Processes.

Milen Kostov, Assistant Professor, Ph.D., Penn State, 2003. Computational Molecular Dynamics; Modeling of Chemical Reactions in Nano-porous Materials.

Bruce R. Locke, Professor; Ph.D., North Carolina State, 1989. Transport/Reaction in Tissues and Complex Media, Transport Processes using NMR/MRI, Reaction Kinetics in Non-Thermal Plasmas.

Teng Ma, Assistant Professor; Ph.D., Ohio State, 1999. Cell and Tissue Engineering, Biomaterials.

Anant Paravastu, Professor; Ph.D., U. California - Berkeley, 2004. Molecular Structure Characterization of Filamentous Proteins, Nuclear

Magnetic Resonance and Atomic Force/Electron Microscopy Techniques.

Subramanian Ramakrishnan, Assistant Professor; Ph.D., Illinois, Urbana-Champaign, 2001. Colloidal Science and Engineering; Nanostructured Materials.

Loren B. Schreiber, Adjunct Professor; Ph.D., California Institute of Technology, 1975. Engineering Education, Batch Reaction and Batch Distillation, Physical Properties of Fine Organic Chemicals.

Sachin Shanbhag, Assistant Professor; Ph.D., Michigan, 2004. Computer Modeling of Polymer Rheology; Modeling of Biological Cell Morphology and Interactions.

John C. Telotte, Associate Professor; Ph.D., Florida, 1985. Chemical Thermodynamics, Radon Transport, Semiconductor Processing.

Affiliate Faculty

P. Bryant Chase, Professor of Biological Science; Ph.D., University of Southern California, 1984. Biomechanics of cardiac and skeletal muscle; Bio-nanotechnology.

Ching-Jen Chen, Affiliate Professor and Dean of the College of Engineering, Ph.D., Case Western Reserve, 1967. Heat Transfer, Fluid Mechanics, Numerical Simulation, Biomagnetics.

Mandip Sachdeva, Professor of Pharmacy, Ph.D., Dalhousie University, 1994. Drug Delivery Systems, Pharmaceuticals.

G. Dale Wesson, Associate Professor, College of Engineering Sciences and Agriculture, Fluid Mechanics; Separations Processes; Hydrocyclone Stability.

Program Overview

The Department of Chemical and Biomedical Engineering at the FAMU-FSU College of Engineering offers the degrees of Doctor of Philosophy and Master of Science in both Chemical and Biomedical engineering, and the Bachelor of Science degree in Chemical Engineering. The bachelor's degree is fully accredited by ABET. The Department is strongly committed to continue 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 engineers that can handle challenging applications of the modern chemical industry. Fourteen full-time teaching faculty members, one adjunct teaching professor, and one research associate currently comprise the faculty.

Major research areas include cellular and tissue engineering, multi-scale theory, modeling, and simulations, plasma reaction engineering, nanoscale science and engineering, polymers and complex fluids, and biomedical imaging. Many of these efforts are conducted in close cooperation with the Florida State University Institute of Molecular Biophysics (IMB), School of Computational Sciences (SCS), National High Magnetic Field Laboratory (NHMFL), Center for Materials Research and Technology (MARTECH), and the Departments of Physics, Chemistry and Biochemistry, and Biological Sciences; the Florida A & M University School of Pharmacy and Pharmaceutical Sciences; as well as with the Departments of Mechanical, Industrial, and Electrical and Computer Engineering in the College of Engineering.

The Department of Chemical and Biomedical Engineering's main office is located in the College of Engineering building at 2525 Pottsdamer Street. The mailing address is: College of Engineering, Suite 131, 2525 Pottsdamer Street, Tallahassee, Florida, 32310-6046; Phone: (850) 410-6149 or 410-6151; Fax: (850) 410-6150; e-mail: cheme@eng.fsu.edu; website: <http://www.eng.fsu.edu/cheme>.

Research Facilities

The Department of Chemical and Biomedical Engineering has extensive graduate research laboratory facilities located in the present College of Engineering building. Three undergraduate teaching laboratories, a design classroom, and twelve graduate research laboratories comprise the current physical resources. All laboratories are well equipped with modern experimental apparatus including numerous workstations and microcomputers for data acquisition and analysis. These facilities include laboratories dedicated to polymer science and engineering, electrochemical engineering, aerosol transport and deposition, batch process optimization and control operations, gas/liquid phase pollution treatment by non-thermal plasma, advanced fluid mechanics, and bioengineering. One large laboratory suite is dedicated to nuclear magnetic resonance research, and includes a 500

MHz (12 Tesla) wide-bore, microimaging NMR spectrometer, and a larger bore, lower field NMR spectrometer for the study of larger scale biological samples.

A wide range of analytical equipment, including gas and liquid chromatographs, UV-Vis spectrophotometers, a chemiluminescence gas analyzer, aerosol particle measurement instrumentation, analytical microscopes, an FTIR spectrometer, potentiostats, a rotating disk electrode system, a hydraulic press for electrode fabrication, differential scanning calorimeters, and pH, conductivity, temperature, flow, pressure, mass and other measuring devices are located in these laboratories. Process equipment including various types of gas and liquid phase chemical reactors, controlled temperature fermentors, and polymer production reactors are also located in these laboratories. Infrastructure includes an autoclave, a controlled environment incubator, water polishing systems, refrigerated/heating circulating baths, isotherm ovens, high voltage power supplies, high purity gas production and mixing systems, a refrigerated centrifuge, a glassware cleaning device, and numerous additional support equipment.

In the area of computing capabilities, the department has numerous personal computers interconnected to the Colleges' computing network. MATLAB, MATHCAD, CHEMCAD, and other UNIX and PC-based programs are readily available to graduate students in their computational research. Extensive, high level computing capabilities are available to students and faculty through The Florida State University Academic Computing and Network Service (FSU ACNS) and School of Computational Science (SCS) through the College of Engineering network cluster. All students are given computer accounts allowing unlimited access to the Internet.

Nuclear Magnetic Resonance Facility — The nuclear magnetic resonance / magnetic resonance imaging (NMR/MRI) program focuses on the investigation of transport phenomena and the measurement of transport properties. These efforts are aimed at gaining an improved understanding of molecular transport in heterogeneous systems in the presence of external applied fields. The present work is expected to result in an increased understanding of the design parameters of biochemical separation processes such as chromatography and electrophoresis, new separation processes based on new materials characterized by NMR techniques, transdermal drug delivery, and development of methods for rapid and reliable rheometric characterization of complex materials. A 500 MHz (12 Tesla) wide-bore, microimaging NMR spectrometer occupies NMR Hall A, while NMR Hall B is used for a lower field, but larger sample volume, instrument for routine imaging applications of engineering materials and biological specimens. Access to a range of magnetic field strengths is important; some materials science studies require low field strengths, whereas studies of homogenous fluids, gels, and many biological materials benefit greatly from a high magnetic field.

Pulsed Corona Research Facility — The pulsed corona research facility is a laboratory dedicated to the investigation and mitigation of air and water pollution through the use of a novel type of electrical discharge known as pulsed streamer corona. This facility includes equipment for both gas and liquid phase corona discharge studies. The essential features of a pulsed streamer corona reactor system include a high voltage AC input power supply, a rotating spark gap, pulse-forming electronic network, and gas and liquid reactor vessels. The pulse generating unit consists of a mechanical rotating spark gap and auxiliary electronic components forming an "RC" circuit that is capable of delivering short pulses (nanosecond rise time and micro- to millisecond pulse width) to a variety of electrode geometries. Equipment for gas phase pulsed corona research includes an extensive gas feed preparation system that will allow gas mixtures of varying composition (air, nitrogen, oxygen, carbon dioxide, carbon monoxide, water vapor, nitrogen oxides, and other trace gases) to be prepared for input into a plug-flow pulsed corona reactor. Laboratory apparatus for liquid phase pulsed corona studies consists of several glass batch and plug flow reactors, from which samples are withdrawn for analysis using a variety of techniques including various EPA methods and liquid chromatography.

Polymer Laboratory — The research in the polymer laboratory, which is directed toward characterization and morphological studies of semi-crystalline polymers, is carried out using a large variety of experimental techniques. Different spectroscopies including Raman, NMR, and IR are available to the laboratory. A Perkin-Elmer DSC-7 differential scanning calorimeter and an Olympus B-H2 equipped with temperature controlled hot stage and photographic devices are devoted to the study of crystallization kinetics, phase transitions, and the structure of the melt and of the solid state of single polymers and of polymeric blends. These studies are also fol-

lowed by dilatometric techniques. Spatial mapping of the overall morphology and the crystallite aggregates from melts and solutions is followed using the recently acquired NMR imaging instrumentation operating at 500 MHz. The scattering techniques at the FSU Center for Materials Research and Technology (MARTECH) laboratory and the electron microscopes of the Advanced Materials and Mechanics Laboratory (AMML) are supporting techniques of the morphological studies.

Biomedical Research Laboratories — The Department of Chemical and Biomedical Engineering has well-established graduate programs in Biomedical Engineering. These programs emphasize biological transport phenomena, building upon existing strengths in the department. Graduate laboratories to support research in biomedical engineering are currently devoted to cellular and tissue engineering, neuroengineering, physiology of drug delivery systems, cellular signaling, polymer gel assembly, biopolymer gels, cell-based biosensors, and biomaterials. A cell culture facility supporting this research includes a -80o freezer, incubator-shaker, biosafety cabinets, centrifuges, autoclaves and steam sterilizers, CO2 incubator, various microscopes (visible and ultraviolet light and inverted phase), and other equipment for cell culture maintenance.

Affiliated Research Facilities — The National High Magnetic Field Laboratory (NHMFL) is a national user laboratory supported by the National Science Foundation and the State of Florida. It is operated by Florida State University, the University of Florida, and Los Alamos National Laboratory in New Mexico, and it has facilities at all three sites. Established and headquartered in Tallahassee in 1990, the NHMFL quickly captured for the United States the international leadership position for research in high magnetic fields and the technological development of innovative magnet systems. At this 330,000-sq. ft. site, there are superconducting, resistive, hybrid, and specialty magnets, and research programs in magnet science and technology and magnetic resonance. There are active research programs in cryogenics, superconductivity, magnet development, materials science, nuclear magnetic resonance (NMR) and magnetic resonance imaging (MRI), ion cyclotron resonance for mass spectrometry, and electron paramagnetic resonance. Faculty from FSU, FAMU, and the FAMU-FSU College of Engineering have laboratory space and research projects located at the NHMFL.

Computing Facilities at the School of Computational Sciences (SCS)
 -- SCS is the site of several high performance computer environments: a custom-made massively parallel machine and a large cluster of super-workstations. The Thinking Machines Corporation CM-2 Connection Machine is a massively parallel computer system that has 64K processors, 64-bit floating point hardware, 2Gb of main memory, a 10Gb Data Vault, and a SUN 4/690 as a front end. SCS also operates a 16 node IBM 9076 SP2 supercomputer with 8 wide nodes (1Gb Ram/12Gb Disk each), and 8 thin nodes (256Mb/12Gb Disk each), and 2 IBM Powerseries 4. Workstations now comprise a large component of the computing resources utilized by SCS scientists. Large groups of these workstations are grouped into 'computer clusters' where they may be used via DQS, a workstation queuing system developed by SCS software development & technical support personnel. The hardware includes either symmetric multiprocessors or standard workstations from SGI, DEC, IBM, and HP, for a total of approximately 150 systems. The Department of Chemical and Biomedical Engineering has access to these computational facilities on an as-needed basis.

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, fertilizers), organic chemicals (i.e., petrochemicals, polymers, fuels, propellants, pharmaceuticals, specialty chemicals), biological products (i.e., enzymes, vaccines, biochemicals, biofuels), foods, semiconductors, and paper.

Chemical engineers having graduate degrees work in a wide range of organizations where their technical skills are needed. These 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.

Master of Science

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 if they do not have a degree from an accredited chemical engineering degree program;
3. U.S. students: an undergraduate GPA of 3.3 or higher, and a minimum combined score of 1200 on the verbal and quantitative portions of the GRE;
4. International students: an undergraduate GPA of 3.3 or higher, and a minimum combined score of 1200 on the verbal and quantitative portions of the GRE exam. In addition, students whose native language is not English are required to take the TOEFL exam and get a score of at least 213; and
5. Three letters of recommendation from persons familiar with the student's work and background, and a statement of professional goals.

Note: all students must present GRE scores prior to being admitted.

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. Up to six (6) semester hours of 4000-level course work approved by the department may be counted as graduate electives. Transfer credit from another institution is limited to six (6) semester hours with departmental approval. 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 (4)
- 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 may also be required. Departmental financial support may not be available for graduate students taking undergraduate courses.

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 degree.

Thesis Option-30 semester hours

The thesis-type master's degree is awarded upon successful completion of the following requirements:

1. Twelve (12) semester hours of chemical engineering core courses (see below);
2. Nine (9) semester hours of approved electives;
3. Nine (9) semester hours of ECH 5971r, Thesis;
4. Oral defense of the master's thesis - ECH 8976, Thesis Defense (0) (S/U grade only);
5. Registration and attendance at all departmental seminars.

No course with a grade below "C-" will be counted towards fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted towards fulfillment of degree requirements. The candidate must also complete and defend an original thesis.

1. Required Courses (twelve [12] 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)

2. Chemical Engineering Elective Courses (nine [9] semester hours):
Choose from among the 5000 and 6000-level courses taught in the Department, or in another department approved by the major professor.
3. Thesis Hours (nine [9] semester hours):
ECH 5971r Thesis (1–9) (S/U grade only)
4. Thesis Defense:
ECH 8976 Thesis Defense (0) (S/U grade only)
5. Department Graduate Seminar (must be taken each term):
ECH 5935r Chemical Engineering Seminar (0) (S/U grade only)

Course (non-thesis) Option- Thirty-three (33) semester hours

The course-type master's degree is awarded upon successful completion of the following requirements:

1. Twelve (12) semester hours of chemical engineering core courses (see below);
2. Twenty-one (21) semester hours of approved electives; and
3. Registration and attendance of all department seminars.

No more than one course with a grade of "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.

1. Required Courses (twelve [12] 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)

2. Chemical Engineering Elective Courses (twenty-one [21] semester hours):

Choose from among the 5000 and 6000-level courses taught in the Department, or in another department approved by the major professor.

3. Department Graduate Seminar (must be taken each term):
ECH 5935r Chemical Engineering Seminar (0) (S/U grade only)

Note: departmental support is generally not available for students pursuing a non-thesis master's degree.

All chemical engineering 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. In addition, all students are required to take required safety training courses as necessary.

Doctor of Philosophy

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 course work at the previous college or university attended (minimum GPA of 3.3); and
3. Demonstrated proficiency in conducting research in chemical engineering by passing the departmental PhD qualifying examination (Ph.D. Qualifying Examination Requirements below for more details).

Before students can be admitted to the ChE doctoral program, they must satisfy the Department's core course requirements for the master's degree and must pass the written qualifying examination. Students who fulfill these requirements may elect, upon approval of the graduate com-

mittee and major supervisor, to proceed directly toward the PhD without first obtaining a master's degree.

Degree Requirements

Before students can be admitted to the ChE doctoral program, they must satisfy the department's core course requirements for the master's degree and must pass the written qualifying examination. 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 master's degree.

The Ph.D. degree will be awarded to a doctoral candidate upon successful completion of the following requirements:

1. Selection of a research topic and major professor(s);
2. Formation of a supervisory committee in consultation with the major professor(s);
3. Submission and defense of a prospectus on the dissertation topic to the supervisory committee;
4. Completion of thirty (30) semester hours of advanced course work (including twelve [12] semester hours of core course work);
5. Satisfaction of the University residency requirement;
6. Completion of at least twenty-four (24) semester hours of dissertation research;
7. Presentation and defense of an original dissertation (EECH 8985, Dissertation Defense);
8. One semester teaching assistantship in the undergraduate laboratory;
9. Presentation of a research topic at one local, regional, or national professional meeting; and
10. Submission or publication of scholarly articles based on original dissertation research in peer-reviewed journals.

All chemical engineering 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. In addition, all students are required to take required safety training courses as necessary.

Students with a 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 (9) additional approved semester hours beyond the thesis-type master's course requirements to satisfy the thirty (30) semester hour requirement for the PhD. All other requirements must be fulfilled as stated above.

Students with master's degrees in chemical engineering from other institutions will be given a specific course plan by the departmental graduate committee. A maximum of thirty (30) semester hours may be assigned to remedy any deficiencies in the student's background.

Fifty-four (54) semester hours are required for the PhD degree in Chemical Engineering, as follows:

1. Twelve (12) semester hours of chemical engineering core courses (see below);
2. Nine (9) semester hours of approved electives;
3. Nine (9) semester hours of ECH 5971r, Thesis;
4. Oral defense of the master's thesis - ECH 8976, Thesis Defense (0) (S/U grade only);
5. Registration and attendance at all departmental seminars.

No course with a grade below "C" will be counted towards fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted towards fulfillment of degree requirements. The candidate must also complete and defend an original thesis

1. Required Courses (twelve [12] 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)
2. Chemical Engineering Elective Courses (nine [9] semester hours):
Choose from among the 5000 and 6000-level courses taught in the Department, or in another department approved by the major professor.
3. Dissertation Hours (twenty four [24] semester hours):

ECH 6980r Dissertation (1–9) (S/U grade only)

4. Dissertation Defense:
ECH 8985 Dissertation Defense (0) (S/U grade only)
5. Department Graduate Seminar (must be taken each term):
ECH 5935r Chemical Engineering Seminar (0) (S/U grade only)

Qualifying Examination

All students admitted to the PhD program will be required to take the doctoral qualifying examination at the first offering after completion of the core course ECH 5052, Research Methods in Chemical Engineering. A research topic will be assigned by the graduate committee at the beginning of the semester. The student must write a research proposal and defend it orally in front of the graduate committee by the end of the semester. This examination must be passed within two consecutive attempts, or the student is not allowed to continue as a doctoral student. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the PhD degree.

Program in Biomedical Engineering

Recent 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 U.S. Currently, biomedical engineering is the most rapidly growing graduate engineering discipline in the U.S. 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 the bioengineering, biotechnology, and related professions.

The graduate program in biomedical engineering (BME) promotes a special emphasis in cellular and tissue engineering. Advanced engineering, medical, 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 educational and industrial settings.

Master of Science

Admission Requirements

1. A baccalaureate degree in engineering, chemistry, physics, or biological sciences, or an allied field from an accredited college or university;
2. Fulfillment of the requirements for the baccalaureate biomedical engineering degree or its equivalent. Students may be required to satisfy deficiencies by taking undergraduate courses if they do not have a degree from an accredited biomedical engineering degree program;
3. U.S. students: an undergraduate GPA of 3.3 or higher, and a minimum combined score of 1200 on the verbal and quantitative portions of the GRE;
4. International students: an undergraduate GPA of 3.3 or higher, and a minimum combined score of 1200 on the verbal and quantitative portions of the GRE exam. In addition, students whose native language is not English are required to take the TOEFL exam and get a score of at least 213; and
5. Three letters of recommendation from persons familiar with the student's work and background, and a statement of professional goals.

Note: All students must present GRE scores prior to being admitted.

Students with a B.S. degree in engineering, chemistry, physics, or biological sciences are required to take (or have taken) the following undergraduate engineering courses or their equivalents: ECH 3301 – Chemical Engineering Process Analysis and Design or MAP 3305 - Engineering Mathematics; ECH 3266 - Introductory Transport Phenomena; and ECH 4267 - Advanced Transport Phenomena, BME 4403C - Quantitative Anatomy and Physiology I; and BME 4404C - Quantitative Anatomy and Physiology II. In addition, students should also have taken the following courses (if not included in their degree program): Biological Sciences I and

II, and Biochemistry I and II. Acceptance of equivalent courses is evaluated on a case-by-case basis following petition to Graduate committee.

Degree Requirements

The Program in Biomedical Engineering offers both thesis-type and course-type (non-thesis) options for the master of science degree.

Thesis Option (thirty [30] semester hours): The thesis-type master's degree is awarded upon successful completion of the following requirements:

1. Fifteen (15) semester hours of biomedical engineering core courses;
2. Six (6) semester hours of approved electives;
3. Nine (9) semester hours of BME 5971 - Thesis;
4. Oral defense of the master's thesis - BME 8976, Thesis Defense (0) (S/U grade only);
5. Registration and attendance at all departmental seminars.

No courses with a grade below "C" will be counted towards fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted towards fulfillment of degree requirements. The candidate must also complete and defend an original thesis.

1. **Required Courses (twelve [12] semester hours):**
BME 5030 Biochemical Transport Phenomena (3)
or
ECH 5261 Advanced Transport Phenomena (3)
ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)
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 5746 - Mammalian Physiology I; PCB 5747 - Mammalian Physiology II; PCB 5796 - Sensory Physiology; PCB 5835 - Neurophysiology; PCB 5137 - Advanced Cell Biology; PCB 5525 - Molecular Biology; PCB 5845 - Cell and Molecular Neuroscience; and BCH 5405 - Molecular Biology. Additional courses may satisfy the physiology/biology requirement but require petition to the Graduate committee for approval as a core substitute.]

2. **Biomedical Engineering Elective Courses (nine [9] semester hours):**
BME 5020 Biophysical Chemistry and Biothermodynamics (3)
BME 5105 Biomaterials (3)
BME 5937 Biomedical Instrumentation (3)
BME 5937 Mathematical Physiology (3)
BME 5937 Special Topics in Biomedical Engineering [Cellular Engineering] (3)
BME 6330 Tissue Engineering (3)
BME 6530 NMR and MRI Methods in Biology and Medicine (3)

The above listed courses are typical biomedical engineering elective courses; other elective courses may be found in the University Graduate Bulletin.

3. **Thesis Hours (nine [9] semester hours):**
BME 5971r Thesis (1–9) (S/U grade only)
4. **Thesis Defense:**
BME 8976 Thesis Defense (0) (S/U grade only)
5. **Department Graduate Seminar (must be taken each term):**
BME 5935r Biomedical Engineering Seminar (0) (S/U grade only)

In addition to the thirty (30) semester credit hours of coursework and thesis, an oral examination in defense of the thesis is required for the master's of science degree in biomedical engineering thesis option.

Course (Non-Thesis) Option (33 semester hours)

The course-type (non-thesis) master's degree is awarded upon successful completion of the following requirements:

1. Twelve (12) semester hours of biomedical engineering core courses (see below);

2. Twenty-one (21) semester hours of approved electives; and
3. Registration and attendance at all departmental seminars.

No courses with a grade below "C-" will be counted towards fulfillment of degree requirements. No more than one course with a grade in the "C" range will be counted towards fulfillment of degree requirements.

Note: Departmental support is generally not available for students pursuing a non-thesis master's degree.

1. Required Courses (twelve [12] semester hours):
BME 5030 Biochemical Transport Phenomena (3)
or
ECH 5261 Advanced Transport Phenomena (3)
ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)
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 5746 - Mammalian Physiology I; PCB 5747 - Mammalian Physiology II; PCB 5796 - Sensory Physiology; PCB 5835 - Neurophysiology; PCB 5137 - Advanced Cell Biology; PCB 5525 - Molecular Biology; PCB 5845 - Cell and Molecular Neuroscience; and BCH 5405 - Molecular Biology. Additional courses may satisfy the physiology/biology requirement but require petition to the Graduate committee for approval as a core substitute.]

2. Biomedical Engineering Electives (nine [9] semester hours):
BME 5020 Biophysical Chemistry and Biothermodynamics (3)
BME 5105 Biomaterials (3)
BME 5937 Biomedical Instrumentation (3)
BME 5937 Mathematical Physiology (3)
BME 5937 Special Topics in Biomedical Engineering [Cellular Engineering] (3)
BME 6330 Tissue Engineering (3)
BME 6530 NMR and MRI Methods in Biology and Medicine (3)
3. Department Graduate Seminar (must be taken each term):
BME 5935r Biomedical Engineering Seminar (0) (S/U grade only)

The above listed courses are typical biomedical engineering elective courses; other elective courses may be found in the University Graduate Bulletin.

In addition to the thirty (30) semester hours of course work and thesis, an oral examination in defense of the thesis is required for the master's of science in biomedical engineering thesis option.

Doctor of Philosophy

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 course work at the previous college or university attended (minimum GPA of 3.3); and
- 3) Demonstrated proficiency in the core areas of biomedical engineering by passing all sections of the departmental Ph.D. qualifying examination.

Degree Requirements

Before students can be admitted to the BME doctoral program (PhD), they must satisfy the department's core course requirements for the master's degree and must pass the written qualifying examination. 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 master's degree.

Students with a thesis-type master's degree in biomedical engineering from the FAMU-FSU College of Engineering may, with approval of the graduate committee and major professor, take nine (9) additional approved semester hours beyond the master's requirements to satisfy the 30-hour course requirement for the PhD. All other requirements must be fulfilled

as stated below.

Students with master's degrees in biomedical engineering from other institutions will be given a specific course plan by the departmental graduate committee. A maximum of thirty (30) semester hours may be assigned to remedy any deficiencies in the student's background.

The following requirements for the PhD degree in biomedical engineering must be met:

1. Passage of the BME PhD qualifying examination within two consecutive exam attempts (see Ph.D. Qualifying Examination Requirements below for more details); successful completion will result in formal admission to candidacy for the Ph.D. degree;
2. Selection of a research topic and major professor;
3. Submission and defense of a prospectus on the dissertation topic to the supervisory committee;
4. Completion of a minimum of thirty (30) semester hours of advanced course work in biomedical engineering and related disciplines;
5. Satisfaction of University residency requirements;
6. Completion of at least twenty-four (24) semester hours of dissertation research;
7. Presentation and defense of an original dissertation;
8. Assist in the teaching of at least one laboratory course;
9. Presentation of one paper at a local, regional, national, or international professional meeting; and
10. Submission or publication of scholarly articles based on original dissertation research in peer-reviewed journals.

All biomedical engineering 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. In addition, all students are required to take the safety training course.

Fifty-four (54) semester hours are required for the Ph.D. degree in Biomedical Engineering, as follows:

1. Twelve (12) semester hours of biomedical engineering core courses;
2. Eighteen (18) semester hours of approved electives;
3. Twenty-four (24) semester hours of BME 6980r Dissertation (1-9); and
4. Registration and attendance at all departmental seminars.

1. Required Courses (twelve [12] semester hours):
BME 5030 Biochemical Transport Phenomena (3)
or
ECH 5261 Advanced Transport Phenomena (3)
ECH 5052 Research Methods in Chemical Engineering (3)
ECH 5840 Advanced Chemical Engineering Mathematics I (3)
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 5746 - Mammalian Physiology I; PCB 5747 - Mammalian Physiology II; PCB 5796 - Sensory Physiology; PCB 5835 - Neurophysiology; PCB 5137 - Advanced Cell Biology; PCB 5525 - Molecular Biology; PCB 5845 - Cell and Molecular Neuroscience; and BCH 5405 - Molecular Biology. Additional courses may satisfy the physiology/biology requirement but require petition to the Graduate committee for approval as a core substitute.]

2. Biomedical Engineering Elective Courses (nine [9] semester hours):
BME 5020 Biophysical Chemistry and Biothermodynamics (3)
BME 5105 Biomaterials (3)
BME 5937 Biomedical Instrumentation (3)
BME 5937 Mathematical Physiology (3)
BME 5937 Special Topics in Biomedical Engineering [Cellular Engineering] (3)
BME 6330 Tissue Engineering (3)
BME 6530 NMR and MRI Methods in Biology and Medicine (3)

The above listed courses are typical biomedical engineering elec-

tive courses; other elective courses may be found in the University Graduate Bulletin.

3. Dissertation Hours (twenty four [24] semester hours):
BME 6980r Dissertation (1–9) (S/U grade only)
4. Dissertation Defense:
BME 8985 Dissertation Defense (0) (S/U grade only)
5. Department Graduate Seminar (must be taken each term):
BME 5935r Biomedical Engineering Seminar (0) (S/U grade only)

Qualifying Examination

All students admitted to the Ph.D. program will be required to take the doctoral qualifying examination at the first offering after completion of the core course ECH 5052, Research Methods in Chemical Engineering. A research topic will be assigned by the graduate committee at the beginning of the semester. The student must write a research proposal and defend it orally in front of the graduate committee by the end of the semester. This examination must be passed within two consecutive attempts, or the student is not allowed to continue as a doctoral student. Upon successful completion of the qualifying examination, the student is admitted to candidacy for the Ph.D. degree.

Academic Regulations and Procedures for All Chemical and Biomedical Engineering 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.

Ph.D. Qualifying Examination Requirements

Successful Ph.D. candidates will have a sound background in engineering, as well as the creativity and judgment necessary to conduct independent research. The purpose of the Qualifying Examination is to assess these qualities with an emphasis on evaluating the student's potential to conduct an original course of study and investigation. The Qualifying Examination tests the student's ability (1) to define, describe and examine critically relevant literature; (2) to think creatively and to apply basic chemical/biomedical engineering concepts; (3) to communicate in a scholarly and rigorous manner the progress and results of research; and (4) to conduct productive, rigorous and creative scientific investigations.

This exam will be based on the student's ability to evaluate a fundamental research article from the literature of chemical engineering. Specifically, the student will be asked to:

- Identify the problems addressed in the paper;
- Formulate a critical appraisal of the authors' contributions to the problem and the significance of the work;
- Critically evaluate the technical soundness of the approach used and results obtained;
- Summarize and critique advances in the field since the publication of the assigned article;
- Propose in concrete terms research work that might be done to extend and (if necessary) improve upon the study discussed in the article; and
- Comment on the incorporation of the article's findings into the potential course of dissertation work of the student.

The Graduate Qualifying Examination Committee, which will be comprised of at least three faculty members, will assign a fundamental article from the literature of chemical engineering. Three weeks following the assignment of the chosen research article, the student will be required to submit a written report on the exam problem as well as any additional commentaries or simulations deemed critical by the student. This report will be distributed to all members of the Qualify Examination Committee for review. Committee members will submit comments and questions back to the prospective PhD candidate within 5 business days. This review will identify (a) aspects of the written report that require additional atten-

tion or (b) critical research points that will need to be addressed in the oral presentation.

After the submission of the report and the return of the committee's review, the student will give an oral presentation to the Qualifying Examination Committee. The oral presentation will be approximately one hour in length. The student will give a 40-minute presentation open to the public, followed by a 20-minute question and answer session. The oral presentation should address the exam criteria, as well as any issues raised by the committee's review of the submitted written report. Additionally, the student is permitted to submit any supplementary information to augment the written report. An edited written report should have been submitted by this time.

Following the oral presentation, the Qualifying Examination Committee will evaluate the student's performance in closed session. Three outcomes are possible: pass, provisional pass, or fail. An affirmative majority vote from the faculty is required for the student to pass the examination. A unanimous vote for a provisional pass will require the student to satisfy additional requirements deemed necessary by the Qualification Examination Committee, such as (but not limited to) the successful completion of specific coursework or the completion of an MS degree prior to full PhD candidacy. A pass or provision pass of the Qualifying Examination will permit the student to begin or continue research work contributing to the student's dissertation. If neither a pass nor provisional pass vote is reached, the student will have failed the Qualifying Examination. At the discretion of the Qualifying Examination Committee, the student may have one further opportunity to retake the examination. This re-examination will be scheduled at the discretion of the Graduate Committee, and may require the student to retake the exam in a subsequent semester. Failure of the Qualifying Exam on two occasions will eliminate the student from consideration for PhD candidacy.

All prospective PhD candidates must enroll in the appropriate Doctoral Qualifying Exam course (either ECH 8965r or BME 8965r) for the semester that they intend to take the qualifying examination.

Selection of Major Professor

All full-time graduate students following the thesis option 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. The completed form should be submitted to the departmental graduate coordinator.

The major professor is responsible for directing the student's research and progress towards 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 term.

Supervisory Committee

The supervisory committee for a master's degree candidate must consist of a minimum of three faculty members with master's directive 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 four members (including major professor) with doctoral directive 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. Three 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.

After the members of the supervisory committee have been identified, the supervisory committee assignment form should be completed and returned to the departmental graduate coordinator. This form will be placed in the student's permanent file.

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 before the end of the second term. The program of study is a complete plan of courses to be taken. 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.

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 towards fulfilling the degree requirements. No grades below "C-" will be counted toward degree requirements. Students without an undergraduate degree in chemical 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 report on research progress, goals, and completed courses at the beginning of the Fall term for evaluation by the graduate and supervisory committees. A form for this purpose is included in the appendix of the graduate handbook. An assessment of the progress of the student in research and courses by the graduate committee will be placed in the student's permanent file. Continuance of assistantships and/or tuition waivers is contingent upon satisfactory evaluations. PhD students must submit and defend a prospectus on the dissertation topic to the supervisory committee within a period of one year of admission to candidacy for the doctoral program.

Time To Degree Completion

Students with undergraduate degrees in chemical or biomedical engineering normally complete the thesis-type master's program in four or five semesters, including one summer semester. 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 masters 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 during their first year, when they will primarily be taking preparatory undergraduate chemical/biomedical engineering courses. 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. They may be supported on research grants after this period.

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 generally do not require the performance of any work beyond the research requirements of the degree. However, research assistants who receive departmental support for tuition waivers may be required to grade for classes. In addition, doctoral candidates will have to satisfy the teaching requirements of the degree (TA for one laboratory course). Teaching assistantship 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, but will typically require less than ten (10) hours per week.

Graduate Course Descriptions

BME 5005 Engineering and Applied Science Aspects of Biology and Medicine (3) Prerequisites: BCH 4053; BSC 2010; ECH 4403; PCB 3063 and 3134, or 4024. An introductory biomedical engineering course that covers engineering aspects of biology and medicine, including cellular, tissue, and organ systems, physiology and pathophysiology, biomechanics, energetics of metabolism, and the systems engineering of physiological processes.

BME 5020 Biophysical Chemistry and Biothermodynamics (3) Prerequisites: CHM 4410, 4411; ECH 3101. This course examines engineering thermodynamics and physical chemistry of living systems, as well as biochemical pH monitoring and analysis.

BME 5030 Biochemical Transport Phenomena (3) Prerequisites: BCH 4053; BSC 2010; ECH 4403. This course examines the intercellular and intracellular transport of biochemical species, active and passive transport across cell membranes, facilitated transport, and enzyme kinetics and transport phenomena.

BME 5086 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 5105 Biomaterials (3) Prerequisites: BCH 4053; BSC 2010; PCB

3063 and 3134, or 4024. This course examines the fundamentals and applications of biological materials, as well as tissue engineering and mechanics.

BME 5385 Animal Surgical Techniques (3) Prerequisites: BSC 2010, permission of instructor. This course examines animal surgical techniques, including animal anesthesia, pre-op and post-op animal care.

BME 5500 Biomedical Instrumentation (3) Prerequisites: EEL 3003, 3003L. This course examines common instrumentation and analytical methodologies in medicine, lasers, optics, and electronics.

BME 5905r Directed Individual Study (1-3) Prerequisite: consent of instructor. Detailed examination of some topic in biomedical engineering. Conducted on a personal basis with the instructor. May be repeated with different topics. A maximum of only three (3) semester hours can be used toward the MS or PhD. May be repeated to a maximum of twelve (12) semester hours.

BME 5910 Supervised Research (3) (S/U grade only.) Prerequisites: graduate standing in biomedical engineering and consent of instructor. 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: consent of instructor. Detailed study of some topic of special interest to biomedical engineers. May be repeated to a maximum of six (6) semester hours with different topics. May be repeated in same semester.

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 (6) semester hours can be counted toward the degree requirements. A minimum of six (6) hours is required. May be repeated to a maximum of twelve (12) semester hours.

BME 6210 Biomechanics of Human Structure and Motion (3) Prerequisite: Doctoral candidate in biomedical engineering. This course examines the theoretical mechanics applied to human structures.

BME 6330 Tissue Engineering (3) Prerequisite: Doctoral candidate in biomedical engineering. This course examines the fundamentals and applications of tissue engineering, tissue culturing and growth, and transplantation and rejection repression.

BME 6530 NMR and MRI Methods in Biology and Medicine (3) Prerequisite: Doctoral candidate in biomedical engineering. This course investigates MR imaging methods, spin echo methods, Bloch equations, proton diffusion, imaging, and microimaging NMR spectrometers in research.

BME 6550 Computer-Aided Design and Control in Medicine and Surgery (3) Prerequisite: Doctoral candidate in biomedical engineering. This course examines the fundamentals and applications of control and design in medicine and surgery, as well as computer controls in laser surgery.

BME 6720 Biostatistical Mechanics (3) Prerequisite: Doctoral candidate in biomedical engineering. This course investigates molecular construction of biological macromolecules, including proteins, DNA, and poly-glycolic compounds. It also examines molecular dynamics in membrane processes.

BME 6938r Special Topics in Biomedical Engineering (3) Prerequisites: doctoral standing in biomedical engineering and consent of instructor. Detailed study of some topic of special interest to biomedical engineers. May be repeated to a maximum of six (6) semester hours with different topics. May be repeated in same semester.

BME 6980r Dissertation (1-9) Prerequisite: doctoral standing 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 (24) semester hours.

BME 8965r Doctoral Qualifying Exam (0) Prerequisite: doctoral standing 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) (S/U grade only.) Prerequisite: consent of instructor. All students must register for this course for the term during which they intend to defend their thesis.

BME 8985 Dissertation Defense (0) (S/U grade only.) Prerequisites: doctoral standing in biomedical engineering and consent of instructor. This course must be included in the final semester schedule for all doctoral students.

ECH 5052 Research Methods in Chemical Engineering (3) Prerequisites: chemical engineering. 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 5128 Advanced Chemical Engineering Thermodynamics II (3) Prerequisite: ECH 5126. Introduction to the basic aspects of nonequilibrium thermodynamics and nonequilibrium statistical mechanics for graduate students. Special emphasis is given to the understanding of the microscopic mechanisms that govern macroscopic transport.

ECH 5261 Advanced Transport Phenomena I (3) Prerequisite: ECH 5842 or permission of instructor. 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 5263r Special Topics in Transport Phenomena (3) Prerequisite: ECH 5261. Selected topics in momentum, heat, or mass transfer. Course content varies with instructor and term taught. May be repeated to a maximum of nine (9) semester hours with different topics.

ECH 5325 Advanced Process Control (3) Prerequisite: ECH 4323 or equivalent. Development of modern concepts in automated control theory. Analysis of the state space theory of linear systems. Controllability, observability, and stability of linear systems. Design of state feedback and state estimators. Introduction to nonlinear systems analysis, and use of differential geometry to develop analogs of linear systems theory in nonlinear systems.

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 5626 Chemical Process Optimization (3) Prerequisite: ECH 4323 or equivalent. This course examines the development of techniques for unconstrained minimization of multivariate functions. Numerical techniques include steepest descent, Newton's Methods, Quasi-Newton's Methods, and conjugate-gradient methods. Topics include introduction to linear and nonlinear programming, simplex method, duality in linear programming, Lagrange multiplier method, Kuhn-Tucker theorems, penalty function and augmented Lagrangian methods.

ECH 5784 Chemical Engineering Environmental (3) Prerequisites: ECH 4403 or equivalent, ECH 4504 or equivalent. 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 5828 Introduction to Polymer Science and Engineering (3) Corequisites: ECH 5126, 5526. 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, 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, Fourier series, Integral (Fourier 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 equa-

tions, 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: Consent of instructor. Detailed examination of some topic in chemical engineering. Conducted on a personal basis with the instructor. May be repeated with different topics. Only three (3) semester hours may be used toward the MS degree.

ECH 5910 Supervised Research (3) (S/U grade only.) Prerequisite: Consent of instructor. Performance of research project required for the non-thesis MS degree.

ECH 5934r Special Topics in Chemical Engineering (3) Prerequisite: Consent of instructor. 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 (6) 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 thesis. May be repeated as often as approved by the department. Only six (6) hours can be counted towards degree requirements. A minimum of six (6) semester hours is required.

ECH 6127 Phase Equilibria (3) Prerequisites: ECH 3101, 5126. Detailed development of equilibrium and stability conditions. Application of these concepts to calculation of equilibrium states. Modern methods of measurement and correlation of phase equilibrium data.

ECH 6272 Molecular Transport Phenomena (3) Prerequisite: Graduate standing. 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 6283 Microrheology (3) Prerequisites: ECH 5261. Rigorous molecular and micromolecular transport mechanics applied to the study of flow phenomena of complex and composite (polymeric, colloidal, and biological) fluids, with an emphasis on the micro-rheological concept.

ECH 6506 Chemical Engineering Kinetics (3) Prerequisites: MAP 3305, CHM 4411, ECH 4403. Mass action systems in gases and liquids; complex reaction networks; collision and transport theory; rate parameters; activated complex theory. Computational modeling of reaction systems, coupled reaction, and transport.

ECH 6536 Surface Science and Catalysis (3) Prerequisite: Graduate standing in chemical engineering. Fundamental theoretical and experimental studies of the physical and chemical processes on the solid surface. Characterization and morphology of the surface using state of the art techniques. Reaction dynamics and chemical reactivity. Molecular dynamics of gas-surface reactions. Chemical synthesis pathways using molecular mechanic and statistical mechanic approaches. Role of quantum mechanics on the prediction of a catalytic complex.

ECH 6848 Operator-Theoretic Methods in Engineering Sciences (3) Prerequisite: ECH 5842. Introduction to the spectral theory of linear self-adjoint and non-self-adjoint operators in Hilbert spaces with special emphasis on problems related to engineering sciences. Applications cover homogeneous and composite systems, and heat, momentum, and mass transport in mixtures of single and multicomponent systems with and without chemical reaction.

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 (24) hours can be applied to the doctoral degree.

ECH 8965r Doctoral Preliminary Exam (0) (S/U grade only.) All doctoral students must enroll in this course the semester they intend to take the qualifying exam.

ECH 8976 Thesis Defense (0) (S/U grade only.) Prerequisites: ECH 5126, 5261, 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) (S/U grade only.) Corequisite: ECH 6980r. Must be included in the final semester schedule for all doctoral students.

Civil and Environmental Engineering

Description. The Department of Civil and Environmental Engineering offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) programs with concentrations in structural, geotechnical, transportation, water resources and environmental engineering. Special areas of emphasis are bridge design, coastal construction, structural analysis and stability; geotextiles, pavements, and soil dynamics; transportation networks and multimodal systems; storm water, water resources management, hazardous waste and solid waste management; and computer aided design, planning, and decision support. The programs of study are flexible and depend on the background and objectives of each individual student who may specialize in any of the several areas of concentration mentioned above. Students receive a broad-based understanding of engineering and science, and gain fundamental contemporary capabilities in an area of concentration necessary to conduct significant and original scholarly research. Each specific Ph.D. program of study is uniquely tailored through consultation with a major professor and supervisory committee that a student selects.

Research Laboratories. The department has several instructional and research laboratories. They include: geotechnical, environmental, hydraulic, pavement, construction materials, and structures.

The 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 undergraduate teaching lab and a graduate research lab. The facilities include equipment and instrumentation needed for physical and chemical 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 reinforce the basics of data collection and analysis. Student 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 instruction.

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 state-of-the-art structures lab was created as part of the phase II building of the college in 1998. This laboratory, over two stories high, with a three-foot reinforced concrete reaction slab, is equipped with 100 kips anchorage pods spaced at four-foot intervals. When fully equipped this facility will provide students with applied instruction on specialized testing of materials and structures, support for high quality research in developing new construction materials, applications for existing materials and innovative structural systems, earth-structure interaction, and fluid-structure interaction.

Computer resources. Students have access to a large number and variety of computer systems. A network is available of nearly 700 computing devices for the academic and research efforts of the college.

The department houses the Crashworthiness and Impact Analysis Laboratory, which is well equipped with the most current, high performance computing environment in order to conduct transportation related research. The equipment includes a Silicon Graphics Origin 2000 technical server with 16 parallel processors, and 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 department faculty members.

The college computers are connected to a high-speed, switched, fiber-optic LAN and to the Internet via the FSU connection to the NSF v

BNS network. Desktop computers are supported by a cluster of Sun, DEC, and SCI servers. Other nearby resources include the Supercomputer Computations Research Institute (SCRI), FAMU Computing Services, and FSU Academic Computing and Network Services (ACNS).

Assistantships. Teaching and research assistantships are available on a competitive basis. Students who have teaching assistantships supervise laboratory courses, 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. See our web site at www.eng.fsu.edu.

Requirements for the Master of Science Degree in Civil Engineering Admission.

An applicant to the program should have a Bachelor of Science degree in civil engineering, environmental engineering, or closely allied field. The applicant must have a B average (3.0 grade point average on a 4.0 scale) in upper level course work preceding the award of the B.S. degree and have a combined score of 1000 or above in the verbal and quantitative components of the general test of the Graduate Record Examination. Foreign applicants are required to meet the above requirements in addition to obtaining a score of at least 550 on the regular Test of English as a Foreign Language (TOEFL) or 213 on the computer based test.

Applications are considered year-round but should be submitted by July 1 for fall enrollment. International students should apply prior to May 1 to allow time for visa and related procedures. Applicants holding degrees in areas other than civil engineering, or closely allied fields, will be required to successfully complete preparatory undergraduate engineering articulation courses prior to beginning advanced work.

The thesis option requires 24 credit hours of course work and 6 credit hours of thesis work. A non-thesis option requires 30 credit hours of course work and 3 credit hours of advanced design project work. Both options require a final oral examination in which the student defends a thesis or project. The general course requirements include 3 hours of advanced mathematics, 15-24 hours in an area of concentration, and 6-9 hours of related electives. A maximum 6 hours of graduate course work in civil or environmental engineering, in which the student earned a grade of B or better, may be transferred from another university. Students are required to enroll and attend a majority of the Graduate Seminar courses offered biweekly. Each student's program is designed with the approval of a major advisor.

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.

Candidates who do not have an undergraduate degree in civil engineering, environmental engineering, or in a closely related field, will be required to take the following articulation courses as a minimum.

Civil Engineering Articulation Courses

| | |
|-----------------------------------------------|---|
| EGN 3311 Civil Engineering Mechanics | 4 |
| EGN 3311 Strength of Materials | 3 |
| CES 3100 Structural Analysis I | 3 |
| CCE 3101 Construction Materials with Lab | 4 |
| CEG 3011 Soil Mechanics | 3 |
| TTE 3004 Transportation Engineering | 3 |
| EES 3040 Intro. to Env. Eng. Science with Lab | 4 |

Environmental Engineering Articulation Courses

| | |
|---------------------------------------------------------|---|
| EGM 3512 Engineering Mechanics | 4 |
| EML 3100 Thermodynamics | 2 |
| CWR 3201 Hydraulics | 3 |
| CEG 3011 Soil Mechanics | 3 |
| EES 2205C Environmental Engineering Chemistry | 4 |
| ENV 4001 Environmental Engineering | 4 |
| CWR 4101 Hydrology | 3 |
| (or) CWR 4202 Hydraulic Engineering I | 3 |

Requirements for the Ph.D. Degree in Civil Engineering

Admission. Students applying for admission to the Ph.D. program in civil or environmental engineering need to fulfill the department requirements for an M.S. degree in civil or environmental engineering or a closely allied engineering discipline from an accredited college or university. The applicant must have a grade point average of 3.0 or better on a 4.0 scale on all upper level undergraduate work and a minimum score of 1100 or better on the combined verbal and quantitative portions of the Graduate Record Examination. Foreign applicants are required to meet the above requirements with a degree from a recognized non-U.S. academic institution in addition to obtaining a score of at least 550 on the regular Test of English as a Foreign Language (TOEFL) or 213 on the computer based test. An applicant must also submit three letters of recommendation from academics or professionals attesting to the applicant's graduate studies potential and an essay of intent providing goals and reasons for pursuing a Ph.D. degree. The Graduate Committee interviews all prospective students. This interview may be waived under extenuating circumstances.

Ph.D. Degree Requirements. The course requirements for the Ph.D. degree in civil and environmental engineering are flexible and depend on the background and objectives of individual students. A student may specialize in any of the several areas of concentration within the department. In addition to the courses in the concentration area, the student must have a minor consisting of at least nine credit hours from an area outside the department. Students are required to enroll and attend a majority of the Graduate Seminar courses offered biweekly. Two Directed Individual Study (DIS) courses are allowed in the Ph.D. program. Each student's specific program of study is uniquely tailored through consultation with a supervisory committee that the student selects. The objectives of course selection are to develop a broad-based understanding of engineering and science, and to gain advanced contemporary capabilities in an area of concentration necessary to conduct significant and original scholarly research.

Before being admitted to candidacy for the Ph.D. degree, a student must fulfill the department requirements for the Master's degree or its equivalent. Students are required to pass the Doctoral Preliminary Examination, usually taken during the second semester of the program, if a student enters the program with an MS degree in civil or environmental engineering. After selecting an area for study and research, candidates, in consultation with their major professor, form a doctoral supervisory committee to assist in the formulation of research and study programs and to monitor their progress. The supervisory committee approves the selection of major and minor program requirements. Research on the doctoral dissertation may not be formally started prior to passing the qualifying examination.

Faculty

The faculty has broad ranging interests and specialties. Faculty members, their rank, degree, and research areas are listed below.

Yassir AbdelRazig, associate professor, Ph.D., Purdue University; construction engineering and management, infrastructure assessment, computer applications.

Makola Abdullah, associate professor, Ph.D., Northwestern University; structural engineering, structural dynamics, active control.

Tarek Abichou, assistant professor, Ph.D., University of Wisconsin-Madison; environmental geotechnics, geotechnical engineering, waste contaminant systems, groundwater remediation, flow in porous media.

Gang Chen, assistant professor, Ph.D., University of Oklahoma; sub-surface transport, environmental biotechnology, surface chemistry, and geochemistry.

Amy B. Chan Hilton, associate professor, Ph.D., University of Virginia; application of genetic algorithms to groundwater remediation systems, groundwater modeling, contaminant hydrogeology, surface water and estuarine modeling.

Wenrui Huang, associate professor, Ph.D., University of Rhode Island; hydrodynamic and pollutant transport of estuaries and other surface water systems, hydraulic and coastal engineering analysis.

Primus V. Mtenga, associate 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.

Renatus Moses, associate 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).

Soronnadi Nnaji, professor, Ph.D., University of Arizona, P.E.; water resources systems, hydrology, hydraulics, engineering decision support systems.

Wei-Chou Virgil Ping, professor, Ph.D., University of Texas at Austin, P.E.; transportation design and materials, pavement design and management, geotechnical engineering.

Michelle Roddenberry, assistant professor, Ph.D., Virginia Tech., P.E.; prestressed concrete, segmental bridges, bridge durability and structural monitoring.

John Sobanjo, associate professor, Ph.D., Texas A & M University, P.E.; transportation engineering, infrastructure engineering and management, construction engineering, computer applications.

Lisa Spainhour, associate professor, Ph.D., North Carolina State University; computer applications in civil engineering, engineering data management, computer aided analysis and design, composite materials, structural analysis.

Kamal Tawfiq, chairman and professor, Ph.D., University of Maryland, P.E.; geotechnical engineering, soil structure interaction, dynamic/nondestructive testing, numerical modeling, geosynthetics..

Jerry W. Wekezer, professor, Ph.D., Gdansk Technical University, P.E.; solid mechanics, finite elements, structural analysis, high-performance computing, impact dynamics and simulations, roadside safety structures, crashworthiness and transportation safety.

Nur Yazdani, professor, Ph.D., University of Maryland: P.E.; prestressing systems for highway bridges; general bridge design and rehabilitation; coastal construction and building codes; timber bridge design, construction, and inspection; wind effect on structures.

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 |
| EES - Environmental Engineering |
| EGN - Civil Engineering: General |
| ENV - Environmental Engineering |
| TTE - Transportation and Traffic Engineering |

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 Geotechnics3

III. Structural Engineering

CES 5105 Advanced Mechanics of Materials.3
 CES 5106 Advanced Structural Analysis3
 CES 5218 Fundamentals of Structural Stability Theory3
 CES 5209 Structural Dynamics3
 CES 5325 Bridge Engineering3
 CES 5585 Earthquake/Wind Engineering3
 CES 5606 Advanced Steel Design3
 CES 5706 Advanced Reinforced Concrete Design3
 CES 5715 Prestressed Concrete3
 CES 6116 Finite Elements in Structures3

IV. Hydraulic/Water Resources Engineering

CWR 5205 Hydraulic Engineering II3
 CWR 5515 Physical Models of Hydraulic Systems3
 CWR 5516 Numerical Models in Hydraulics.3
 CWR 5535 Deterministic Hydrologic Modeling3
 CWR 5635 Water Resources Planning and Management3
 CWR 5646 Multiobjective Water Resources Decision Analysis3

V. Environmental Engineering

ENV 5045 Environmental Systems Analysis3
 ENV 5055 Chemical Fate and Transport in the Environment3
 ENV 5105 Air Quality Management3
 ENV 5335 Hazardous Waste Management3
 ENV 5356 Solid Waste Engineering3
 ENV 5407 Water Reuse Engineering3
 ENV 5504 Environmental Engineering Processes and Operations3
 ENV 5565 Design of Water Quality Management Facilities3
 ENV 5615 Environmental Impact Analysis3

VI. Traffic and Transportation Engineering

TTE 5006 Transportation Engineering3
 TTE 5205 Traffic Engineering3
 TTE 5206 Advanced Traffic Flow Analysis3
 TTE 5256 Traffic Engineering Operations3
 TTE 5267 Theory of Traffic Flow3
 TTE 5270 Intelligent Transportation Systems3
 TTE 5526 Airport Planning and Design3
 TTE 5606 Transportation System Analysis3
 TTE 5645 Environmental Analysis of Transportation System3
 TTE 5805 Highway Geometric Design3

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: EGN 3443, CCE 4004. Construction cost estimating, work breakdown structure, and cost control; critical path method (CPM) scheduling, resource-constrained scheduling, and integral scheduling - cost control; probabilistic scheduling techniques, and linear scheduling techniques; contract specifications, and contract claims (schedule impact) analysis.

CEG 5015 Advanced Soil Mechanics (4) Prereq: CEG 3011, Mechanical behavior, internal stresses and stability; analysis of noncohesive soils, compressibility, consolidation, and settlement of cohesive

soils, analytical techniques for prediction of earth movement.

CEG 5065 Soil Dynamics (3) Prereq: CEG 3011, Study of soil behavior under different types of loading conditions; propagation of stress waves in elastic media, determination of dynamic soil properties, soil liquefaction and liquefaction potential; and analyzing foundation systems subjected to dynamic loads.

CEG 5115 Foundation Engineering (3) Prereq: CES 3101 and CEG 3011. Design of spread footings, pile and caisson foundations, retaining structures a waterfront structures. Investigations of slope stability. Choice between alternative designs.

CEG 5127 Highway Pavement Design (3) Prereq: CES 3731, CES 3811. Analysis of materials used for highway pavements, design of rigid and flexible pavements and sub-bases for highways; geotechnical considerations.

CEG 5203 Advanced Site Investigation (3) Prereq: CEG 2202, senior standing. Presenting methods and procedures of site investigation, including data collection, terrain analysis, subsurf sectioning, field instrumentation, characterization of soil properties, conducting program of site investigations and identifying engineering problems.

CEG 5415 Ground Water, Seepage, and Drainage (3) Unconfined and confined groundwater flow analysis utilizing complex variables, conformal mapping, and elliptical functions, mapping techniques, flow and seepage from canals and ditches, seepage toward wells, effect of seepage on structural foundations, foundations dewatering, and pavement drainage.

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.

CES 5105 Advanced Mechanics of Materials (3) Prereq: CES 3100; EGN 3331. 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, stress concentrations, plastic deformation and fracture.

CES 5106r Advanced Structural Analysis (3) Prereq: CES 3100, EGN 3331. Review of matrix algebra. Direct stiffness method for truss analysis. Computer applications. Statically indeterminate structures. Slope-deflection and moment distribution methods. Computer modeling of structures. Case studies and projects. Application of modern computer commercial codes for structural analysis.

CES 5209 Structural Dynamics (3) Prereq: CES 4101, EGN 3321, MAP 3305. Analysis and design of single- and multi-degree-of-freedom structures subjected to various types of excitations and initial conditions. Computational aspects of dynamic analysis, including approximate methods of analysis. Introduction to earthquake loading and design.

CES 5218 Fundamentals of Structural Stability Theory (3) Prereq: EGN 3331, CES 4101. Review of classical stability and buckling problems. AISC design curves. Eigenvalues and eigenvectors. Differential equations for beams under bending and compression. Stiffness and geometric matrices by direct stiffness and finite element methods. Stability analyses using MathCAD program.

CES 5325 Bridge Engineering (3) Prereq: CES 4605, CES 4702. Introduction to design of modern steel and concrete highway bridges. Materials and properties. Loads on bridges. Substructure design.

CES 5585 Earthquake/Wind Engineering (3) Prereq: EGN 2321, CES 3101, MAP 3305. Fundamentals of structured dynamics. Earthquake and wind loading. Response of undamped and damped single/multi degree of freedom structures subjected to earthquake or wind dynamics loading. Response spectra. Fourier analysis and frequency domain.

CES 5606 Advanced Steel Design (3) Prereq: EGN 3331, CES 4605. Behavior of complex steel elements and structures. Analysis of design of columns and beams under combined effects of flexure, shear, and torsion. Lateral torsional buckling. Plastic design. Design of frames.

CES 5706 Advanced Reinforced Concrete Design (3) Prereq: EGN 3331, CES 3101, CES 4702. Behavior of advanced reinforced concrete structures. Analysis and design of beams for torsion; biaxial columns; two-way slabs; retaining walls; shear walls; thin-walled members. Art of detailing.

CES 5715 Prestressed Concrete (3) Prereq: EGN 3331, CES 3101, CES 4702. Behavior and design of prestressed concrete structures. Beam design for flexure and shear, loss of prestress. Design of slabs and axially loaded members. Precast construction.

CES 5845 Composites in Civil Engineering (3) Prereq: CCE 3101, CES 3100, EGN 3331. Fundamental theories of composite materials; forms of composites and their reinforcements; physical, chemical and

mechanical properties; design and testing methods; civil engineering applications of composite materials.

CES 6116 Finite Elements in Structures (3) Prereq: CES 3101. Basic concepts of finite element analysis (FEA). Boundary conditions and computer techniques used in structural analysis. Structural finite elements for: truss, beam, beam on elastic foundations, frame and plane strain triangular elements. Finite element modeling of engineering structures. Use of commercial software in FEA.

CGN 5315 Probabilistic Design in Civil Engineering (3) Prereq: Consent of instructor, STA 4152 or equivalent. Review of traditional civil engineering design methodology; identify uncertainties, construct probability models of random design parameters; incorporate uncertainty into the design of selected civil engineering systems.

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 in Civil Engineering (1-6) Special topics in civil engineering with emphasis on recent developments. Contents and credits will vary. May be repeated for a maximum of six (6) credit 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 for a maximum of six (6) credit hours. Consult instructor.

CGN 5935 Civil Engineering Seminar (0) (S/U grade only) Prereq: 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 (3-6) (S/U grade only) A thesis representing six (6) credits 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. Three (3) to six (6) credits per semester. A maximum of six (6) credits may be applied toward master's degree.

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 M.S. 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). Prereq: Doctoral Candidacy. S/U grade only. Students get credit for teaching an undergraduate course under supervision of graduate faculty.

CGN 6972 Master's Thesis Defense (0). (S/U grade only) Prereq: 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) Prereq: doctoral candidate status. A dissertation representing twenty-four (24) hours of academic work is a requirement for the Ph.D. degree in civil engineering. The course provides a means of registering for dissertation credit and recording progress towards completion. May be repeated as often as approved by the supervisory committee. A maximum of twenty-four (24) semester hours may be applied towards the Ph.D. degree.

CGN 8985r Dissertation Defense (0) (S/U grade only) Prereq: doctoral candidate status. Must be included in the final semester schedule for all doctoral students. May be repeated once.

CGN 8988r Doctoral Preliminary Exam (0) (S/U grade only) Prereq: 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. Fundamentals of groundwater flow and contaminant transport. Topics include Darcy's Law, flow nets, mass conservation, heterogeneity and anisotropy, storage properties. 3-D equation, 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 4205 and 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: CEG 2202, EES 3040, CWR 3201. Investigation of the effects of urban stormwater runoff on surface and groundwater resources. Includes legal and regulatory

requirements, methods of engineering analysis and design of storm water systems.

CWR 5515 Physical Models of Hydraulic Systems (3) Prereq: CWR 3201, CWR 3201L, MAP 3305. Classical techniques of dimensional analysis and simulation are presented for hydraulic problems, operational physical model will be constructed and used to solve practical engineering problems.

CWR 5516 Numerical Models in Hydraulics (3) Prereq: CWR 3201, CWR 3201L, MAP 3305. Numerical approaches including finite element techniques used in hydrology and hydraulics are presented and applied to simple engineering case studies.

CWR 5535 Deterministic Hydrologic Modeling (3) Prereq: CWR 4101, CWR 3201, CWR 3201L, MAP 3305. Linear and non-linear dynamic modeling of the rural and urban watershed, aquifer, and soil systems as components of the hydrologic cycle, pollution transport in these components.

CWR 5635 Water Resources Planning and Management (3) Prereq: CWR 4202, CWR 4101. Quantity and quality planning of water resources. Economic considerations.

CWR 5646 Multiobjective Water Resources Decision Analysis (3) Prereq: CWR 4202 or ENV 4001. Development of approaches to solve water resources management problems, with multiple objectives.

CWR 5824 Coastal and Estuarine Hydraulics (3). Prereq: CWR 3201, MAC 2313 (or MAC 3313). Coastal hydraulic principles and waves in estuaries and coastal ocean, wave properties and wave forces on coastal structures, tidal motions, mixing and transport in estuaries, coastal engineering analysis.

ENV 5045 Environmental Systems Analysis (3) Prereq: ENV 4001, ENV 4001L. 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. 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 Quality Management (3) Prereq: ENV 4001. Analytical concepts for determination of sources, amounts, and transport of air pollutants; health and environmental effects; design of control devices and management programs.

ENV 5335 Hazardous Waste Management (3) Prereq: ENV 4341 Solid and Hazardous Waste Engineering. Legal and operational definitions, characteristics, amounts of hazardous wastes. Regulatory technical aspects of hazardous waste generation, transportation, processing and disposal. Ethical, public policy, scientific, engineering, and technological issues relative to the production, movement, and control of hazardous wastes. Philosophy and procedures for the studies of contemporary hazardous waste issues and problems.

ENV 5356 Solid Waste Engineering (3) Prereq: ENV 4001, ENV 4001L, Solid and Hazardous Waste Engineering. Source of solid waste, collection and transport, and means of disposal, effects of landfills on groundwater, requirements of federal and state legislation for solid waste management.

ENV 5407 Water Reuse Engineering (3) Course covers wastewater reclamation and reuse; treatment processor and systems; monitoring and control instrumentation; health and social aspects; design of facilities and 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 4202, CWR 3201, CWR 3201L, EES 3040, EES 3040L. 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 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 4001, ENV 4001L. 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: STA 4321 or equivalent and TTE 3004. Nature, characteristics, and theories of traffic flow; street

and highway traffic problems. Traffic survey procedures and origin-destination studies. Theory and design of automatic control of traffic systems and transit systems.

TTE 5206 Advanced Traffic Flow Analysis (3) Prereq: TTE 3004 and STA 4321 or equivalent. Microscopic and macroscopic traffic flow characteristics, demand and supply analysis, capacity analysis, traffic stream models, queuing analysis, computer simulation models, network analysis, and intelligent transportation systems (ITS).

TTE 5256 Traffic Operations (3) Prereq: EGN 2210 and TTE 5006. Operation of transportation systems; monitoring, regulation, and control of traffic.

TTE 5267 Theory of Traffic Flow (3) Prereq: EGN 2210, MAP 3305, STA 4321. Application of theories of traffic flow to the design and control of traffic systems.

TTE 5270 Intelligent Transportation Systems (ITS) (3) Prereq: TTE 3004 and STA 4321 or equivalent. Advanced traffic management systems (ATMS), advanced traveler information systems (ATIS), advanced vehicle control systems (AVCS), commercial vehicle operations (CVO), rural ITS, human factors, institutional issues, architecture and standards, simulation and modeling.

TTE 5526 Airport Planning and Design (3) Prereq: EGN 2210, TTE 5006. Design planning of new airports and redesigns of existing airports; relationships of the airport and the surrounding community.

TTE 5606 Transportation System Analysis (3) Application of system analysis techniques of transportation system design, economic analysis and optimization methods, case studies.

TTE 5645 Environmental Analysis of Transportation (3) Prereq: TTE 5006. Techniques used in the assessment of environmental impact of transportation systems; laws, regulations, and applications to real-world project development.

TTE 5805 Highway Geometric Design (3) Prereq: CEG 2202, CEG 2202L, and TTE 3004. Principles of procedures for the geometric design of highways and streets; considerations of traffic, land use, and aesthetic factors.

Electrical and Computer Engineering

Faculty

Chairman: DeBrunner, Victor E.

Associate Chairman: Harvey, Bruce A.

Eminent Scholar: Thagard, Norman E.

Professors: Arora, Rajendra K.; DeBrunner, Victor E; Foo, Simon Y.; Perry, Reginald J.; Roberts, Rodney G.; Thagard, Norman E.; Zheng, Jim P.

Associate Professors: Arora, Krishna; Baldwin, Thomas L.; DeBrunner, Linda S.; Harvey, Bruce A.; Kwan, Bing W.; Li, Hui; Meyer-Baese, Anke D.; Meyer-Baese, Uwe H.; Tung, Leonard J.

Assistant Professors: Andrei, Petru; Edrington, Chris S.; Weatherspoon, Mark H.; Yu, Ming;

Associate in Electrical Engineering: Brooks, Geoffrey W.

Assistants in Electrical Engineering: Rajagopalan, Ramesh; Skinner, Dave

Description

Electrical of 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 indepen-

dent 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 supported 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 & 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) and 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 pre-

sentation.

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, before the end of the second semester of postbaccalaureate study, be required to take a departmentally administered diagnostic examination. 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 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 that they are knowledgeable enough about their chosen field of research to proceed with a reasonable assurance of success. If the student is successful in demonstrating these attributes, then the student 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

This examination is intended to determine the student's academic preparation for the PhD degree. It consists of a written examination covering the field of electrical engineering, including the areas of communications, digital systems, electromagnetics, electronics, power systems, signals and control. The exam should normally be taken during the second semester after admission to study for the PhD. The student must apply to take the examination in the Department of Electrical and Computer Engineering office by the end of the prior semester. One repeat attempt will be permitted. The examination must be passed within twenty-four months after beginning study for the PhD. Upon satisfactory completion of the doctoral preliminary examination, and upon recommendation of the supervisory committee, the student will be formally admitted to candidacy for the doctoral degree. Registration for dissertation research is then permitted.

Dissertation Proposal

After successfully completing the doctoral preliminary examination, completing the requirement for supervised research (if not waived) and after completing substantially all required courses, the student will prepare and present to the supervisory committee the proposed dissertation topic.

Doctoral Proposal Examination

This is an oral examination given to the student at the time of the presentation of the prospectus or proposed dissertation research area and topic. This examination will establish whether or not the student has sufficient expertise in the selected dissertation area to proceed with the planned research. One repeat attempt will be permitted.

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 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 or/and 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, beam-patterns, 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 spherical 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 opti-

cal 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 optimal 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 con-

trol 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.

Industrial Engineering

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 Engineering offers two graduate degree programs: Master of Science (MS) and Doctor of Philosophy (Ph.D.). 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 system design; CAD/CAM; robotics; artificial intelligence in engineering; precision matching 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

Chuck Zhang, Ph.D., Professor and Chairman, University of Iowa, Precision Machining and Metrology, Intelligent Processing of Composites Materials.

Samuel A. Awoniyi, Ph.D., Professor and Associate Dean, Cornell University, Applied Optimization.

David Jack, Ph.D., Assistant Professor, University of Missouri-Columbia, Composite Materials, Process Simulation, Anisotropic Material Characterization, Engineering Numerical Methods.

Richard Liang, Ph.D., Associate Professor, Beijing University of Aeronautics and Astronautics, Composite Materials, Polymer Materials, Property Characteristic Modeling.

Tao Liu, Ph.D., Assistant Professor, Georgia Institute of Technology, Carbon Nanotube-Based Functional Materials, Processing-Structure-Property Relationship of Polymer and Polymer Nanocomposites, Non-Destructive Optical Characterization Techniques.

Okenwa I. Okoli, Ph.D., Associate Professor, University of Warwick, Composites Manufacturing, Metallurgic Properties of Casting.

Yaw A. Owusu, Ph.D., Associate Professor, Pennsylvania State University, Manufacturing Processes and Materials, Rapid Prototyping.

Joseph J. Pignatiello, Jr., Ph.D., Associate Professor, Ohio State University, Quality Engineering, Applied Statistics.

Ben Wang, Ph.D., Professor and Chairman, Pennsylvania State University, Integrated Product & Process Design, Predictive Maintenance.

Chuck Zhang, Ph.D., Professor & Director of Graduate Studies, University of Iowa, Precision Machining and Metrology, Intelligent Processing of Composites Materials.

Mei Zhang, Ph.D., Associate Professor, Osaka Prefecture University, Nanomaterials Processing and Applications.

Research Facilities

The Department of Industrial Engineering provides an excellent environment for instruction and research. The department has eight laboratories: Advanced Materials Processing, Applied Robotics, Optimization and Simulation, Composite Manufacturing and Testing,

Computer Integrated Manufacturing, Automated Systems, Quality Engineering, Precision Manufacturing and Ergonomics. Each lab is equipped with state-of-the-art research and instructional equipment.

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 15 Ultra Sparc Systems and LAN Manager environment.

Master of Science (MSIE)

The department offers master of science in industrial engineering (MSIE) program options to accommodate students' needs and specializations. Students may pursue a traditional MSIE or an MSIE with specialization in engineering management. For the traditional MSIE program, students are allowed to choose a thesis or non-thesis option. The specialization in engineering management does not require a thesis.

Admission Requirements

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
- ESI 3312 Operations Research I or ESI 4313 Operations Research II or an equivalent course (as determined by the graduate committee),
- Calculus III or Engineering Math or Linear Algebra or an 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 on all upper-division work;
- Good standing in the institution of higher learning last attended;
- A minimum combined score of 1000 on the verbal and quantitative portions of the GRE;
- A minimum score of 580 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; and
- 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' B.S. 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 (30) semester hours, which consists of twenty-four (24) semester hours of course work and six (6) semester hours of thesis. At least eighteen (18) semester hours of the course work hours must be taken in the industrial engineering department.

When filing a degree plan, students must specify one of the department's areas of concentration as their major: manufacturing engineering, quality engineering or industrial systems. The traditional MSIE program consists of three sets of courses: core course, specialization industrial engineering courses and electives.

Core Courses

Every student with the thesis option must take the following courses: 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.

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.

Degree Requirements - Non-Thesis Option

Students are required to complete a minimum of thirty-three (33) semester hours of course work at the graduate level, at least twenty-four (24) of which must be taken in the industrial engineering department. The following are the core courses for the non-thesis option:

- EIN 5412: Computer-aided Manufacturing (3)
- ESI 5247: Engineering Experiments (3)
- ESI 5525: Modeling and Analysis of Manufacturing and Industrial Systems (3)
- EIN 5936: Graduate Seminar (0)
- ESI 5408: Applied Optimization (3)
- ESI 5417: Engineering Data Analysis (3)
- ESI 5451: Project Analysis and Design (3)

[Choose one]

- ESI 5154: Statistical Process Control (3)
- or
- ESI 5228: Introduction to ISO 9000 (3)

Specialization in Engineering Management

Students are expected to complete thirty-three (33) 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.

For further information, consult the department website at www.ie.eng.fsu.edu.

Doctor of Philosophy (Ph.D.)

Ph.D. Degree Admission Requirements

The Ph.D. 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 seventy-two (72) semester hours of work beyond the baccalaureate degree, excluding any credits earned for a master's degree thesis, or a minimum of forty-eight (48) semester hours beyond the master's degree.

Typically, twenty-four (24) of the seventy-two (72) 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, twenty-four (24) must be letter-graded course work combined with a minimum of twenty-four (24) additional hours of dissertation research. The course work beyond the master's consists of: 1) eighteen (18) semester hours of breadth-requirement core courses, and 2) six (6) or more semester hours of depth-requirement courses, as determined by the student's doctoral supervisory committee.

Admissions

- M.S. Degree in Industrial Engineering, science or mathematics, with GPA of at least 3.4/4.0
- GRE scores: at least 700 Quantitative; at least 450 Verbal
- TOEFL score at least 580

- Three favorable recommendations

Core Courses for Ph.D. Students

All Ph.D. students are required to take the following courses as soon as possible after their admission to the program. These courses are required in order to provide students with a common, solid background in mathematics, statistics, and industrial engineering.

Preliminary Examination

Following completion of a major portion of the course work, 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 to begin independent research for the proposed dissertation, the student will take a preliminary examination. This examination normally takes the form of a dissertation proposal. The preliminary examination tests the adequacy of a student's background related to the student's area of concentration, and determines 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 Ph.D. A doctoral dissertation must be completed on a topic approved by the candidate's doctoral supervisory committee. The topic 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.

For further information, consult the department website at www.ie.eng.fsu.edu.

Graduate Courses Master of Science - Industrial Engineering Level Courses

EIN 5119C Computing Topics in Industrial Engineering (3) Prerequisite: COP 3221 or CGS 2402. State-of-the-art computing techniques for industrial engineers. Integration of structured programming, database management systems, mathematical analysis techniques, GUI interface languages and Internet networking principles. Design, development, debugging and management of complex computer-based projects.

EIN 5322 Engineering Management (3) Prerequisite: EIN 5353 (Engineering Economic Analysis). Modeling of existing and future organizations. Emphasis on organizations for the 21st Century. Special consideration given to flat matrix models.

EIN 5336 Production Control (3) Prerequisite: ESI 5417. Basic concepts and fundamentals of production and operations analyses, planning and control. Topics include forecasting, aggregate planning, inventory control, materials requirements planning, operations scheduling, capacity management and case studies.

EIN 5353 Engineering Economic Analysis (3) Prerequisite: EIN 3443, MAC 3305. Feasibility science, mathematics and engineering focused on engineering economic analyses; specifically, design and system alternatives for high-technology operations.

EIN 5392 Manufacturing Processes and Systems (3) Prerequisite: 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 5399 Concurrent Engineering (3) Prerequisite: Graduate or senior with instructor consent. 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 5412 Computer-Aided Manufacturing (3) Prerequisite: EIN 4390C. CAD/CAM. Numerical Control (NC) and Computer Numerical Control (CNC). Programmable Automation. Computer-aided process plan-

ning.

EIN 5413 Computer-Aided Process Planning (3) Prerequisite: EIN 4390C, EIN 4312C, EGN 2123, CGS 3408. 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 5524 System Modeling and Simulation (3) Prerequisite: ESI 3443, FORTRAN. 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 5905r Directed Individual Study (1-3) (S/U grade only.) Prerequisite: Instructor consent. May be repeated to a maximum of 6 credit hours.

EIN 5930 Failure Analysis and Design for Reliability (3) Failure (yield and fracture) criteria with emphasis on design. Introduction to fracture mechanics and fatigue. Failure-mode analysis in metals, polymers and composites. Fractography, microscopy and nondestructive evaluation techniques. Introduction to reliability statistics and design approaches for reliability.

EIN 5930 Data Mining and OR Techniques (3) Instructs in appropriate methodology for processing and analyzing data. Instructs in finding analytical models and algorithms that would reveal internal structure and patterns of the data.

EIN 5930 Reliability Engineering (3) Prerequisite: ESI 5417. An introduction to reliability engineering. Applications of statistical methods for predicting product life using complete and censored data. Topics include degradation models, repairable systems, accelerated testing and failure-time regression models.

EIN 5930 Advanced Composite Engineering Seminar (3) Prerequisite: EMA 5182. Topics include modeling and simulation of composite fabrication processes, fiber preform/LCM process, high temperature composites, introduction to nanocomposites and multifunctional composites, and affordability analysis.

EIN 5930 Nanomaterial and Nanotechnology (3) Prerequisite: instructor consent. Topics includes introduction to fundamentals of nanomaterials and nanofabrication, nanoparticles and properties, nanoclay and nanotube nanocomposites, nano-biomaterials, nanoscale modeling and simulation, nanosensors and nanodevices, self-assembly and nano-manipulation.

EIN 5930r Special Topics in Industrial Engineering (1-6) Prerequisite: Instructor consent. Topics in industrial engineering with particular emphasis on recent developments. May be repeated to a maximum of 6 credit hours.

EIN 5931 Leadership and Communications (3) Prerequisite: Graduate standing. Topics include leadership theories, motivation, goal setting, planning, proposal writing and technical presentations. Presentations given by business leaders.

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 for a maximum of 9 credit hours.

EIN 8976r Master's Thesis Defense (0) (S/U grade only.)

EMA 5182 Composite Materials Engineering (3) Prerequisite: Instructor consent. Covers basics for understanding 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 5154 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 consent. Introduction to ISO 9000 quality system standards. Quality auditing. Audit report writing. Documenting the requirements. Case studies and demonstrations.

ESI 5247 Engineering Experiments (3) Prerequisite: EIN 5417, EGN 3443. Introduction to designing experiments and analyzing their results.

Intended for engineers and scientists who perform experiments or serve as advisors to experimentation in industrial settings. Students must understand 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 gained leads to improved product performance and quality.

ESI 5248 Environmentally Conscious Design and Manufacturing (3) Prerequisite: Graduate standing. Review of basic concepts and fundamentals of environmentally conscious design and manufacturing. 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 5412 (FAMU)/ESI 5408 (FSU) Applied Optimization (3) Prerequisite: ESI 3312. 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. Please note: students enrolled through FAMU should register for ESI 5412, while students enrolled in FSU should register for ESI 5408. (Please see:

<http://www.eng.fsu.edu/~awoniyi/ResearchTopic/ime%20web-site%20material.pdf>)

ESI 5417 Engineering Data Analysis (3) Prerequisite: EIN 3443 or equivalent. Analysis of experimental and observational data from engineering systems. Focus on empirical model building using observational data for characterization, estimation, inference and prediction.

ESI 5451 Project Analysis and Design (3) Prerequisite: EGN 3613, ESI 3312. 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 3312. 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, healthcare 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) Prerequisite: ESI 5412, ESI 5408, ESI 4523, ESI 3321C, EIN 4333. 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.

Ph.D. Level Courses

EIN 6126 Global Manufacturing Strategy (3) Prerequisite: EIN 5399, EIN 5524, EIN 5412. Global alliancing. Policy making. Manufacturing strategy. International standards.

EIN 6357 Advanced Engineering Economy (3) Prerequisite: EGN 3443, ESI 5451. Economic analysis of capital expenditure decisions. Financial mathematics and microeconomics. Decision under risk and uncertainty. Game theory and utility theory.

EIN 6396 Manufacturing System Analysis (3) Prerequisite: EIN 5524, ESI 5524. Review of manufacturing fundamentals, different approaches of system design, tools for analyzing manufacturing systems and metrics for evaluating manufacturing system performance. Case studies and design exercises.

EIN 6934 Total Quality Management Concepts (3) Prerequisite: Please consult with your advisor. This course is offered in conjunction with FEEDS.

EIN 6980r Dissertation (3-24) Prerequisite: Doctoral candidate standing. Mandatory class for all PhD seeking students. May be repeated to a maximum of forty-eight (48) semester hours.

EIN 8968 – Preliminary Doctoral Examination (0). (S/U grade only.) Prerequisite: Doctoral candidate standing.

ESI 6716r Advanced Topics in Optimization (1-9) Prerequisite: ESI 5408. Depending on the research interests of students and the instructor,

this course shall cover advanced topics in optimization and their applications in industrial engineering. Each student shall produce a tutorial paper on an optimization problem/topic to be approved by the instructor.

Mechanical Engineering

Chair: C. Shih

Associate Chair: C. Luongo

Graduate Coordinator: C. Luongo

Undergraduate Coordinator: P. Hollis

Professors: F. Alvi, C.J. Chen, E. Collins, P. Kalu, A. Krothapalli, D. Larbalestier, L. Lourenco, C. Luongo, E. Nellstrom, J. Schwartz, C. Shih, L. Van Dommelen

Associate Professors: D. Cartes, A. El-Azab, P. Hollis, S. Hruđa

Assistant Professors: O. Englander, C. Moore, W. Oates, J. Ordonez

Affiliated Faculty: H. Garmestani, B. Greska, M. Gunsburger, K. Han, Y. Hussaini, C. Tam

Adjunct Faculty: B. Bickley, F. Boeshaghi, G. Buzyna, M. Moore, J. Seely

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. The program provides the student with the skills, knowledge and philosophy that will enable them to continue to grow throughout their professional 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.

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, 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, significant 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, can be found at <http://www.eng.fsu.edu/me>

Research Programs and Facilities

The Advanced Mechanics and Materials Laboratory (AMML) is primarily involved in the computational modeling and thermo-mechanical characterization of high performance materials. In recognition of the need to shift from generating new materials purely from experimental methods, the AMML utilizes computer models to effectively identify potential material systems. This is seen as the ideal way to develop advanced materials to meet the increasing demands of future space and automotive applications in a timely fashion. The overall objective of the laboratory is to engineer materials by establishing relationships between material constituents, processing and performance, and integrating them in computer models. The AMML is equipped with excellent facilities, including a highly automated Materials Testing System testing machine (MTS 810) and a Scanning Electron Microscope. The computational facilities include a network of dedicated workstations (VAX, Silicon Graphics and Macintosh). There is also a direct link to a supercomputer at The Florida State University (a Silicon Graphics Power Challenge XL).

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 of physical importance, that pose particular numerical simulation challenges. The computational program is support-

ed by the School of Computational Science and Information Technology (CSIT) at The Florida State University, which operates an 168 node IBM SP-3 with 84 Gbyte of memory, as well as a heterogeneous compute cluster and several mid range computers.

The Cryogenics Laboratory is a fully equipped facility for the conduct of low temperature experimental research and development. The Laboratory, which is housed at the NHMFL (adjacent to the College of Engineering), supports research and development projects in a wide variety of technical fields. A wide variety of experimental apparatus are available within the Cryogenics Laboratory for research projects.

The Liquid Helium Flow Facility (LHFF) consisting 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 includes 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 T_{min} = 10 K and provide 30 W at 20 K and 60 W at about 70 K.

The above 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. A full complement of amplifiers, signal conditioning equipment and data recorders can be accessed through this system. 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.

Research in controls and mechatronics encompasses many different but related topics that can be divided into 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 Silicon Graphics workstations, multimedia Pentium personal computers, and an array of printers and other equipment.

The Fluid Mechanics Research Laboratory (FMRL), is a well-established, nationally recognized laboratory with a diverse and dynamic research program. A number of faculty and scientists actively and collaboratively conduct research at FMRL, examining a broad range of fluid dynamics problems. The main areas of research are in high-speed flows and their control and the development of non-intrusive diagnostics for the study of complex flows. The laboratory contains a number of state-of-the-art testing and diagnostic facilities, not commonly available at university research centers. Some of these facilities include the following: A recently built Hot Jet Anechoic Facility capable of operating supersonic hot jets - up to 2000∞F; this facility is used for examining and controlling the aeroacoustic properties of supersonic jets at realistic Mach numbers

and temperatures. A STOVL (Short-TakeOff Vertical Landing) Hover Test Facility that is mainly used to study and control jet induced aerodynamic phenomenon on STOVL models during hover. An optical diagnostic development lab and a combustion laboratory, a supersonic and a large subsonic wind tunnel. We study fundamental fluid dynamics problems, which also have direct practical applications. Some of the current research programs include: active control of supersonic jet noise and mixing; control of supersonic impinging jets; control of supersonic cavity flows; development of high-fidelity, three-dimensional Particle Image Velocimetry (3D-PIV); control of separated flows in engine inlets; supersonic flows at micro-scales and aeroacoustic behavior of supersonic jets issuing from nozzles of various geometry. Research is supported by and conducted in close collaboration with industry, such as Boeing, and government agencies, such as NASA, the Office of Naval Research (ONR), the Air Force Office of Scientific Research (AFOSR), and the Defense Research Projects Administration (DARPA). Over the past few years, research has been funded at a level of approximately \$2 million per year.

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, a.c. loss measurements, processing of low a.c. 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 National High Magnetic Field Laboratory 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 are often 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, one example of which is 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 includes 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.

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 qualifications 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.

For additional information, please visit www.eng.fsu.edu/me.

Master of Science

Currently, the department offers two options under the Master of Science (MS) program, a thesis option and a non-thesis option; an MS degree can be obtained under either option. The coursework is roughly divided into three areas: common core courses, depth courses in the student's major area, and breadth courses in other areas of mechanical engineering outside the student's area of focus. Currently, depth courses are offered in the general areas of fluid mechanics and heat transfer, mechanics and material science, and dynamics and controls – including robotics and mechatronics. A total of thirty (30) hours of course work is required to complete the program under the thesis option, while thirty-three (33) credit hours are required under the non-thesis option. A complete catalog detailing the program is available in the department or can be found on the department web site.

Admissions

In order to be admitted, candidates should possess a bachelor's degree in mechanical engineering or a related discipline from an accredited institution. Students who do not possess such a degree will be required to complete a department-designated sequence of undergraduate courses with grades of B or better. Candidates should meet all other University requirements for admission, including the Graduate Record Examinations (GRE).

General Requirements

All students must take the following minimum distribution of courses for a total of twenty-four credit hours:

Common Core Courses

Nine (9) semester hours: EML 5060 Analysis in Mechanical Engineering, two core courses in the major area (either dynamics and controls, solid mechanics and materials, or fluid mechanics and heat transfer).

Core courses in dynamics and controls: EGM 5444 Advanced Dynamics, EML 5317 Advanced Design and Analysis of Control Systems.

Core courses in solid mechanics and materials: EGM 5611 Introduction to Continuum Mechanics, EGM 5653 Theory of Elasticity, EML 5930 Special Topics: Advance Materials.

Core courses in fluid mechanics and heat transfer: EML 5152 Fundamentals of Heat Transfer, EML 5709 Fluid Mechanic Principles with Selected Applications.

Mechanical Engineering Courses

Six (6) semester hours: two courses in Mechanical Engineering.

Elective Courses

Nine (9) semester hours: Select three (3) graduate-level courses in engineering, mathematics, or any science discipline (computer science, physics, etc.). Courses must be selected in consultation with the student's advisor. One of the three (3) courses may include EML 5905r or EML 5910r.

Thesis Option Requirements

In addition to the above general requirements, students must take a minimum of six (6) semester hours of EML 5971r Thesis and EML 8976r Masters Thesis Defense (0). Of the courses taken, at least twenty-one (21) semester hours must be taken on a letter-grade basis.

Non-thesis Option Requirements

The non-thesis option requires thirty-three (33) credit hours, of which at least thirty (30) credit hours must be letter-graded courses. Students must complete twenty-one (21) credit hours of coursework within the department. Six (6) credit hours may be taken outside the department in any of the following areas: engineering, mathematics, or computer science. The remaining six (6) credit hours are devoted to an Engineering Design Project or two additional letter-graded courses.

Doctor of Philosophy

Applicants should possess a Master's degree in mechanical engineering from an accredited institution. They must also have an upper division GPA of 3.00 or higher and a GRE score of 1150 or higher.

In addition to the standard PhD program the department offers a direct BS to PhD program. This program is limited to students with a bachelor's degree in mechanical engineering, excellent academic transcripts and potential for advance research. Applicants may be admitted to the BS-PhD program on a provisional basis if they have a minimum engineering GPA of 3.20 and a 1300 on the GRE. 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. The student must have maintained a graduate GPA of 3.50 or better during their first two semesters. Final admission to the PhD program is granted by the Graduate Committee and the Coordinator of Graduate Studies.

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. Final admission to the PhD program must be approved by the Graduate Committee and the Coordinator of Graduate Studies.

Course Requirements

The standard PhD program requires forty-five (45) credit hours of coursework, of which at least twenty-four (24) credit hours must be dissertation hours. The remaining twenty-one (21) letter-graded credit hours are divided into three areas:

- General Engineering & Mathematics: Students must complete six (6) credit hours of general engineering and advanced mathematics courses. One of those courses must be EML 5930 - Analysis in Mechanical Engineering II. The remaining course must be from the approved course list.
- Breadth Courses: Students must complete two (2) courses from outside their major depth area for a total of six (6) credit hours.
- Elective: An additional fifteen (15) credit hours must be taken to satisfy the elective requirement. The elective courses may be taken in any of the following areas: engineering, mathematics, or any science discipline (computer science, physics,

etc.).

The BS-PhD program requires sixty (60) credit hours of coursework, of which at least twenty-four (24) credit hours must be dissertation hours. The remaining thirty-six (36) letter-graded credit hours are divided into four areas:

- General Engineering & Mathematics: Students must complete six (6) credit hours of general engineering and advanced mathematics courses. One of those courses must be EML 5930 - Analysis in Mechanical Engineering II. The remaining course must be from the approved course list:
- Core Courses: Students must complete two (2) core courses from their major depth area and one (1) core course from each remaining depth area for a total of twelve (12) credit hours.
- Mechanical Engineering Courses: Students must complete six (6) credit hours of mechanical engineering courses.
- Electives: Students must complete eighteen (18) credit hours of course work in any of the following areas: engineering, mathematics, and/or any science discipline.

Preliminary Examination

Before students can be admitted to candidacy for the doctoral degree, they must pass the Preliminary Examination. The exam is usually taken during the second semester of the student's program (fourth semester for BS-PhD students). Research on the doctoral dissertation may not be formally started prior to passing the preliminary examination.

After passing the preliminary examination and selecting an area of study and research, a candidate, in consultation with their dissertation supervisor, must form a dissertation committee. The dissertation committee assists in the formulation of research and study programs and monitors the candidate's progress.

Prospectus Defense

Within one year of obtaining doctoral candidacy status each student must present to their dissertation committee a prospectus on a research project suitable for a doctoral dissertation. The prospectus defense consists of two parts: 1) A forty-five minute presentation of the proposed dissertation topic by the student. 2) An oral examination in the general area of the dissertation. Students will have two chances to pass the prospectus 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 and publications in archival journals serve, 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.

Definition of Prefixes

EGM - Engineering Mechanics
EGN - General Engineering
EMA - Materials Engineering
EML - Mechanical Engineering

Graduate Courses

EGM 5351. Introduction to Finite Element Methods of Analysis (3). Prerequisite: EGN 5456. Study of variational principles, weak formulation, finite element formulation of second and fourth order equations, and computer code development.

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 5630. Mechanics of Composite Materials (3). Prerequisite: EGM 5611. Micromechanics of fiber-reinforced composites; thermomechanical characterizations of polymeric, metallic, and ceramic matrix composite; failure mode; interface and design of composite structures.

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 5671. Theory of Plasticity and Viscoelasticity (3). Prerequisite: EML 5155. Provides knowledge of inelastic behavior of materials under multiaxial loading conditions which is essential to mechanical engineers specializing in solid mechanics.

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 6290. Advanced Mechanical Vibrations (3). Covers analytic dynamics, continuous systems, approximate and finite element methods, nonlinear vibrations, and computational techniques.

EGM 6470. Control Systems Design (3). Prerequisites: EGM 5630, EML 5311. Provides students with the basic system theory and design techniques to enable them to design controllers for mechanical engineering systems.

EGM 6565. Computational Materials Science (3). Prerequisites: EGM 5611, EML 5060. Course covers mathematical description of materials at atomic, continuum and meso scales; deformation and defects in solids; evolution of microstructure in polycrystalline and composite materials.

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 5455. Numerical Methods in Engineering (3). Prerequisites: MAP 3305; CGS 3410 or equivalent. The application of numerical methods to the solution of engineering problems including general principles, linear equations, solution of nonlinear equations, interpolation and least squares, integration, ordinary differential equations, introduction to finite differences, and finite elements.

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 5185. Composite Materials and Structures (3). Prerequisites: EML 3234, EGM 3520, EML 3302L. Includes a treatise of the various methodologies of processing and property characterizations. Design aspects and industrial applications of current advanced composite materials in all major categories.

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 5104. Advanced Engineering Thermodynamics (3). Prerequisite: EML 3101. General principles of thermodynamics; postula-

tional treatment of the laws of thermodynamics; development of formal relationships and principles for general systems; application to pure substance, multiphase mixtures, chemical, magnetic, and elastic system.

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.

EML 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 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, geothermal 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, 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 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 kinematic 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 5835. Advanced Robotics and Mechatronics (3). Prerequisites: EML 4800 and 5802. Course covers computer vision for

robotic systems, manipulator kinematics and dynamics, manipulator control, artificial intelligence, mechatronics product design and development, and microprocessors in mechatronic systems.

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 5935r. Mechanical Engineering Seminars (0). (S/U grade only.) May be repeated to a maximum of ten times.

EML 5971r. Thesis (3-6). (S/U grade only.) A minimum of six (6) semester hours is required.

EML 6157. Radiative Heat Transfer (3). Prerequisite: EML 5152. Presents a comprehensive, systematic, and unified treatment of fundamental concepts, basic theory, and methods of solution to radiative transfer problems and the interaction of radiation with other modes of heat transfer.

EML 6365. Robust Control (3). Prerequisite: EML 5361. Course covers control design for systems with uncertain dynamics; robust H_∞ design, structured singular value synthesis; LMI and Riccati equation solution techniques.

EML 6716r. Advanced Topics in Fluid Dynamics (3-6). Prerequisite: EML 5709. Topics vary from term to term and include: boundary layers, jets, free shear layers and wakes, acoustics, shock waves and related discontinuities, one dimensional unsteady flow, steady supersonic flow in two dimensions, transitions, and turbulence. May be repeated to a maximum of six (6) semester hours.

EML 6726. Advanced Computational Fluid Dynamics (3). Prerequisites: EML 5060, 5725. The CFD methods will be applied to several examples as computing projects. They include flow in channels, over flat plate, and airfoils. Through these examples, students will obtain experiences in developing and following the numerical procedures in solving the compressible viscous flow problems. Topics covered are algorithm application and optimization on super-computers; boundary-layer computations; INS, PNS, and RANS simulations.

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

Master of Science in Health Care Administration Degree

Program Description

Florida A&M University's master of science degree program in health administration is designed to provide the necessary skills for those seeking leadership positions in a variety of public, private nonprofit, and for-profit health care organizations, including but not limited to, hospitals, long-term care organizations, integrated delivery systems, insurance firms, medical group practices, ambulatory care organizations, mental health agencies, public health, managed care and health care consulting.

Located in the School of Allied Health Sciences, the program seeks to improve the quality of health services by providing a comprehensive graduate education in health administration through excellence in teaching, research, and service to the community. Graduates of the program will be prepared to deal with a broad range of community health issues in a manner which demonstrates superior knowledge and skills in solving problems through a range of organizational responses.

The program is designed to meet the educational needs of both traditional and nontraditional students. With classes offered primarily in the evening hours, the program is ideal for those individuals who wish to maintain their full-time employment while pursuing a graduate degree in health care administration. However, the program is also flexible enough to allow full-time students to complete all degree requirements in a compressed time frame.

Admission Criteria

Applicants to the program must meet the minimum requirements for admission including: (1) a baccalaureate or higher degree from an accredited college or university, (2) a grade-point average of 3.0 or better in the last 60 semester hours (or equivalent) of undergraduate work completed, and (3) a satisfactory score on the Graduate Record Examination (GRE) or the Graduate Management Admission Test (GMAT) to be considered for admission. The preferred standards are at least a cumulative GPA of at least 3.0 on a 4.0 scale and a GRE score of 1000. An average of 500 points on each of the GRE's three sections usually translates to approximately 500 GMAT score. Foreign students whose native, educational, or working language is not English are required to take the TOEFL (Test of English as a Foreign Language) and score at least 550. Applicants are required to submit, in addition to the University application, a resume, three letters of recommendation, academic transcripts, an autobiographical essay (300 to 500 words), and GRE/GMAT scores. Both scholastic and experiential factors are weighed in screening prospective students. Selected candidates may be interviewed by the Admissions Committee.

Curriculum Description

A minimum of fifty-four (54) credit hours, distributed among the core, concentration, and field/residency requirements, is required in the Master of Health Administration degree program. The maximum allowable time for degree completion is five years. The courses offer a balance coverage of the most important elements in the field of health administration and the functional areas of business. Courses in finance, economics, and statistics are designed to help students develop problem-solving and decision-making skills. Management, marketing, planning, and organizational theory courses are included in the curriculum to acquaint students with conceptual framework and operational aspects of health services administration. The curriculum also includes a series of courses designed to introduce students to significant changes impacting the healthcare delivery system. The integrative part of the curriculum includes a management research project and an administrative residency. Students admitted to the program are expected to have completed the following foundational courses: Financial Accounting, Managerial Accounting, Microeconomics, Statistics, and Introduction to Computer.

Faculty

Professor: Mosley, Barbara

Associate Professors: Hudson, William; Lewis, Marisa

Assistant Professors: Roberts, Velma; Perryman, Martha

Semester 1

| | |
|------------------------------------------------------------------------|---|
| HSA 5103 Introduction to Health and Medical Care Organizations | 3 |
| HSA 6414 Social Dimensions and Issues in Health Care | 2 |
| HSA 5752 Health Care Statistics | 3 |
| HSA 6175 Health Care Financial Management | 3 |
| HSA 5926 Executive Seminar in Health & Business Communications . . | 1 |

12

Semester 2

| | |
|---------------------------------------------------------------------------------------|---|
| HSA 6432 Economic Aspects of Health Care | 3 |
| HSA 6178 Cases in Health Care Financial Mgt. | 3 |
| HSA 6415 Managerial and Administrative Uses of Epidemiology | 2 |
| HSA 6118 Organizational Theory and Behavior in Health Care Organizations | 3 |
| HSA 5935 Executive Symposium I | 1 |

12

Semester 3

HSA 6153 Current Issues in Health Policy and Politics3
 HSA 6735 Applications of Research Methods in Health Services Mgt. . .3
 HSA 6149 Health Care Planning and Marketing3
 HSA 6925 Executive Symposium II1
 10

Semester 4

HSA 6507 Health Information Systems and Risk Management3
 HSA 5426 Legal Aspects and Ethics in Health and Medical Care2
 HSA 6187 Leadership and Human Resources Management
 in Health Care3
 HSA 6385 Quality Management in Health Care3
 11

Semester 5

HSA 6938 Health Management Capstone3
 HSA 6978 Master's Thesis or
 HSA 6875 Health Management Fieldwork6
 9

Total Graduate Credits54

Course Descriptions

HSA 5103 Introduction to Health and Medical Care Organization (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 explored.

HSA 5752 Health Care Statistics (3) Application of statistical tools to health administration and policy. Includes frequency distributions, hypothesis testing, measures of central tendency, measures of variability, probability, linear regression, correlations, analysis of variance, and other statistics of value to the health administrator.

HSA 6432 Economic Aspects of Health Care (3) 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 6175 Health Care Financial Management (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 5926 Executive Seminar in Health & Business Communications (3) 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 the use of graphs and other visual aids in business presentations.

HSA 6414 Social Dimensions and Issues of 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 (3) Application of epidemiological and community health concepts in health services management. Analyze data pertaining to the distribution and determinants of disease and illness.

HSA 6118 Organizational Theory and Behavior in Health Care Organizations (3) Applies organization theory and behavior to health organizations. Motivation and leadership, intergroup 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 5935 Executive Symposium I (3) 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 6153 Current Issues in Health Policy and Politics (3) 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 5426 Legal Aspects and Ethics in Health and Medical Care (3) 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 6149 Health Care Planning and Marketing (3) Planning and marketing strategies and outcomes examined from the perspective of health care organization and professional. Topic 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 6735 Application of Research Methods in Health Services Management (3) An application of statistical methods, quantitative methods, and operations research within health services management and policy contexts.

HSA 6507 Health Information Systems and Risk Management (3) Concepts and implementation of clinical and health information systems to support managerial planning, control, decision making, and risk assessment and management.

HSA 6187 Leadership and Human Resources Management in Health Care (3) 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 6925 Executive Symposium II (3) 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 6978 Master's Thesis (6) An independent research project completed under the supervision of a faculty. Involves student exploration and completion of literature review of an approved research topic, design of research, and completion of the research. Completed thesis must be defended before a committee.

HSA 6875 Health Management Fieldwork (3) Practical experience in a participating health organization under direct supervision of an approved preceptor.

HSA 6385 Quality Management in Health Care (3) 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 are measured and evaluated.

HSA 6938 Health Management Capstone (3) This course will provide an opportunity for students to understand how principles, concepts and theories of health administration may be applied in an operational setting. It will convert what to do knowledge into "how to do" practical application in preparing for the health management fieldwork experience and employment after graduation.

HSA 6178 Case Studies in Healthcare Financial Management (3) This course is designed to provide students with an opportunity to apply the financial accounting principles and concepts in health management that are presented in the graduate course "Health Care Financial Management." Topics will include: capital investment, decision analysis, budgeting, variance analysis, cost allocation, ratio analysis, management of working capital, rate setting and reimbursement.

**DIVISION OF OCCUPATIONAL
 THERAPY**
Master of Science in Occupational

Therapy

Occupational therapy is a health care profession that promotes life-long 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.

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 that serves 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 to carry out 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 practica 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.

Accreditation Status

The Occupational Therapy program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA) located at:

4720 Montgomery Lane

P.O. Box 31220
Bethesda, MD 20824-1220
301-652-AOTA (2682)
www.aota.org

The ACOTE on-site evaluation awarded the program full accreditation status as of December, 2004.

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

Associate Professors: Hinds, Maria

Assistant Professors: Oliveira, Debora

Occupational Therapy Pre-requisite Courses

All prerequisites must be completed prior to entrance into the program.

Undergraduate track: Completion of all pre-requisite coursework. See Health Sciences, concentration in Occupation and Wellness.

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

One course in Research

Health Care Research

Master of Occupational Therapy Curriculum

Year One

Fall Semester

| | |
|------------------------------------------------------------|----|
| OTH 3533/5206 Occupation Across the Life Span | 3 |
| RCS 4060/5080 Medical/Psychosocial Aspects of Disability I | 3 |
| HIM 3437/5XXX Fundamentals of Medical Science I | 3 |
| OTH 4721/5723 Professional Development I | 3 |
| OTH 4030/5032 Foundations of Occupational Therapy | 3 |
| | 15 |

Spring Semester

| | |
|--------------------------------------------------|----|
| OTH 4035/5033 Concepts in Human Occupation | 3 |
| OTH 4140/5142 Therapeutic Communication Skills | 3 |
| HIM 3438/5XXX Fundamentals of Medical Science II | 3 |
| OTH 3992/5245 Neuroanatomy | 3 |
| | 12 |

Year Two**Summer Semester**

| | |
|----------------------------------------|---|
| OTH 5243 Functional Human Motion w/Lab | 4 |
| OTH 5241 Human Gross Anatomy w/Lab | 4 |
| | 8 |

Fall Semester

| | |
|---------------------------------------------------------------------------|----|
| OTH 5205 Biopsychosocial Development I w/Lab: Infancy thru Adolescence | 5 |
| OTH 5766 Scientific Inquiry I | 1 |
| OTH 5935 Seminar I: Infancy thru Adolescence | 1 |
| OTH 5141C Communication and Interaction w/group | 3 |
| | 10 |

Spring Semester

| | |
|----------------------------------------------------------------------------|----|
| OTH 5207C Biopsychosocial Development II w/Lab: Adulthood through Aging | 5 |
| OTH 6936 Seminar II: Adulthood through Aging | 1 |
| OTH 6270 Occupational Pharmacology | 2 |
| OTH 6715 Leadership/Management | 3 |
| OTH 6767 Scientific Inquiry II | 1 |
| | 12 |

Year Three**Summer Semester**

| | |
|---------------------------------------------------------------|---|
| OTH 6830 Biopsychosocial Development III: Community Models | 3 |
| OTH 6833 Practicum III: Community Models | 1 |
| OTH 6937 Seminar III: Community Models | 1 |
| OTH 6768 - Scientific Inquiry III | 1 |
| OTH 6002 - Health Care Foundations | 2 |
| | 8 |

Fall Semester

| | |
|--------------------------------|---|
| OTH 6941 Fieldwork: Rotation I | 8 |
| OTH 6938 Advanced Topics | 1 |
| | 9 |

Spring Semester

| | |
|--------------------------------------|---|
| OTH 6942 Fieldwork: Rotation II | 8 |
| OTH 6727 Professional Development II | 1 |
| | 9 |

| | |
|-----------------------------|------------|
| Total Graduate Credits | 56 |
| Total Pre-requisite Credits | 120 |
| TOTAL | 176 |

Course Descriptions

OTH 3533/5206 Occupations Across Lifespan (3) 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.

OTH 4721/5723 Professional Development I (3) 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 4030/5032 Foundations of Occupational Therapy (3) 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 4035/5033 Concepts in Human Occupation (3) 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 4140/5142 Therapeutic Communication Skills (3) This course is designed to provide students, in lecture and laboratory sessions, with opportunities to experience and participate in practical applications of therapeutic communication skills within patient/consumer-simulated contexts. Students will participate in small and large therapeutic group experiences designed to acquire functional knowledge of a variety of skills necessary to effectively communicate with individuals across the lifespan.

OTH 5241 Human Gross Anatomy w/Lab (4) 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 Motions w/Lab (4) 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 5205C Biopsychosocial Development I w/Lab: (5) Infancy thru 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 diagnosis and populations. They will also learn the importance of a comprehensive holistic approach to human health.

OTH 5766 Scientific Inquiry I (1) 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 5935 Seminar I: Infancy thru Adolescence (1) 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 5141C Communication and Interaction with Groups w/Lab (3) 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 references to design groups and group interventions for a broad range of client populations.

OTH 3992/5245 Neuroanatomy (3) 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 5207C Biopsychosocial Development II w/Lab: Adulthood thru Aging (5) 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 6936 Seminar II: Adulthood thru Aging (1) Provides students with a modified problem-based learning experience with focus on appropriate acquiring of knowledge, skills and adoption of professional attitudes.

OTH 6270 Occupational Pharmacology (2) 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) 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 6767 Scientific Inquiry II (1) This research course culminates with the submission of the first of two drafts of student research proposals.

OTH 6830 Biopsychosocial Development III: Community Models (3) 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) 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 6937 Seminar III: Community Models (1) Modified problem-based learning experience.

OTH 6768 Scientific Inquiry III (1) Students will be provided with a forum to present, discuss and develop research proposals.

OTH 6002 Health Care Foundations (2) Course will examine and analyze the official documents 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 6941 Fieldwork: Rotation I (8) 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 6938 Advanced Topics (1) This course is designed to develop student's research skills. Students must submit and present scholarly reports of advanced topics. Students will present research findings to faculty and peers.

OTH 6942 Fieldwork: Rotation II (8) 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 6727 Professional Development II (1) 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.

DIVISION OF PHYSICAL THERAPY

Doctor of Physical Therapy

Physical Therapy 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 variety 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, carpal tunnel syndrome, 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 therapist 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 met 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 two and a half-year professional curriculum.

Admission 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 1,000 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 & Research Admissions Office, an application for admission to the Doctor of Physical Therapy Program 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 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.

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. Four 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 American Physical Therapy Association. While students are encouraged to provide input and to take on a more active research and decision-making role 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 weeks. Cost of living expenses, housing and travel arrangements, etc., 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.

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.

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.

Faculty

- Professor:** Bell, Arnold
- Associate Professor:** Toran, Eric
- Assistant Professors:** Reaves, Phyllis; Smothers, Bernard

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 2048 – General Physics I Lab 1
 PHY 2054 – College Physics II 3
 PHY 2059 - General Physics II Lab 1

*The following courses may be taken for the Physics courses above:

PHY 2004 – Elements of Physics I w/Lab 4
 PHY 2005 – Elements of Physics II w/Lab 4

Doctor of Physical Therapy Curriculum

Year One

Fall Semester

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
 13

Spring Semester

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
 15

Summer Semester

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
 15

Year Two

Fall Semester

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 6934 – Clinical Integration 2
 14

Spring Semester

PHT 6713 – Prosthetics & Orthotics w/Lab 2
 PHT 6312 – Orthopedic III w/Lab 3
 PHT 6328 – Pediatric Physical therapy 2
 PHT 6620 - Scientific Inquiry III 1
 PHT 6935 - Clinical Integration III 2
PHT 6822 – Clinical Education II 4
 14

Summer Semester

PHT 6420 – Teaching and Learning 1
 PHT 6960 - Professional Physical Therapy Practice 2
 PHT 6733 - Special Topics in Physical Therapy 2
 PHT 6373 – Gerontology 2
 PHT 6402 – Psychological Aspects of Disability 1
PHT 6823 - Clinical Education III 4
 12

Year Three

Fall Semester

PHT 6824 – Clinical Education IV 8

Spring Semester

Differential Diagnosis 3
 Diagnostic Evaluation 3
 Health and Wellness 3
 Advanced EBP 3

 Didactic Learning 74
 Clinical Education 17
TOTAL 103

Course Descriptions

PHT 5024 Health Care Systems & 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 that have direct fiscal implications for physical therapists and the health care environment today and

how it is anticipated to 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 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 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 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 & 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.

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 for all students.

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 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 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 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 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 of 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 6248 and PHT 6248L Orthopedics PT II/Lab (3) Advanced principles of physical therapy management of individuals with orthopedic diseases and dysfunction.

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 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 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 6219 and PHT 6219L Physical Agents & 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 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 6312 and PHT 6312 L Orthopedic III PT/Lab (3) Advanced course on arthrology, joint evaluations, joint mobilization techniques, indications and contraindications for joint mobilization of the extremities, spine and TMJ. Students will be introduced to screening for medical diseases and orthopedic differential diagnosis. Selected manipulation techniques for the spine will be included in this course.

PHT 6328 Pediatric PT (2) The course will cover principles of pediatric examination, evaluation, diagnosis, prognosis and treatment.

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 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.

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 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 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 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 XXXX Health Promotion and Wellness () 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 the area of 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 XXXX Diagnostic Testing in PT Practice () This course is designed to provide a basic understanding of the indications and implications of commonly 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 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 XXXX Differential Diagnosis () 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 XXXX Advanced Evidence Based Practice () 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 cardiopul-

monary, orthopedic, neurological, and other medical problems.

SCHOOL OF ARCHITECTURE

The School of Architecture offers three 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.)
3. The Master of Landscape Architecture (MLA Professionally Accredited Program)

Each of these degree programs provides students the flexibility to plan their curriculum with the faculty advisor to respond to the student's interest and career intention.

Types of Applicants:

Applicants to the graduate programs are generally of three types:

1. Students who have completed the equivalent of our Bachelor of Science in Architectural Studies.
2. Students who come with prior degrees in architecture from other schools but are missing certain required undergraduate courses that must be taken in addition to the graduate course work.
3. Students who have a prior degree in a field other than architecture.

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. For requirements of the School of Graduate Studies and Research, see that section of this Catalog. Requirements of the School of Architecture 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: Graduates of a non-professional Bachelor of Science in Architectural Studies (B.S.Arch.) degree who do not wish to gain licensure OR graduates who possess a bachelor's degree in an allied field such as: interior design, city planning, industrial design, building construction, construction technology engineering, or computer graphics.
 - c. Master of Landscape Architecture Degree: An undergraduate degree. The field of the degree helps determine the number of credit hours required for the MLA degree.
2. Admission requirements for all applicants are:
 - A letter indicating the degree program to which applicant is applying. The letter should explain the applicant's educational and career background, goals, and reasons for selecting the degree program and the School.
 - A résumé
 - A portfolio of recent academic design work. This is not required for students with a non-design bachelor's degree.
 - Three letters of reference from people who can speak knowledgeably about the quality of the applicant's recent work.
 - A completed FAMU graduate application form with transcript.

- Schedule: All students must submit applications by January 15. Applications received after these dates will be considered on a space-available basis.

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 is 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 who fail to maintain the required conditions for progress and retention could face termination of their graduate student status. A failing grade in a required course or a grade below that required for advancement in the student's graduate curriculum as described in the Catalog requires course retake. 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

The School of Architecture offers two distinct paths to the professional Master of Architecture degree:

Path A

Path A of the first professional degree Master of Architecture program 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 professional Master of Architecture.

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 his/her undergraduate career. 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.

Path B

Path B of the first professional degree Master of Architecture program 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.

Required Course Work

Below are the required courses for the Master of Architecture degree:

| | |
|-------------------------------------------|----|
| ARC 6357 Graduate Design 6.1 | .5 |
| ARC 6358 Graduate Design 6.2 | .5 |
| ARC 5206 Advanced Architectural Theory | .3 |
| ARC 6390 Models of Inquiry | .3 |
| ARC 6974 Thesis/Master's Project Planning | .3 |
| ARC 6391 Theories of Intervention | .3 |
| ARC 6910 Thesis/Master's Project Research | .6 |
| ARC 6971 Thesis/Master's Project | .6 |
| ARC 5288 Practice II | .3 |

| | |
|---------------------|-----------|
| ARC 5286 Practice I | .3 |
| Electives (5) | 15 |
| Total | 55 |

Master of Architecture

Suggested Time Frame

Path A

Year One

Fall Semester
 Design 6.1
 Advanced Architecture Theory
 Models of Inquiry
 Elective

Spring Semester
 Design 6.2
 Thesis Planning
 Theories of Intervention
 Elective

Year Two

Fall Semester
 Thesis/Master's Project Research
 Practice I
 Elective
 Elective

Spring Semester
 Thesis/Master's Project
 Practice II
 Elective

Path B

Year One

Fall 1
 Arch. Computer Applications
 Graduate Design 1
 New Technology of Buildings
 Architectural History I

Spring 1
 Graduate Design 2
 Architectural Structures 1
 Architectural History II
 Environmental Technology IV

Year Two

Summer
 Graduate Design 3
 Materials and Method of Construction III
 Modern Architectural History

Fall 2

Graduate Design 4
 Adv. Architectural Theory
 and Philosophy
 Models of Inquiry
 Elective

Spring 2

Graduate Design 6.2
 Thesis Planning
 Architectural Structures II
 Theories of Intervention

Year Three

Fall
 Thesis/Master's Project Research
 Graduate Design 6.1
 Practice I

Spring
 Thesis/Master's Project
 Practice II
 Architectural Structures III
 Electives

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.

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 5287 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 6217 Theories of Intervention (3) This course investigates architecture as an agent of change, that is, as an instrument of intervention. The course emphasizes gaining an understanding of and appreciation for the various contextual fabrics in which architecture participates, the formation of value positions by designers in intervention situations, and processes for rendering intervention decisions more deliberate and considered.

ARC 6245 Models of Inquiry (3) Inquiry is examined in the context of alternative design methods and philosophical postures. The major course project consists of the establishment of a philosophical position that can be the basis for the future master's project.

ARC 6357 Graduate Design 6.1 (5) The course focuses on design as inquiry of urban design and urban architecture, with an emphasis on design as a method of intellectual discourse.

ARC 6359 Graduate Design 6.2 (5) [Prereq. ARC 6357.] This is the last formal design studio in the graduate program. The course has two components: 1) the development of an urban design scheme; 2) the exploration of a thesis topic and its implication in making architecture.

ARC 6974 Thesis/Master's Project Planning (3) [Prereq. ARC 6245.] The subject of the course is the task of planning a thesis or master's project in architecture, specifically of selecting an appropriate topic and selecting appropriate research methods.

ARC 6910 Thesis/Master's Project Research (V) [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 (V) [Prereq. ARC 6910.] This is the concluding class in the thesis course sequence. The students work closely with their thesis committee to produce the necessary document as required by the School of Graduate Studies and Research.

Master of Landscape Architecture

Program Objective

The MLA curriculum addresses the relationship between the natural environment and the man-made landscape. Landscape architects design and plan outdoor spaces to enhance both the physical and sensual experiences of human users. The preservation and sustainability of the natural environment and man-made landscapes are essential concerns of contemporary landscape architects. The mission of the Master of Landscape Architecture program is to provide students with the verbal, intellectual, and design skills required to achieve the highest level of professional or academic practice.

The course of study incorporates practical design experimentation and scholarly investigation in the design, planning, and preservation of rural, suburban, and urban communities. There is a dual emphasis required of all students that focuses upon not only the core skills associated with professional practice but also upon pure and applied research within the discipline. The MLA degree prepares graduates for private and public practice as well as careers in academic and research organizations.

Degrees

For students holding an undergraduate degree in a field other than landscape architecture or architecture, a first professional degree is offered. This curriculum for the first professional degree requires a total of 90 credit hours, which includes a terminal thesis. The suggested time frame for completion of this degree is three years.

For students holding an accredited undergraduate degree in landscape architecture or architecture, an advanced degree is offered which requires a total of 60 credit hours including a terminal thesis. The suggested time frame for completion of this degree is two years.

Both degrees prepare graduates for professional leadership roles within landscape architecture, architecture, planning, and engineering firms as well as within local, state, and federal public agencies. The interdisciplinary nature of the discipline is reinforced through the incorporation of electives and opportunities for collaborative work into the course of study for both degrees. The curriculum offers sequenced courses in design, history and theory, construction technology, and graphic communication.

Landscape architecture is a licensed profession in the state of Florida and in 48 additional states. The program supports a student chapter of the professional organization that represents landscape architects, the American Society of Landscape Architects (ASLA).

Required Course Work*

| | |
|----------------------------------|-----------|
| Design Studio | 30 |
| Professional Courses | 36 |
| Approved Electives | 12 |
| Thesis Research and Thesis | 12 |
| Total | 90 |

*Curriculum adjusted for advanced degree candidates

Admission Requirements

Admission to the Master of Landscape Architecture program requires:

- * Completion of graduate application form;
- * Completion of the equivalent of an undergraduate degree with a 3.00 overall GPA in the last 60 hours of coursework or a combined score of 1000 on the GRE;
- * A one-page letter explaining the applicant's educational and career goals;
- * A resume, samples, or representations of recent, design-related work;
- * Three letters of reference, and;
- * If an international student, a score on the TOEFL exam as required by the School of Graduate Studies and Research.

Theses: A terminal thesis is required for both first professional degree and advanced degree candidates. These theses involve the generation of new knowledge and innovative scholarly investigations within the discipline of landscape architecture. These works are to be accomplished within the established guidelines for graduate academic theses. Each thesis will frame a specific hypothesis related to a broader theme of inquiry. The theme of inquiry will structure the individual student's electives and research methodology. Interdisciplinary linkages will be encouraged in both thesis subject matter and thesis committee membership.

Master of Landscape Architecture

First Professional Degree

Suggested Time Frame

Year One

Fall Semester

Design Studio 1
Landscape Computer Graphics
Landscape Architecture History
Site Engineering

Spring Semester

Design Studio 2
Landscape Modern History
(Elective-Graphics)
Site Implementation

Year Two

Fall Semester

Adv.Land.Arch.Design 1
Landscape Architecture Plants 1
Fla. Natural Communities
Urban Design

Spring Semester

Adv.Land.Arch.Design 2
Landscape Architecture Plants 2
(Elective - Thesis)
Thesis Research 1

Year Three

Fall Semester

Adv.Land.Arch.Design 3
Thesis Research 2
(Elective - Thesis)
Landscape Construction

Spring Semester

Thesis
(Elective - Ecology)
Architecture (Elective)
Landscape Architecture Practice

Course Descriptions

Design Studios

LAA 4244 Introduction to Urban Design (3) Introduction to and survey of historical and contemporary theories, applications, and examples of successful urban designs.

LAA 6652 Design Studio 1 (6) Introduction to the planning and design of outdoor spaces with emphases on design process, graphic communication, and three-dimensional modeling skills. An introduction to landscape architectural terminology and landscape design methodology.

LAA 6653 Design Studio 2 (6) [Prereq. LAA 6653.] Basic design principles and their application to outdoor spaces with emphasis on human scale and site-specific data inventory and analysis. Human spatial needs and preferences linked to their environmental impacts within natural systems and cultural constructs.

LAA 6654 Advanced Landscape Architecture Design 1 (6) Site planning and design of complex landscape architectural programs. Program development, site inventory and analysis, conceptual design, and detail design development of landscapes intended to serve multiple users.

LAA 6655 Advanced Landscape Architecture Design 2 (6) Design and planning of rural, suburban, and urban landscapes with emphases on community participation, contextual analysis, conflict resolution among multiple users, and sustainable development strategies. Interaction with related design professionals and community leaders.

LAA 6656 Advanced Landscape Architecture Design 3 (6) Land planning and design at a regional scale including appropriate applications of computer technology in the accessing and interpretation of data relative to ecological units. Comprehensive land-use planning and environmental planning related to community design and preservation.

Professional Courses

LAA 6215 Landscape Architecture Practice (3) Survey of ethical, legal, and professional practices necessary to ensure the health, safety, and welfare of the public. A critical review of contracts, client relations, firms, organizations, and professional insurance.

LAA 6371 Landscape Computer Graphics (3) Expansion of presentation graphics and construction documentation utilizing computer software. Introduction and practice in computer-aided design and photo imaging applications currently in use by landscape architects in professional offices and public agencies.

LAA 6423 Site Engineering (3) Theory, principles, and practices of shaping the physical environment through the manipulation of earthwork including the opportunities and constraints associated with surface and subsurface drainage. Land survey techniques, base map preparation, topographic contour mapping, and earthwork calculations as they relate to contemporary landscape architectural practice.

LAA 6424 Site Implementation (3) Techniques and applications of materials and methods of construction in landscape settings including paving, walls, garden structures, irrigation, outdoor lighting, and signage. Emphasis on construction details, specifications, and computer-aided drafting.

LAA 6525 Landscape Construction (3) The preparation of a set of landscape construction drawings for a design assigned by the course instructor including layout, grading, irrigation, utilities, planting, and site structures with appropriate specifications and cost estimates.

LAA 6540 Landscape Plants I (3) Field study including the identification and landscape uses of both native and ornamental landscape plant materials. Ecological factors, botanical character, and maintenance concerns are addressed to facilitate proper plant selection and usage.

LAA 6515 Landscape Plants II (3) [Prereq. LAA 6540] Design applications and biological problem-solving through the use of landscape plant materials. Emphasis on the techniques and methods of plant usage in outdoor settings to accomplish both functional and aesthetic living environments.

LAA 6545 Florida Natural Communities (3) Study and investigation into the role of native and indigenous species in the evaluation and planning of land use alternatives, sustainable landscapes, and ecologically sound design within various Florida ecological systems.

LAA 6715 Modern Landscape Architecture History (3) A survey and critical review of professional landscape architectural works and significant individuals who influenced the contemporary practice of landscape architecture. Emphases on the seminal works of late nineteenth century and early twentieth century landscape architects that defined the role of the profession, early academics, and theorists that established the boundaries of the discipline, and significant contemporary writers and practitioners in the field.

LAA 6716 Landscape Architecture History (3) A critical review of concepts of nature, land planning, and landscape design in the Western Hemisphere from pre-history through Ancient Egypt, Greece, Roman and Medieval Europe with a focus on the Renaissance gardens of Italy, France, and England. Colonial American attitudes and practices toward the landscape and urban development. Relationship of societal, cultural, technological, and metaphysical factors to landscape preservation and modification within historical periods.

Thesis Courses

LAA 6910 Thesis Research 1 (3) Theories and practical applications of research in landscape architecture and related disciplines including investigative techniques and tools, research program development, research reporting, and writing. Emphasis is on critical inquiry and its relationship to the generation of new knowledge within professional disciplines.

LAA 6912 Thesis Research 2 (3) A continuation of 6910. Compilation of thesis bibliography, thesis proposal, thesis committee formulation, collection of initial thesis data, and its documentation. Identification of case

studies and/or thesis application sites where applicable.

LAA 6971 Thesis (6) Independent research and documentation based upon work accomplished in Thesis Research. Intermediate reviews, committee meetings, and interim product due dates scheduled by thesis candidate with guidance from committee chair.

Master of Science in Architecture

Program Description

The Master of Science in Architecture (M.S. Arch.) is for those who wish to acquire special skills and knowledge at the master's level. Due to the short duration of the curriculum path, students should have a well-formulated thesis topic or educational agenda before entering the M.S.Arch. program. The Master of Science degree is not a professional degree and does not qualify a recipient of this degree for licensure.

Students with degrees in fields other than architecture may be admitted to the M.S.Arch. program. This may require additional course work at the undergraduate level be completed together with the normal graduate course curriculum for the degree.

The degree requires 36 credits of course work and the completion of a thesis. This program is planned as a three-semester sequence. In the past, students have focused on the following areas:

- Urban design and urban architecture
- Facilities programming and analysis
- Architectural design and theory
- Historic preservation

Typical profiles of candidates for this degree program include but are not limited to:

- Graduates who possess a professional Bachelor of Architecture degree.
- Graduates of a non-professional Bachelor of Science in Architectural Studies degree who do not wish to gain licensure.
- Graduates who possess a bachelor's degree in an allied field.

Curriculum

Required courses for the Master of Science in Architecture Studies are:

- ARC 6974 Thesis Planning (3 credits)
- ARC 6910 Thesis 1 (6 credits)
- ARC 6971 Thesis 2 (6 credits)
- ARC 6390 Models of Inquiry (3 credits)
- ARC 6391 Theories of Intervention (3 credits)
- Thesis-related electives (9 credits)
- Open electives (6 credits)

The required professional coursework for the Master of Architecture is composed of 10 courses totaling 40 credits. This is in addition to the 15 elective credits. The final course list is determined by the student, the thesis chair, and the program director.

SCHOOL OF BUSINESS AND INDUSTRY

The Professional Master of Business Administration

(MBA) & The One-Year MBA

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.

The Leadership Program

The Leadership 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 provide student with (1) liberal education which included courses in the area 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

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.

Faculty

SBI Administration

Dean School of Business and Industry: Lydia McKinley-Floyd

Associate Dean: Charles Evans

Chief Operations Officer: Alex Moore

Director, Division of Internship and Career Development: Doris Corbett

Area Coordinator, Dept. of Accounting and Finance: Ira Bates

Area Coordinator, Dept. of Marketing and Management: Daaim Shabazz

Area Coordinator, Dept. of Information Systems and Operations

Management: Paul Nkansah

Area Coordinator, Dept. of Professional Development: Vera Harper

Director, Center for Academic Support Services: Michael Campbell

Graduate Academic and Professional Faculty

| | |
|-------------------------|-----------------------|
| Ashley, Clyde | Nwabuzor, Augustine |
| Bates, Ira | Nwakanma, Hudson |
| Benjamin, Colin | Osagie, Johnston |
| Bowers, Jennifer | Ravenell, William |
| Bradford, Amos | Reeder, Craig |
| Clark, George | Ridley, A. Denis |
| Davis, Bobby | Selby, Daniel |
| Drumming, Sandra | Shabazz, Daaim |
| Etienne, Eisenhower | Shariat, Mohammad |
| Evans, Charles | Shrestha, Nanda |
| Finley-Hervey, Joycelyn | Smith, Wilbur |
| Friday-Stroud, Shawnta | Suarez-Brown, Tiki |
| Harper, Vera | Sutterfield, J. Scott |
| Hightower, Roscoe | Swirsky, Steven |
| Holloman, Derek | Sykes, Viceola |
| Holmes, Andre | Thompkins, Abigail |
| Islam, Mahzar | Thompson, Forest |
| Mehta, Anju | Tidwell-Lewis, Angel |
| Mehta, Nikhil | Wang, Guan |
| Motley, Carol | Wilson, Richard |
| Murphy, Angela | Wright, Richard |
| Ngassam, Christopher | |
| Nkansah, Paul | |

Admission Requirements

The School of Business and Industry is a professional school with limited enrollment and selective admissions.

Professional MBA Program

Unconditional Admission for First-Time-In-College Students

1. Applicants who have scored a minimum of 1200 on the SAT or 27 on the ACT and who have an overall 3.0 GPA or better in a college preparatory high school curriculum with "B" averages or better in each of the following subject areas: English, Math, and Science.
2. Applicants who have scored a minimum of 1010 on the SAT or 21 on the ACT and who have an overall 3.5 GPA or better in a college preparatory high school curriculum with "B" averages or better in each of the following subject areas: English, Math, and Science.
3. Applicants that finish in the top 10% of their high school graduating class with a minimum 1010 SAT or 21 ACT score.

Admissions to Graduate Status within the Professional MBA Program

Each applicant must:

1. have been admitted to the Professional MBA Program,
2. have completed undergraduate pre-prerequisite courses with a GPA of 3.0 or greater,
3. have successfully registered for and complete two SBI approved residencies/internships,

4. have submitted an application for graduate status with the Graduate School of Florida A&M University, and
5. have submitted 2 recommendation forms from SBI faculty members

Transfers

In order for students to transfer from the Bachelor's Program to the Professional MBA Program, students must have completed a minimum 30 hours of course work and a maximum of 60 hours, and have attained a 3.0 overall GPA. In addition, students must have earned a 3.0 average or better in the following courses:

| | |
|-------------------------|-----------------------------------------------------------------------------|
| ENC 1101 | Freshman Communication Skills I |
| ENC 1102 | Freshman Communication Skills II |
| MAD 2120 & MAC 2233 | Finite Math & Business Calculus |
| 4 hour Science Elective | Physics |
| 4 hour Science Elective | Physics |
| ACG 2021 or ACG 2022 | Financial Accounting Principles/Financial Accounting |
| MAN 2812 or CGS 1160 | Introduction to Business Systems/Introduction to Microcomputer Applications |

For students transferring from another university or school within FAMU to the Professional MBA Program, students must meet the FTIC admissions requirements for the Professional MBA Program, and have earned a 3.0 average or better in the following groups of courses (English, Math, Science, Accounting, & Intro to Business Systems):

| | |
|-------------------------|-------------------------------------------------------|
| ENC 1101 | Freshman Communication Skills I |
| ENC 1102 | Freshman Communication Skills II |
| MAD 2120 & MAC 2233 | Finite Math & Business Calculus |
| 4 hour Science Elective | Physics |
| 4 hour Science Elective | Physics |
| ACG 2021 or ACG 2022 | Financial Accounting Principles/ Financial Accounting |
| MAN 2812 | Introduction to Business Systems |

NOTE: Students that have taken Business Courses must have a B or better average in all Business Courses attempted.

Program Flexibility

Although the Professional MBA is a broad, general degree, concentration may be acquired by taking electives in an area of specialty consistent with student's professional interests. 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. Students will be provided with the sequence of their residencies during the freshman year to allow students to plan ahead for course availability and make certain that professional development courses are taken in the correct sequence. Students must complete two residencies/internships prior to 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 advisers. 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

| | |
|------------------------------------------------------------|----------------|
| First Year | Semester Hours |
| ENC 1101, 1102 Freshman Communication Skills | .6 |
| GEB 1440, 1441 Essential Relationships I, II | .6 |
| MAN 2812 Introduction to Business Systems | .3 |
| Humanities Electives (from approved listing) | .6 |
| Social Sciences Elective (from approved listing) | .3 |
| GEB 1091, 1092 Introductory Professional Development I, II | .4 |
| ACG 2022 Financial Accounting | .3 |
| <u>Math Option (see below)</u> | <u>.6</u> |
| | 34 |

| | |
|------------------------------------------------------------------|-----------|
| Second Year | |
| AMH 2091 Introduction to African-American History | .3 |
| QMB 3600, 3602 Quantitative Methods for Business Decisions I, II | .6 |
| ACG 3301 Managerial Accounting | .3 |
| ACG 3102 Financial Reporting & Analysis I | .3 |
| PHY 2053, 2054 College Physics I, II and | |
| PHY 2048, 2049 Physics Lab I, II | .8 |
| MAN 3532 Management Engineering I | .3 |
| WOH 1012 World History | .3 |
| MKA 3702 Market Applications of Economic Theory | .3 |
| GEB 2931, 2932 Professional Development I, II | .4 |
| <u>MAN 4941 Management Residency I</u> | <u>.1</u> |
| | 37 |

| | |
|-------------------------------------------------------------------|-----------|
| Third Year | |
| MAN 3027 Organizational Management | .3 |
| MAN 4653 Global Business | .3 |
| ACG 3112 Financial Reporting & Analysis II | .3 |
| FIN 4424 Problems in Financial Management | .3 |
| ACG 4642 Business Assurance and Attestation | .3 |
| Free Elective | .3 |
| MAN 3533 Management Engineering II | .3 |
| PEL Business Sport | .2 |
| MAR 4803 Marketing Management | .3 |
| Business Elective | .3 |
| MAN 4942 Residency Management II | .1 |
| <u>GEB 3931, 3932 Intermediate Professional Development I, II</u> | <u>.4</u> |
| | 34 |

| | |
|--------------------------------------------------------|-----------|
| Fourth Year | |
| MAN 5205 Organizational Theory and Behavior | .3 |
| MAN 5000 World Business Cultures | .3 |
| MAN 5615 World Resources | .3 |
| FIN 5515 Investment Analysis & Portfolio Management or | |
| FIN 5324 Commercial Banking Administration | .3 |
| BUL 5321 Legal Issues and Environment | .3 |
| Graduate Business Electives | .6 |
| MAN 5940 MBA Residency | .1 |
| GEB 5933 or 4931 Graduate Seminar in Leadership | .2 |
| <u>GEB 5931 Senior Seminar in Leadership</u> | <u>.2</u> |

Fifth Year

TRA 5722, 5723 Global Logistics I, II6
 MAN 5721 Business Policy & Strategic Management3
 FIN 5406 Theory of Finance3
 MAN 5838 Systems Theory and Design3
 GEB 5932 Graduate Seminar in Leadership2
 GraduateBusiness Electives9

26

Math Option

- Option #1 MAC 1105 and MAC 2233
 Option #2 MAD 2120 and MAC 2233 or MAC 2311
 Option #3 MAC 2311 and MAC 2312
 *MAC 2311 can substitute for MAC 2233

The One-Year (Three Semesters) Master of Business Administration (MBA)

Introduction

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. Concentration allow students enrolled in this program to customize their education to fit their career goals.

Admission Requirements

The program is intended for full-time students; students may enter the program at any semester. To qualify for admission to the One-Year (three semester) MBA program, the application must, at a minimum, satisfy the following requirements:

1. Baccalaureate degree from an accredited college or university.
2. Achieve or exceed the score of 1100 on a formula of 200 times undergraduate cumulative GPA plus GMAT score.
3. Evidence of maturity and leadership.

To apply, a prospective student should take the following steps:

1. Apply to take the GMAT and request the results be sent to the School of Business and Industry at Florida A&M University.
2. Submit completed application and three letters of recommendation to the Office of Admission, Florida A&M University, Tallahassee, FL 32307-5200.

SBI will only be able to accommodate a limited number of applicants and as a result, meeting of the minimum admission requirements will not guarantee acceptance.

Applications and SBI recommendation forms may be secured by contacting:

School of Business and Industry
 Florida A&M University
 Tallahassee, Florida 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 3600/463 International (Global) Business
 FIN 3403 Corporation Finance
 ECO 2013 Principles of Economics I
 ECO 2023 Principles of Economics II
 MAN 2812 Management Information Systems
 STA 2023 Introduction to Probability and Statistics or QMB 3600 Quantitative Methods I
 QMB 2102 Introduction to Quantitative Methods
 MAN 4503 Production Management (waived for students with a bachelor degree in Engineering)

Requirements: One-Year (Three Semesters) MBA Program

Forty-four of 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 unless a need arises to take undergraduate courses concurrent with the completion of graduate credit hours. 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 | Semester Hours |
|-------------------------------------------------------|----------------|
| MAN 5205 Organization Theory & Behavior | 3 |
| MAR 5805 Marketing Management Strategy | 3 |
| ACG 5175 Financial Statement Analysis | 3 |
| MAN 5838 Systems Theory & Design | 3 |
| GEB 5931 MBA Professional Development | 2 |
| | 14 |
| Semester II | |
| FIN 55405 Corporate Financial Management | 3 |
| TRA 5722 Global Logistics | 3 |
| QMB 5555 Managerial Research Methods | 3 |
| ACG 5655 Seminar in Advance Auditing | 3 |
| Graduate Elective | 3 |
| | 15 |
| SUMMER MBA INTERNSHIP: OPTIONAL | |
| Semester III | |
| Graduate Elective | 3 |
| Graduate Elective | 3 |
| Graduate Elective | 3 |
| Graduate Elective | 3 |
| MAN 5721 Business Policy - Strategic Management | 3 |
| | 15 |
| Total Hours | 44 |

1. Each course will have relevant international and ethics components as it relates to the discipline.
2. The Business Policy - Strategic Management course will be taken the semester the student is graduating.
3. Courses are offered during day and evening hours, 1 or 2 days a week to accommodate working professionals.
4. With the electives, students are able to choose a management, marketing, finance, accounting, or supply chain management (if approved) concentration.
5. Students are encouraged to take advantage of SBI's internship opportunities.

MBA Program Courses

ACG 2022 Financial Accounting (3) Study of fundamental principles, concepts, and functions of external reporting from a user's perspective.

ACG 2022L Financial Accounting Lab To review and complete assignments and receive individual attention on select topics.

ACG 3102 Financial Reporting & Analysis I (3) Prerequisite: ACG 2022. This course focuses on the study of the principles and concepts of financial accounting and the development of the skills in how to use financial information for decision making purposes.

ACG 3112 Financial Reporting & Analysis II (3) Prerequisite: ACG 3102 (Continuation of ACG 3102). Emphasis is placed on understanding business transactions as well as the accounting and reporting for these transactions.

ACG 3301 Managerial Accounting (3) Prerequisite: ACG 2022. This course provides an introduction to cost management systems and techniques that firms use to measure and manage performance.

ACG 3301L Managerial Accounting Lab To review and complete assignments and receive individual attention on select topics.

ACG 4642 Business Assurance and Attestation (3) Prerequisite: ACG 3102. 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 4901 Directed Individual Study (Varies 1 to 6) Prerequisite: Permission of Area Coordinator 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.

FIN 4424 Problems in Financial Management (3) Focuses on the role corporate financial managers assist in shareholder wealth maximization. Enhances the understanding of material covered in Corporation Finance and Financial Policy & Strategy through the application of analytical methods, cases and the effective use of information technology in a contemporary financial environment.

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 Financial Internship I Prerequisite: Permission of Internship Coordinator: To gain work experience with a business entity.

FIN 4942 Financial Internship II Prerequisite: Permission of Internship Coordinator: To gain work experience with a business entity.

GEB 1091, 1092 (1931, 1932) Introduction to Professional Development I, II (2, 2) 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, 1441 Essential Relationships I, II (3,3) SBI majors only. Introduction to Accelerated Learning Systems and relationships essential to economic theory and basic business concepts.

GEB 1931, 1932 Introduction to Professional Development I, II (2,2) SBI majors only. Structured activities and workshops designed to develop both strong personal qualities and skills.

GEB 2931, 2932 Intermediate Professional Development I, II (2,2) Prereq.: SBI majors only and GEB 1092. Structured activities and workshops designed to develop both strong personal qualities and skills.

GEB 3931, 3932 Advanced Professional Development I, II (2,2) Prereq.: SBI majors only and GEB 2932. Structured activities and work-

shops designed to develop strong personal qualities and skills required to achieve institutional objectives.

GEB 4931, 4932 Senior Seminar and Leadership I, II (2, 2) Prereq. SBI majors only and GEB 3932 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.

ISM 5304 Information Systems in Management (3)

ISM 5506 Elect Comm. Global Environment (3)

ISM 5515 Database Management Systems Global (3)

MAN 2812 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 3027 Organization Management (3) Prereq: Junior Standing This course will introduce the entire range of issues involved in organizational management. Managing for a competitive advantage, managing for directly and globalization, managing for information technology, managing for ethical standards, and managing for your own life goals.

MAN 3531 Fundamental Engineering Concepts (3) Introduces students to the basic tools, concepts, techniques and technologies of engineering. Students will learn problem-solving techniques used by engineering and technology-driven organizations.

MAN 3532 Management Engineering I (3) Prereq.: MAN 3531 and MAC 2311. 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) Prereq.: 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 4653 Global Business (3) Prereq: Junior Standing A study of the international, economic and political environment in which trade, investment, and management decisions take place.

MAR 4803 Marketing Management (3) Identification of market opportunities, formation of marketing programs and the implementation of competitive strategies.

MAN 4941 Management Residency I (variable) Prereq: 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 Residency II (variable) Prereq: 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.

MKA 3702 Market Application of Economic Theories (3) Prereq: QMB 3600. Provides a basic understanding of processes that define and affect different markets in a global economy with emphasizes on the essential relationships of economics.

QMB 3600 Quantitative Methods for Business Decisions I (3) Prereq: MAC 2311 or MAC 2233. 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) Prereq: QMB 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.

ACG 5175 Financial Statement Analysis (3) Prerequisite: ACG 3111 or ACG 3112 and Graduate Standing. Designed to develop a student ability to read, interpret, and evaluate external financial accounting reports of business entities.

ACG 5255 Global Accounting (3) Prerequisite: 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: ACG

2071 or ACG 3301 and graduate standing. Study of advanced concepts and method of cost management that firms use to measure and control operating costs and 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: ACG 4642 and graduate standing. This course focuses on the study of current advanced topics in auditing.

ACG 5875 Developing Accounting Thoughts (3) Prerequisite: 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: Permission of Area Coordinator, supervising professor and Graduate standing. Study in accounting with appropriate supervision.

BUL 5321 Legal Issues & Environments (3) Prerequisite: 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: 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: 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: 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: 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: 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 5425C Cases in Corporate Finance (3) Prerequisite: 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: 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: 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: 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 Direct Independent Study Graduate Finance (Varies) Prerequisite: Permission of the Director of Academic Programs and the supervising professor. Independent study in finance with appropriate supervision.

FIN 5930 Special Topics in Finance (3) Prerequisite: Permission of Area Coordinator, supervising professor and Graduate standing. Study in finance with appropriate supervision.

GEB 5931, 5932 Graduate Professional Development I, II (2,2) Prereq: GEB 5933 or 5934, SBI majors only. Continued leadership skills development and applications in simulated business environments

GEB 5933, 5934 Graduate Leadership Seminar I, II (2, 2) Prereq. GEB 3932, 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.

MAN 5000 World Business Cultures (3) Prereq.: Graduate Status and 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 & relationships in the context of global business. Also covered are cultural values and norms; cultural diffusion, change & continuity; cultural patterns, processes & perspectives; and cultural convergence and conflicts in the global economy.

MAN 5126 Business Behaviors and Relationships (3) Prereq.: Graduate Status and MAN 5205 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 5205 Organizational Theory and Behavior (3) Prereq.: Graduate Status and MAN 3027. 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) Prereq.: Graduate Status and MAN 5205 This encompasses goal setting, and strategy in distributive and integrative bargaining situations. The course includes experiential 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 & Operations Management (3) Prereq.: QMB 3602; MAN 3533 Examination and application of analytical models in the design and analysis of production and operations systems.

MAN 5549 Total Quality Management (3) Prereq.: QMB 3602; MAN 3533 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) Prereq.: Graduate Status and 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) Prereq.: Graduate Status and MAN 5205 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 addition to including ethics, this course also includes topics such as corporate social responsibility, stakeholder analysis, and the following 10 external factors: cultural, social, demographic, economic, governmental, political, legal, competitive, environmental, and technological.

MAN 5721 Business Policy and Strategic Management (3) Prereq.: MAN 5205, BUL 5321, ACG 3112, FIN 5406, and a Graduate 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 Global Markets (3) Graduate Status This course enables student 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 5835 System Theory & Dis (3)

MAN 5838 Systems Theory and Design (3) Prereq.: MAN 2812. In depth study of the processes associated with the systems development cycle including engineering tools methodologies. Application of business skills through project engineering.

MAN 5905 Directed Independent Study (variable) Prereq.: 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) Prereq.: 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) Prereq.: 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 Applications (3) Prereq.: Graduate Standing and MAR 4803 This course will examine 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) Prereq.: Graduate Standing and MAR 4803 This course will examine the field of marketing communications. It will cover 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 focus 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) Prereq.: 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) Prereq.: MAR 4803 This course prepares students 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) Prereq.: MAR 4803 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) Prereq.: MAR 4803 This course will introduce student 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) Prereq.: 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) Prereq.: 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.

TAX 5105 Corporate Tax Seminar (3) Prerequisite: TAX 4101 and graduate standing. Study of corporate tax issues via research case analysis.

TAX 5405 Estate and Gift Tax (3) Prerequisite: TAX 4101 and Graduate Standing. The study of estate and gift tax issues via research case

analysis.

TAX 5505 International Tax (3) Prerequisite: TAX 4101 and graduate standing. Study of international tax issues via research case analysis.

TRA 5722 Global Logistics I (3) Prereq.: MAN 3533, QMB 3602, FIN 4424, ACG 3301. This course will introduce 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 Global Logistics II (3) Prereq.: 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.

MASTER OF SCIENCE IN NURSING

Graduate Program Objectives:

1. Synthesize knowledge from the sciences, humanities and nursing to support advanced nursing practice and role development.
2. Manage, coordinate, and promote health care in culturally and ethnically diverse populations.
3. Collaborate in the analysis of issues related to health policy and health economics.
4. Participate and utilize research as a foundation for advanced nursing practice.
5. Provide consultation to health care providers and consumers.
6. Plan, implement and evaluate educational activities using teaching-learning theories.
7. Demonstrate accountability for continual professional development.

Faculty

Professors: Ballard-Ferguson, Doris E.; Earp, Jaibun, K.

Associate Professors: Fennal, Mildred; Lawson, Delores; Marshall, Janet; Norman, Ruena W.

Assistant Professor: Baker, Janelle

The FAMU School of Nursing offers the Master of Science degree with and emphasis of Adult/Gerontological and Women's Health Nurse Practitioner preparation. The goals of the graduate program are threefold: (1) prepare qualified professional nurses for advanced practice roles in a specialized area; (2) prepare graduates to use the research process to improve nursing practice and contribute to Nursing's body of knowledge and (3) provide an education base for graduates to pursue further educational and professional development.

Adult/Gerontological Nurse Practitioner

The FAMU School of Nursing offers the Master of Science in Nursing Program with an emphasis in Adult / Gerontological Nurse Practitioner preparation. The master's program prepares nurses for advanced practice in primary health care with young, middle and older adults in acute, ambulatory, long-term, and community settings. The Adult/Gerontological Nurse Practitioner Program builds upon the base of the FAMU School of Nursing's Baccalaureate Program and graduate cores courses of health policy, nursing theory, nursing research and role development. The curriculum consists of 42 hours of study.

Courses in the Adult/Gerontological Nurse Practitioner Program include Advanced Pathophysiology, Advanced Pharmacology, Advanced Health Assessment, Psychosocial Aspects of Aging and Adult/Gerontological Management. Communication, critical thinking and research are integrated in course and clinical interactions.

The Adult/Gerontological Nurse Practitioner prevents and minimizes disabilities, promotes functional abilities and promotes death with dignity. In collaboration with other professionals, the Adult/Gerontological Nurse Practitioner uses, evaluates, and implements

research that contributes to knowledge that advances wellness in young, middle age, and older adults.

The graduate of this program is eligible to take the American Nurses Credentialing Center's national certification examination for both Adult and Gerontological Nurse Practitioner and apply for licensure as an Advanced Registered Nurse Practitioner in the state of Florida. **Competencies of the graduate of the Adult/Gerontological Nurse Practitioner include the following:** (as modified from the National Organization of Nurse Practitioner Faculty (NONPF) and Association of American Colleges of Nursing (AACN), 2002.

- * Function as primary care providers in the clinical management of young, middle, and older adults in a variety of settings: clinics, private offices, home care, long-term care, and community based clinics.
- * Conduct health, psychosocial and family histories.
- * Perform complete, episodic and functional examinations.
- * Order appropriate diagnostic tests.
- * Discriminate between normal aging and pathological findings on the history, physical, and diagnostic tests.
- * Regulate and adjust medications and treatments.
- * Establish coordinated, comprehensive, cost effective plans of care based on cultural/cohort preferences and needs of adults and older adults.
- * Monitor, record and evaluate health outcomes.
- * Initiate regimens for health maintenance and health promotion in a variety of settings.
- * Utilize research methods and findings to enhance the quality of life for young, middle and older adults.
- * Provide basic and advanced cardiac life support.
- * Function independently and interdependently in the coordination of and continuity of health care services to young, middle and older adults.
- * Adhere to professional ethical standards in the clinical management of young, middle and older adults.
- * Implement a conceptual framework for practice in the clinical management of clients.
- * Demonstrate critical thinking in peer reviews for professional development.

Women's Health Nurse Practitioner

The FAMU School of Nursing offers the Master of Science in Nursing Program with an emphasis in Women's Health Nurse Practitioner preparation. The Women's Health Nurse Practitioner master's specialty prepares graduates to provide primary care services to women throughout their lifespan. The program focuses on women's health care that is personalized within a social, cultural and community context. This specialty incorporates evidenced-based practice in health promotion, health maintenance, treatment and prevention of women's health problems.

The graduate of this specialty is eligible to take the National Commission for Certifying Agencies (NCAA) certification examination as a Women's Health Nurse Practitioner and to apply for licensure as an Advanced Registered Nurse Practitioner in the State of Florida. Competencies of the graduate of the Women's Health Nurse Practitioner include the following: (as modified from the National Organization of Nurse Practitioner Faculty (NONPF) and Association of American Colleges of Nursing (AACN), 2002.

- * Establish coordinated, comprehensive, cost effective plans of care based on cultural/cohort preferences and needs of women.
- * Monitor, record and evaluate health outcomes.
- * Initiate regimens for health maintenance and health promotion in a variety of settings.
- * Utilize research methods and findings to enhance the quality of life for women.
- * Function independently and interdependently in the coordination of and continuity of health care services to women.
- * Adhere to professional ethical standards in the clinical management of women.
- * Implement a conceptual framework for practice in the clinical management of clients.
- * Demonstrate critical thinking in peer reviews for professional

development.

- * Obtain and document relevant health history, including a comprehensive obstetric and gynecologic history, with emphasis on gender-based differences.
- * Perform and document complete system, or symptom-directed physical examinations of women, including obstetric and gynecologic conditions/needs that include, but are not limited to, pregnancy, benign and malignant gynecologic conditions, contraception, sexually transmitted infections, infertility, peri-menopause/menopause/post menopause and other gender-specific conditions.
- * Assess for maternal and fetal well-being, high-risk pregnancies, depression, and pregnancy/postpartum complications.
- * Assess for disease risk factors specific to women.
- * Diagnose common non-gynecologic health problems and other deviations from normal and provide management, education, or referral when appropriate.
- * Identify obstetrical and gynecologic deviations from normal, formulate a diagnosis, collaborate, and/or refer as necessary.
- * Perform and interpret screening and diagnostic procedures, including, but not limited to, pap tests, microscopy, post coital tests, and sexually transmitted infection tests.
- * Perform complete, episodic and functional examinations.
- * Order screening and diagnostic procedures and interpret test results, including, but not limited to, ultrasound, mammography, endometrial biopsies, colposcopy, triple screen, and fetal assessment tests, as well as age appropriate primary care screens.
- * Diagnose and treat acute and chronic conditions with an emphasis on reproductive/gynecologic health, including, but not limited to, pregnancy, sexually transmitted infections, infertility, benign and malignant gynecologic conditions, perimenopause, menopause, post-menopause, and other gender specific conditions.
- * Provide prenatal and postnatal care including, but not limited to, maternal/fetal health, parent/infant relationships, lactation, and parenting skills.
- * Provide management and education for women and men in need of family planning and fertility control.
- * Manage the treatment of sexually transmitted infections for women and their partners.
- * Manage and/or refer for primary care conditions, including, but not limited to, headaches, hypertension, urinary tract infections, upper respiratory infections, and common dermatological conditions. Perform primary care procedures, including but not limited to, pap smears, microscopy, post-coital tests, intrauterine device (IUD) insertion, and endometrial biopsies.
- * Prescribe therapies, including medications, considering pregnancy, lactation, sociocultural background, and financial resources.
- * Incorporate cultural preferences, health beliefs and behaviors, and traditional practices into the management plan.
- * Develop patient-appropriate educational materials that address the language and cultural beliefs of the patient.
- * Assess culturally appropriate resources to deliver care to patients from other cultures.
- * Assist patients to access quality care within the dominant culture.
- * Assist patients and families to meet their spiritual needs in the context of health and illness experiences, including referral for pastoral services.
- * Assess the influence of client's spirituality on her health care behaviors and practices.
- * Incorporate client's spiritual beliefs in the plan of care appropriately.
- * Respect wishes of patients and families regarding expression of spiritual beliefs.

Accreditation:

The Master's Program is accredited by the National League For Nursing Accrediting Commission, 61 Broadway, New York, New York, 10006, (212) 363 -5555 and approved by the Florida Board of Nursing.

Admission Requirements:

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.
2. Evidence of current RN licensure in the State of Florida.
3. Undergraduate Grade Point Average of 3.0 or above in all work attempted in the last 60 hours of the baccalaureate degree or
4. Minimum score of 1000 on the Quantitative-Verbal sections of the Graduate Record Examination.
5. Undergraduate course credit for basic statistics, health assessment and computer applications.
6. One year of documented nursing practice within the past five years prior to the first clinical course.
7. Evidence of professional nurse practitioner liability insurance for students.
8. Current CPR certification.
9. Documentation of current medical history, physical examination, and immunization status, including MMR, varicella, Hepatitis B vaccine and tuberculosis skin test or chest x-ray.
10. Three professional references (one employment and two academic).
11. A statement of professional goals.
12. Personal interview.
13. Foreign applicants must have obtained a score of at least 550 on the Test of English as a Foreign Language (TOEFL).

Conditional Admission:

Individuals who do not meet the GPA or GRE admission requirement can be admitted as a special student. A special student is limited to taking up to 12 graduate hours before they must be fully admitted into the program. To be fully admitted to the graduate school the applicant must:

- a. have a minimum of 2.5 GPA on the last 60 hours of baccalaureate degree;
- b. attain 3.0 GPA on the first 12 graduate hours taken;
- c. attain 1000 on the GRE or
- d. be admitted under the FAMU Board of Trustees' Policy of 10% Exception

Admission Process:

To apply for admission, applicants must submit a completed application to the Florida A&M University Admissions Office. The application must include:

1. Application for admission;
2. Official transcript of all undergraduate and graduate work sent directly from the college or university;
3. Graduate Record Examination scores. Information regarding this examination can be obtained from the Graduate School;
4. Verification of current license;
5. Current CPR Certification;
6. Documentation of current medical history, physical examination, and immunization status, including MMR, Varicella, Hepatitis B Vaccine and Tuberculosis skin test or chest x-ray;
7. Three professional references (one employment and two academic); and
8. A statement of professional goals.

Curriculum:

The curriculum leading to the Master of Science in Nursing (MSN) degree can be completed through a full-time or part-time plan of study. Full-time requires a minimum of 9 semester hours per semester. The number of semester hours is 42. Under 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.

Core Courses (28 semester hours)

| | | |
|-----------------|--------------------------------------|---|
| NGR 6740 | Professional Role Development | 2 |
| NGR 5141 | Advanced Pathophysiology | 3 |
| NGR 5110 | Theories in Nursing | 3 |
| NGR 5192 | Advanced Pharmacology | 3 |
| NGR 6190 | Health Policy and Nursing | 2 |
| NGR 5810 | Research Methodology | 3 |
| NGR 5001C | Advanced Health Assessment Theory | 2 |
| NGR 5001L | Advanced Health Assessment Practicum | 1 |
| NGR 6971 & 6972 | Thesis I & II | 6 |
| Elective | | 3 |

Adult /Gerontological Nurse Practitioner (14 semester hours)

| | | |
|-----------|----------------------------------------|---|
| NGR 5207C | Adult/Gerontological Mgt. Theory I | 3 |
| NGR 5207L | Adult/Gerontological Mgt. Practicum I | 3 |
| NGR 5153 | Psychosocial Aspects of Aging | 2 |
| NGR 6208C | Adult/Gerontological Mgt. Theory II | 3 |
| NGR 6208L | Adult/Gerontological Mgt. Practicum II | 3 |

Women's Health Nurse Practitioner (14 semester hours)

| | | |
|-----------|--------------------------------------|---|
| NGR 5485C | Advanced Women's Health Theory I | 3 |
| NGR 5485L | Advanced Women's Health Practicum I | 3 |
| NGR 5481 | Issues in Women's Health | 2 |
| NGR 6486C | Advanced Women's Health Theory II | 3 |
| NGR 6486L | Advanced Women's Health Practicum II | 3 |

The masters' program can be completed in either four semesters of full-time study or part-time study. However, all clinical and practicum courses must be taken concurrently and in sequence. Full-time, part-time and post-master's completion plans are as follows:

Adult/Gerontological Full-time Curriculum Plan

| Fall | Credit Hours |
|----------------------------------------|--------------|
| NGR 6740 Professional Role Development | 2 |
| NGR 5110 Theories in Nursing | 3 |
| NGR 5141 Advanced Pathophysiology | 3 |
| NGR 5192 Advanced Pharmacology | 3 |
| Total | 11 |

Spring

| | |
|------------------------------------------------|-----------|
| NGR 5810 Research Methodology | 3 |
| NGR 6190 Health Policy and Nursing | 2 |
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |
| Elective | 3 |
| Total | 11 |

Fall

| | |
|-------------------------------------------------------|-----------|
| NGR 5207C Adult/Gerontological Management Theory I | 3 |
| NGR 5207L Adult/Gerontological Management Practicum I | 3 |
| NGR 5153 Psychosocial Aspects of Aging | 2 |
| NGR 6971 Thesis I | 3 |
| Total | 11 |

Spring

| | |
|--------------------------------------------------------|-----------|
| NGR 6208C Adult/Gerontological Management Theory II | 3 |
| NGR 6208L Adult/Gerontological Management Practicum II | 3 |
| NGR 6972 Thesis II | 3 |
| Total | 9 |
| Total Curriculum | 42 |

Adult/Gerontological Part-time Curriculum Plan

| Semester I (Fall) | Credit Hours |
|-----------------------------------------------------------|--------------|
| NGR 5110 Theories in Nursing | 3 |
| | |
| Semester II (Spring) | |
| NGR 5810 Research Methodology | 3 |
| | |
| Semester III (Fall) | |
| NGR 6740 Professional Role Development | 2 |
| NGR 5141 Advanced Pathophysiology | 3 |
| | |
| Semester IV (Spring) | |
| NGR 6710 Health Policy and Nursing | 2 |
| | |
| Semester V (Fall) | |
| NGR 5192 Advanced Pharmacology | 3 |
| | |
| Semester VI (Spring) | |
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |
| | |
| Semester VII (Fall) | |
| NGR 5207C Adult/Gerontology Management Theory I | 3 |
| NGR 5207L Adult/Gerontology Management Practicum I | 3 |
| NGR 5153 Psychosocial Aspects of Aging | 2 |
| NGR 6971 Thesis I | 3 |
| | |
| Semester VIII (Spring) | |
| NGR 6208C Adult/Gerontology Management Theory II | 3 |
| NGR 6208L Adult/Gerontology Management Practicum II | 3 |
| NGR 6972 Thesis II | 3 |
| Total* | 42 |

*A three-hour graduate elective may be taken any semester during the part-time study.

Post Masters Completion Curriculum Plan

**Adult/Gerontological Nurse Practitioner Program
(20 Semester hours)**

| Fall | Credit Hours |
|--------------------------------------------------------------|--------------|
| NGR 5192 Advanced Pharmacology | 3 |
| | |
| Spring | |
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |
| | |
| Fall | |
| NGR 5207C Adult/Gerontological Management Theory I | 3 |
| NGR 5207L Adult/Gerontological Management Practicum I | 3 |
| NGR 5153 Psychosocial Aspects of Aging | 2 |
| | |
| Spring | |
| NGR 6208C Adult/Gerontological Management Theory II | 3 |
| NGR 6208L Adult/Gerontological Management Practicum II | 3 |
| Total | .20 |

Women's Health Full-time Curriculum Schedule and Plan

| Fall | Credit Hours |
|----------------------------------------------|--------------|
| NGR 6740 Professional Role Development | 2 |
| NGR 5110 Theories in Nursing | 3 |
| NGR 5141 Advanced Pathophysiology | 3 |
| NGR 5192 Advanced Pharmacology | 3 |
| Total | .11 |

| Spring | Credit Hours |
|------------------------------------------------------|--------------|
| NGR 5810 Research Methodology | 3 |
| NGR 6190 Health Policy and Nursing | 2 |
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |
| Elective | 3 |
| Total | .11 |

| Fall | Credit Hours |
|-----------------------------------------------------|--------------|
| NGR 5485C Advanced Women's Health Theory I | 3 |
| NGR 5485L Advanced Women's Health Practicum I | 3 |
| NGR 5481 Women's Health Issues | 2 |
| NGR 6971 Thesis I | 3 |
| Total | .11 |

| Spring | Credit Hours |
|------------------------------------------------------|--------------|
| NGR 6486C Advanced Women's Health Theory II | 3 |
| NGR 6486L Advanced Women's Health Practicum II | 3 |
| NGR 6972 Thesis II | 3 |
| Total | .9 |
| Total Curriculum | .42 |

Women's Health Part-time Curriculum Plan

| Semester I (Fall) | Credit Hours |
|------------------------------------|--------------|
| NGR 5110 Theories in Nursing | 3 |

| Semester II (Spring) | Credit Hours |
|------------------------------------------|--------------|
| NGR 6190 Health Policy and Nursing | 2 |

| Semester III (Fall) | Credit Hours |
|----------------------------------------------|--------------|
| NGR 6740 Professional Role Development | 2 |
| NGR 5141 Advanced Pathophysiology | 3 |

| Semester IV (Spring) | Credit Hours |
|-------------------------------------|--------------|
| NGR 5810 Research Methodology | 3 |

| Semester V (Fall) | Credit Hours |
|--------------------------------------|--------------|
| NGR 5192 Advanced Pharmacology | 3 |

| Semester VI (Spring) | Credit Hours |
|------------------------------------------------------|--------------|
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |

| Semester VII (Fall) | Credit Hours |
|-----------------------------------------------------|--------------|
| NGR 5485C Advanced Women's Health Theory I | 3 |
| NGR 5485L Advanced Women's Health Practicum I | 3 |
| NGR 5481 Women's Health Issues | 2 |
| NGR 6971 Thesis I | 3 |

| Semester VIII (Spring) | Credit Hours |
|-------------------------------|--------------|
|-------------------------------|--------------|

| | |
|--------------------------------------------------------------|-----------|
| NGR 6486C Advanced Women's Health Theory II | 3 |
| NGR 6486L Advanced Women's Health Practicum II | 3 |
| NGR 6972 Thesis II | 3 |
| Elective (Can be taken at any time during program) | 3 |
| Total* | 42 |

Women's Health Post Masters Completion Curriculum Plan

**Women's Health Nurse-Practitioner Specialty
(20 Semester hours)**

| | |
|------------------------------------------|---|
| Fall Credit Hours | |
| NGR 5192 Advanced Pharmacology | 3 |

| | |
|----------------------------------------------------------|---|
| Spring | |
| NGR 5001C Advanced Health Assessment | 2 |
| NGR 5001L Advanced Health Assessment Practicum | 1 |

| | |
|-----------------------------------------------------------------|---|
| Fall | |
| NGR 5485C Advanced Women's Health Management Theory I | 3 |
| NGR 5485L Advanced Women's Health Practicum I | 3 |
| NGR 5481 Women's Health Issues | 2 |

| | |
|----------------------------------------------------------|------------|
| Spring | |
| NGR 6486C Advanced Women's Health Theory II | 3 |
| NGR 6486L Advanced Women's Health Practicum II | 3 |
| Total | .20 |

Admission Requirements for Post Masters Degree:

1. Master's Degree in Nursing from a nationally accredited school.
2. Current nursing license in Florida and CPR certification.
3. Medical documentation and liability insurance as required by the Master's program.

The following courses are required of all students in the Completion Program unless documentation is provided that reflects successful prior completion of similar course content.

| | |
|-------------------------------------|-----------|
| Advanced Physiology | 3 |
| Health Policy and Nursing | 2 |
| Role Development | .2 |
| Total | .7 |

In order for a course to be waived, it must meet the following criteria:

1. A grade of 3.0 or B must be documented on an official transcript.
2. Each course must have been completed within the 5-year period prior to admission.

Courses that are waived:

The following courses are waived for all post-Master's completion program students:

| | |
|-------------------------------|------------|
| Theories in Nursing | 3 |
| Research | 3 |
| Thesis I and II | 6 |
| Total | .12 |

Course Descriptions

NGR 5110 Theories in Nursing (3) Pre or co-requisites: Admission to Master's of Nursing Science Program or special approval. Examines the development of philosophical and theoretical bases for nursing practice. Includes the study and critique of nursing theories and theories from related disciplines. The interrelationships between nursing theory, research and practice are emphasized. This course also provides students the opportunity

to begin to develop a conceptual framework for their own practice and research.

NGR 6740 Professional Role Development (2) Pre or co-requisites: Admission to Masters of Nursing Science Program or special approval. Explores the functions and professional responsibilities of an advanced practice nurse in the role of primary care provider. Discusses theoretical bases and strategies for effective analysis, marketing, and enactment of advanced practice roles.

NGR 5141 Advanced Pathophysiology (3) Pre or co-requisites: Admission to Master's of Nursing Science Program or special approval. Examines current research in human Pathophysiology as well as exploring physiological alterations underlying disease entities and relating knowledge to interpret changes in normal function that results in symptoms indicating an illness process.

NGR 5192 Advanced Pharmacology (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141 or special approval. Introduces concepts and issues in the pharmacotherapeutic management of health and illness as well as alternative approaches to treating human suffering. Emphasis are on understanding pharmacology, the natural history of the illness for which drugs are used.

NGR 5810 Research Methodology (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141 or special approval. Focus on the process of scientific inquiry including scientific, pragmatic, and ethical issues of conducting research. Emphasis on development of research proposals for thesis.

NGR 6710 Health Policy and Nursing (2) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141 or special approval. Discusses and analyzes the evolution of health policy in the United States. Topics include the relationship between health policies, economics of health care and primary care of diverse groups. Students critically analyze national and state health policies influencing contemporary nursing practice, in general, and advanced practice nursing, in particular.

NGR 5001C Advanced Health Assessment (2) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001L. Examines current health assessment techniques and provides the student the opportunity to synthesize interviewing, health history, and physical examination skills; laboratory/diagnostic data collection and interpretation; diagnostic reasoning and clinical decision-making for advanced nursing practice in a variety of settings. This course is the first in the sequence of clinical courses, and is pre-requisite to other clinical courses.

NGR 5001L Advanced Health Assessment Practicum (1) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C. Performance and interpretation of assessment and diagnostic techniques for advanced practice nursing. This course requires ninety (90) laboratory hours. This course is the first in the sequence of clinical courses, and is pre-requisite to other clinical courses.

NGR 5207C Adult/Gerontological Management Theory I (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR5001L, NGR5207L. Acquisition of knowledge and skills for primary care and case management of acute and chronic health problems in young, middle, and older adults in a variety of settings. Theories of aging, health, health promotion, and restoration are included. Use of diagnostic procedures, pharmacological and non-pharmacological therapies, is emphasized.

NGR 5207L Adult/Gerontological Management Practicum I (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR5001L, NGR5207C. Emphasis on assessment, diagnosis, goal-setting and interventions in management of acute and chronic health problems. Application of primary care and case management services in a variety of settings in collaboration with other health care providers. 270 hours of clinical practice.

NGR 5153 Psychosocial Aspects of Aging (2) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5207L, NGR 5207C. Acquisition of expanded knowledge to enable the advanced practice nurse to manage common mental health problems and promote mental health in older adults.

NGR 6208C Adult/Gerontological Management Theory II (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5207L, NGR 5207C, NGR 5153, NGR 6208L. Expand conceptual approach to managing health problems of older adults in a variety of settings. Use clinical decision-making to determine diagnostic and therapeutic interventions to enhance functional activity and reduce unintentional illness/injury of older adults.

NGR 6972 Adult/Gerontological Management Practicum II (3) Pre-requisites Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR

5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5207L, NGR 5207C, NGR 5153, NGR 6208C. 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. 270 hours of clinical practice.

NGR 5485C Advanced Women's Health Management Theory I (3)

Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR5001L, NGR5207L. Theoretical basis for advanced practice nursing in primary care for women during prenatal, postpartum, and intrapartum and well-woman gynecological experiences. Students develop clinical decision-making skills as they integrate primary health care for women with common health conditions and problems.

NGR 5485L Advanced Women's Health Practicum I (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR5001L, NGR 5485C. Clinical application of knowledge and skills in advanced practice nursing care of women during antenatal, intrapartum and postpartum experiences. Clinical experience is gained in assessment, diagnosis, referral, and health care management of women within primary care settings. A minimum of 270 clock hours of clinical practice is required.

NGR 5481 Women's Health Issues (2) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5485L, NGR 5485C. Examines special health issues of women by analyzing the intersection of women's personal biographies with the social, cultural, and political-economic contexts that influence women's health.

NGR 6486C Advanced Women's Health Theory II (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5485L, NGR 5485C, NGR 5481, NGR 6486L. Theoretical basis for advanced practice nursing in women's health with emphasis on primary care of women throughout their life span. Focus is on health promotion, disease prevention, and the clinical management of common health problems of women.

NGR 6486L Advanced Women's Health Practicum II (3) Pre or co-requisites: NGR 5110, NGR 6740, NGR 5141, NGR 5192, NGR 5810, NGR 5001C, NGR 5001L, NGR 5485L, NGR 5485C, NGR 5481, NGR 6486C. Clinical applications of primary care management of women throughout their life span. Focus is on health promotion, risk reduction, and restorative interventions in addressing health behaviors of women. A minimum of 270 hours of clinical practice is required.

Semester of Course Offerings

| Courses | Semester Offered |
|------------------------------------------------|---------------------------------------|
| NGR 6740 Professional Role Development | Fall, First Year |
| NGR 5110 Theories in Nursing | Fall, First Year |
| NGR 5141 Advanced Pathophysiology | Fall, First Year |
| NGR 5192 Advanced Pharmacology | Fall, First Year |
| NGR 5810 Research Methodology | Spring, First Year |
| NGR 6190 Health Policy and Nursing | Spring, First Year |
| NGR 5001C Advanced Health Assessment Theory | Spring, First Year |
| NGR 5001L Advanced Health Assessment Practicum | Spring, First Year |
| NGR 5207C Adult/Gerontological Mgt. Theory I | Fall, Second Year |
| NGR 5207L Adult/Gerontological Mgt. Prac. I | Fall, Second Year |
| NGR 5153 Psychosocial Aspects of Aging | Fall, Second Year |
| NGR 6971 Thesis I | Fall, Second Year |
| NGR 6208C Adult/Gerontological Mgt. Theory II | Spring, Second Year |
| NGR 6208L Adult/Gerontological Mgt. Prac. II | Spring, Second Year |
| NGR 6972 Thesis II | Spring, Second Year |
| Elective | Fall or Summer (first or second year) |

COOPERATIVE DOCTOR OF PHILOSOPHY IN NURSING SCIENCE DEGREE (WITH THE UNIVERSITY OF FLORIDA)

In 2002, Florida A&M University joined with the University of Florida in a cooperative Doctor of Philosophy Degree in Nursing Science. Through this cooperative degree offering, students may access the University of Florida's doctoral program on the campus of Florida A&M University via an interactive audio-visual system. The Ph.D. degree will be awarded by the University of Florida.

The admission requirements for the cooperative Ph.D. in Nursing Science are:

- Master's degree in nursing from a nationally accredited program with a GPA of 3.5 on a 4.0 scale;
- Graduate Record Examination (GRE) minimum scores of 500 or above on the verbal and quantitative sections. The analytic section is required;
- Eligibility for RN licensure in Florida;
- International students or students whose native language is not English: a satisfactory score on the Test of English as a Foreign Language (TOEFL) (computer-based=213, paper-based=550, or web-based=80); or a 6 on International English Language Testing System (IELTS); or a 77 on Michigan English Language Assessment Battery (MELAB); or successful completion of the University of Florida English Language Institute program is required;
- International students or students whose native language is not English with unsatisfactory scores on the TOEFL, IELTS, or MELAB; unsuccessful completion of the UF English Language Institute Program; or an unacceptable score on the verbal part of the GRE must achieve an acceptable score on an essay administered by the Academic Written English Program at UF;
- Three professional/academic references attesting to the applicant's potential for doctoral studies;
- An essay (double-spaced, 1500 word maximum, using current APA guidelines) describing the following:
 1. Your academic expectations of the program
 2. How earning a PhD will affect your future career
 3. The experiences that you feel have best prepared you for doctoral study (e.g., clinical, educational, or leadership experiences);
 4. A clinical problem or area in which you are interested in developing your dissertation research, and how that interest aligns with a College of Nursing faculty member's research area;
 5. What the most difficult issues are that you anticipate while in the Ph.D. program, and how you plan to handle them; and
 6. A curriculum vitae.

Students may request special review by the College of Nursing Admissions Committee if they believe they are strong candidates for graduate study but do not fully meet these criteria.

Doctoral classes are offered one day per week. Students may transfer a maximum of 12 credits in a minor or area of specialization and an additional 6 credits of elective courses, from the participating consortium universities to the University of Florida in order to meet the required 62 credits for the degree.

Students in the cooperative degree program will meet UF Graduate School and College of Nursing graduation requirements including credit hours with a minimum GPA of 3.0 and a comprehensive qualifying examination, dissertation and final examination.

Further information can be obtained from the liaison for the Cooperative Ph.D. in Nursing Science, Florida A&M University School of Nursing, Tallahassee, Florida 32307, telephone (850) 599-3017, Fax (850) 599-3508.

University of Florida College of Nursing Course Descriptions

NGR 6815 Foundations of Qualitative Research in Nursing (3)
Prereq: NGR 6101 or equivalent, NGR 6801 or equivalent. Introduction to philosophical, historical and theoretical bases.

NGR 6840 Applied Statistical Analysis I (3) Prereq: NGR 6803 or equivalent and doctoral statistics orientation. Advanced procedures for data analysis and statistical inference in nursing research.

NGR 6845 Applied Statistical Analysis II (3) Prereq: NGR 6840. Analysis and application of advanced multivariate statistical procedures to develop design for individual research questions.

NGR 7115 Philosophy of Nursing Science (3) Critical examination of the meaning, method, and logical structures of science and nursing sciences. Emphasizes the logical methodological analyses of aims, methods, criteria, concepts, laws, and theories.

NGR 7124 Theory Development in Nursing (3) Prereq: NGR 7115. Analysis of existing paradigms, theories, and theoretical models, derived or tested through research in nursing.

NGR 7133 Ethical Theories and Rational Decision Making in Health Care (3) Prereq: admission to doctoral program or consent of instructor. Analyzing ethical theories and testing the applicability of theory in nursing.

NGR 7814 Field Methods for Health Related Research (3) Prereq: NGR 6815. Data collection methodologies used in qualitative nursing research.

NGR 7816 Quantitative Research Design and Measurement in Nursing (3) Prereq: NGR 6101 or equivalent, 6803 or equivalent. Evaluation of quantitative research methods and designs with attention to internal and external validity.

NGR 7979 Advanced Research (1-12) 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 appropriate for students who have been admitted to candidacy. S/U.

NGR 7980 Research for Doctoral Dissertation (1-15) S/U.

SCHOOL OF JOURNALISM & GRAPHIC COMMUNICATION

The School of Journalism & Graphic Communication offers and opportunity for students to obtain high quality training for careers in information gathering and dissemination. As the first accredited journalism program at a historically black university, SJGC is the leader in preparing students for careers in mass media industries where blacks and other racial minority groups are underrepresented.

The graduate program seeks to build upon the mission and reputation by offering two distinct programs of study: 1) professional development, and 2) academic services.

Professional Development Track (36 semester hours, non-thesis option). This course of study is designed primarily for students with liberal arts undergraduate degrees and little or no professional experience in journalism or mass communication. Students who complete this track are qualified for positions in information-gathering capacities in the public or private sector. This track features in-depth instruction and practice in journalistic writing with a focus on public affairs reporting.

Academic Services. Students in this track have undergraduate degrees in journalism or mass communication and at least two years of professional full-time communication experience. This track is designed for students interested in teaching at the secondary or postsecondary level where a master's degree is an acceptable credential or for students interested in continuing their educations at the doctoral level at another institution.

Admission Qualifications

For admission to the master's program, the applicant must meet all requirements set by Florida A&M University and its School of Graduate Studies. Applicants must have earned a bachelor's degree from an accredited institution.

For admission to the Professional Development program, the applicant should have a bachelor's degree in a discipline other than journalism or mass communication, or from an unaccredited journalism or communication program. Also, the applicant must submit three letters of recommendation, one writing sample, and evidence of potential in the field.

For admission to the Academic Services program, the student should have a bachelor's degree in journalism or mass communication. Also the applicant must submit three letters of recommendation, a portfolio, and

proof of two years of full-time professional communication work experience.

Graduate Faculty

Director: Michael Abrams, Ph.D., University of Missouri

Knight Professor: Joseph E. Ritchie II, M.A., Ohio State University

Professors: Michael Abrams, Ph.D., University of Missouri; F. Todd Bertolaet, M.F.A., Utah State University; LaRae Donnellan, Ph.D., Rensselaer Polytechnic Institute; Bettye A. Grable, Ph.D., Louisiana State University; Gerald Grow, Ph.D. Yale University; James E. Hawkins, Ph.D. (Dean), Ohio State University; Joseph Ippolito, Ph.D., Florida State University; Joseph E. Ritchie II, M.A., Ohio State University; Gale A. Workman, Ph.D., Florida State University; Dhyana Ziegler, Ph.D., Southern Illinois University-Carbondale

Associate Professor: Kenneth B. Jones, M.F.A., Florida State University

Journalism

Master of Science Core Curriculum

All graduate students will complete courses in the core curriculum and in a selected program of study.

| | |
|----------------------------------------------|----|
| MMC 5425 Research Methods in Journalism | 3 |
| JOU 5706 Media Law and Ethics | 3 |
| JOU 5341 Changing Technologies in Journalism | 3 |
| JOU 5009 Historical and Contemporary Issues | 3 |
| Comprehensive Examination | 0 |
| | 12 |

Professional Development (36 credit hours)

Newspaper Journalism

| | |
|------------------------------------|----|
| JOU 5105 Newswriting and Reporting | 3 |
| JOU 5106 Advanced Reporting | 3 |
| JOU 5182 Public Affairs Reporting | 3 |
| JOU 5501 Newsroom Management | 3 |
| JOU 5116 Specialized Reporting | 3 |
| JOU 5225 Newspaper Production | 3 |
| JOU 5948 Internship | 3 |
| JOU 5907 Graduate Project | 3 |
| | 24 |

Broadcast Journalism

| | |
|--------------------------------------------------------------|----|
| RTV 5105 Broadcast Newswriting | 3 |
| RTV 5226 Television News | 3 |
| RTV 5306 Specialized Broadcast Reporting | 3 |
| JOU 5182 Public Affairs Reporting | 3 |
| JOU 5501 Newsroom Management | 3 |
| RTV 5705 Policy, Regulation and Technology in Broadcast News | 3 |
| JOU 5948 Internship | 3 |
| JOU 5907 Graduate Project | 3 |
| | 24 |

Copy Editing

| | |
|----------------------------------------|----|
| JOU 5105 Newswriting and Reporting | 3 |
| JOU 5182 Public Affairs Reporting | 3 |
| JOU 5501 Newsroom Management | 3 |
| JOU 5225 Advanced Newspaper Production | 3 |
| JOU 5205 Copy Editing I | 3 |
| JOU 5227 Copy Editing II | 3 |
| JOU 5948 Internship | 6 |
| | 24 |

Academic Services (30 credit hours)

| | |
|-------------------------------------------------|----|
| ISS 5316 Statistics (or equivalent) | 3 |
| JOU 5807 Teaching Methods for Journalism | 3 |
| MMC 5600 Mass Communications Theory and Effects | 3 |
| JOU 5935 Seminar in Scholarly Writing | 3 |
| JOU 5971 Thesis | 6 |
| | 18 |

Graduate Course Descriptions

MMC 5425 Research Methods in Journalism (3) Introduction to mass communication research techniques, practice of social science research as it applies to communication. Scientific method, measurement, analysis. Emphasis on understanding research techniques and use of research results. Questionnaire construction, interview techniques, hypothesis testing. Use of computer programs to structure and analyze data for scientific surveys for mass media.

JOU 5706 Media Law and Ethics (3) Historical derivation of press freedom and the history of First Amendment law. Focus on sedition, libel, privacy, broadcast regulation, obscenity, free press and fair trial, information gathering, public records and other areas. Students will also be exposed to ethical issues concerning a free press.

JOU 5341 Changing Technologies in Journalism (3) How innovations change society. Impact of technology on current journalistic practices. New developments in database publishing, electronic news retrieval and the increasing transfer of publication functions to editors. Field project.

JOU 5009 Historical and Contemporary Issues in Journalism (3) Introduction to the history and development of journalism in relation to important social, political and economic issues. Discussion of current issues affecting Florida, the United States and world community news, and the coverage of these issues.

JOU 5105 Newswriting and Reporting (3) Reporting and writing news stories with emphasis on style, clarity, accuracy and responsibility in handling news. Locating and interpreting basic sources used in reporting and editing news.

JOU 5106 Advanced Reporting (3) Prereq: JOU 5105 or RTV 5105. Developing skills to plan, organize, write, edit and revise non-fiction articles for publication in mass media.

JOU 5116 Seminar in Specialized Reporting (3) Prereq: Successful completion of JOU 5105. Exploration by research of the various selected realms of specialized reporting, e.g., science, business, education, the environment, military affairs, technology, international affairs, the leading writers and professional associations. Supervised practice in specialty reporting.

JOU 5182 Public Affairs Reporting (3) Prereq: Successful completion of JOU 5106. News gathering and reporting on state legislative issues and activities.

JOU 5501 Newsroom Management (3) An examination of the complexities of modern media organizations, their friction and synergy. Emphasis on organizational structure and managing for profit with special emphasis on the newsroom.

JOU 5225 Newspaper Production (3) Prereq: Successful completion of JOU 5105. Newspaper editing including all facets of layout, editing and design with heavy emphasis on copy editing and completion of newspaper projects using copy, halftones and graphic elements. Production of text and graphic projects using latest software and hardware. Basics of digitization and color separation.

JOU 5205 Copy Editing I: Prereq: JOU 5105 and JOU 5225. Theory and practice in advanced techniques of newspaper copy editing, headline and outline writing, and use of photographs and infographics in page design.

JOU 5227 Copy Editing II: Prereq: JOU 5105, JOU 5225 and JOU 5205. Practice in advanced newspaper copy editing, including the editing of series, packages and projects. Exploration of legal and ethical issues in copy editing. Students will learn to coach writers/reporters.

JOU 5907 Graduate Project (3) Creative, imaginative or scholarly activity employing journalistic techniques. Prereq: Successful completion of graduate core curriculum.

JOU 5948 Internship: Prereq: Successful completion of JOU 5105, JOU 5225 and JOU 5226 or equivalent broadcast courses. Experience as a working member of a professional news-gathering organization or in a communication position within a private or public organization or business.

RTV 5105 Broadcast Newswriting (3) Techniques of writing for oral delivery of news, features, public affairs, documentary and editorial scripts for radio and television.

RTV 5226 Television News (3) Prereq: Successful completion of RTV 5105. Writing and production of television news stories on deadline using ENG techniques, principles and practice of television news production.

RTV 5306 Specialized Broadcast Reporting (3) Prereq: Successful completion of RTV 5226. Technique and practice in broadcast news for beats, specialized formats and documentaries.

RTV 5705 Policy, Regulation and Technology in Broadcast News (3) The nature of a regulated medium through study of how policy is developed. The actual regulations and the interaction of technology with policy and practice in the broadcast news industry.

JOU 5807 Teaching Methods for Journalism (3) Principles and practice for teaching journalism and advising student media.

MMC 5600 Mass Communication Theory and Effects (3) An analysis of historical and current theories of mass communication with an emphasis on media effects.

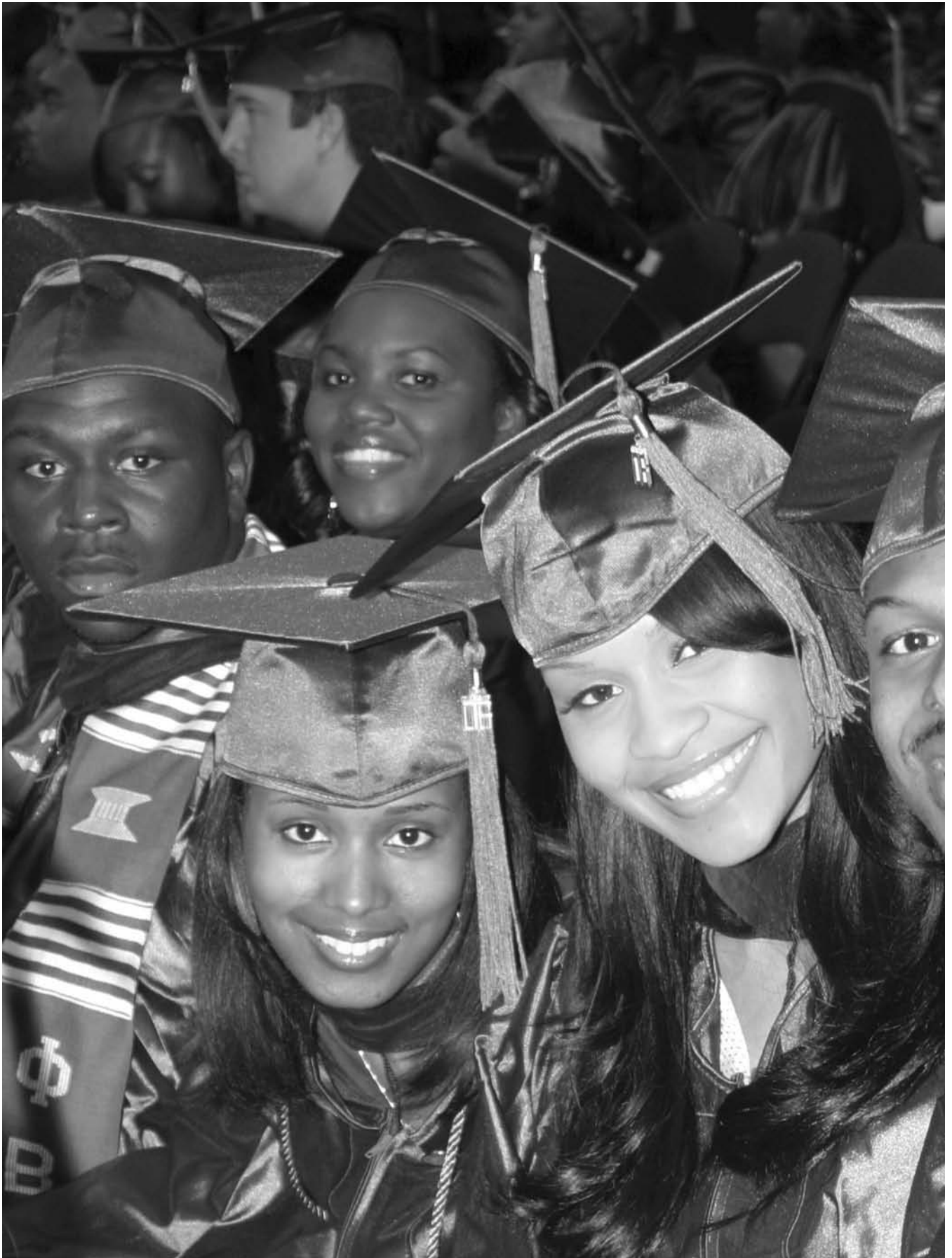
JOU 5931 Specialized Topics in Journalism (v) Permission required. Selected study of an appropriate area related to journalism and mass communication. Subject matter determined by graduate faculty.

JOU 5905 Directed Independent Study (v) Permission required. Student studies a pre-approved topic under supervision of a graduate faculty member.

JOU 5935 Seminar in Scholarly Writing (3) Scholarly writing as a separate genre with its own purposes, audiences, styles, formats and criteria for acceptance and publication.

JOU 5971 Thesis (v) Prereq: Completion of all coursework and successful completion of comprehensive examination. Production of a scholarly work of length and depth that creates new knowledge or adds to the body of existing knowledge about a subject.

PGY 5905 Directed Individual Study (v) Topics in graphic communication, such as photography or web design.



Division of Continuing Education

The Division of Continuing Education provides educational opportunities delivered through various workshops, seminars, conferences, short-courses, credit generating and non-credit generating courses offered both on- and off-campus. These opportunities are consistent with the University's mission of providing "inspirational teaching, exemplary research and meaningful public and community service through creative partnerships at local, state, national and global levels." The Division is an administrative unit under the Office of Academic Affairs operating through the School of Graduate Studies and Research.

The Division of Continuing Education plays a major role in the expansion of the University and seeks to respond to the educational needs of the citizens of Florida through programs designed to provide the skill, knowledge, and attitudes essential to function more effectively in a diverse society. These educational offerings are delivered through various workshops, seminars, conferences, short-courses, credit and non-credit courses offered both on and off campus.

The primary purpose of the Continuing Education program is to meet the educational needs of adults in Florida. In essence, this is accomplished by disseminating the results of the University's activities, research, and teaching among the many specialized groups and individuals throughout Florida. Through its conferences, courses, workshops, and activities, the off-campus programs help adult students to become more knowledgeable, skilled, and adjusted as individuals; contributing members of groups to which they belong; and participating citizens in their communities. It helps them to understand the world in which they live, and provides opportunities for greater appreciation of cultural and aesthetic values.

The rapidly changing nature of society; the growth of knowledge; the impact of science and technology; new teaching methods and media; and the continuing education needs of business, industry, labor, agriculture, government, the professions, and the individual citizen, require FAMU to extend its resources and services to meet these problems and needs if it is to fulfill its role and responsibility.

Admissions

Off-campus students are accepted into undergraduate and graduate admissions programs under the same standards as on-campus students. Students entering the bachelors program must have an A.A. degree or A.S. degree with the general education requirements completed.

Application for admission to all bachelors' degree programs are processed by the Undergraduate Admissions Office. Undergraduate applications are available from the Office of Admissions, Foote-Hilyer Administration Center, Room G-9, Florida A&M University, Tallahassee, FL 32307 and via the internet at www.famu.edu/admission

The admissions application process for Master's and Doctoral degree programs are processed through the School of Graduate Studies Admissions Unit. Students must have earned a bachelors' degree from an accredited institution. Graduate applications can be obtained from the School of Graduate Studies, 400 Tucker Hall, Florida A&M University, Tallahassee, FL 32307 or via the internet at www.graduateschool.edu. The Admissions Application fee of \$25 must accompany the applications of students who are not graduates of FAMU. An application can be printed from the School of Graduate Studies website.

The check or international money order must be made payable to Florida A&M University. The applicant should indicate his/her name, social security number and address on personal checks

Academic Degree Programs

The following off-campus degree programs are offered through the Division of Continuing Education:

College of Arts and Sciences
Madison, FL
Criminal Justice B.S.

College of Education
Chattahoochee, FL
Counselor Education M.Ed.

Madison, FL
Elementary Education B.S.
Educational Leadership M.Ed.

Jacksonville, FL
Elementary Education B.S.
Counselor Education M.Ed.

Lakeland, FL
Elementary Education B.S.

Live Oak, FL
Elementary Education B.S.

Macclenny, FL
Educational Leadership M.Ed.

Registration

Registration for off-campus courses must be conducted via internet. The Non-degree Seeking Student Registration Form is only to be used by students who have never registered for a course at FAMU. The registration forms should be mailed to the Senior/Admissions Registrar, Foote-Hilyer Administration Building, Room 111, Tallahassee, FL 32307 or faxed (850) 561-2428. Registration fees must be mailed in a separate envelope to the Controller's Office/Cashier, FHAC Room 201, Florida A&M University, Tallahassee, FL 32307 or paid on-line.

Non-Credit Courses

The Division of Continuing Education works closely with the colleges/schools/institutes/departments to coordinate all non-credit activities including seminars, conferences, institutes, workshops, and other short term educational programs on or off campus. Non-credit educational programs offer ways to assist individuals to keep abreast of new knowledge in their respective field; Assist individuals to enhance their occupational or employability skills; Provide opportunities for continued personal development; and Provide expertise to assist various agencies in resolving educational, social, and cultural problems.

Non-credit programs are designed to assist adults in the identification and definition of those problems for which university level instructional activities may provide solutions. Such involvement of university faculty is fundamental to the institution's service goal. Therefore, expertise from all units of the University will be needed to meet this service commitment.

FAMU makes a major contribution through workshops, seminars, and conferences offered by several colleges through the Division of Continuing Education. Listed below are some of the programs offered under the Division:

College of Arts and Sciences

- Marching 100 Band Camp
- Irene Edmonds Youth Theatre Summer Program

College of Engineering

- CISCO Networking Academy

College of Engineering Science, Technology and Agriculture

- Southeastern Regional Public Health and Vector Management Conference
- Annual Entomology Field Day and Workshop

School of General Studies

- Conference on Minorities in Education

College of Pharmacy and Pharmaceutical Sciences

- Workshop on Medication Errors for Pharmacist
- Consultant Pharmacy Seminars for Pharmacist
- Clinical Symposium for Pharmacist and other health care professionals

Continuing Education Units (CEUs)

Continuing Education Units are awarded for participation in planned non-credit instructional programs meeting established criteria. The number of units for each course or program is determined in writing in advance of the program. The CEU is intended to serve all interests in continuing education, whether public or private, and whether individual, instructional, institutional, organizational, governmental, or societal. The unit is applicable to the appropriate learning experiences of adults at all levels from post secondary to post doctoral; for all classes of adult learners, whether vocational, technical, professional, managerial, or adults bent on personal improvement; and in all formats of teaching and learning known to the field of education.

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 School of Journalism and Graphic Communication Resources Center, and the School of Architecture Library. The University Libraries also support the FAMU/FSU College of Engineering Reading Room 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 a million cataloged volumes, over 99,000 bound periodicals, over 448,000 microforms, over 76,000 non-print resources, and over 6,000 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 562,000 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 and other databases. Reciprocal borrowing privileges are available at all Florida public universities and community colleges.

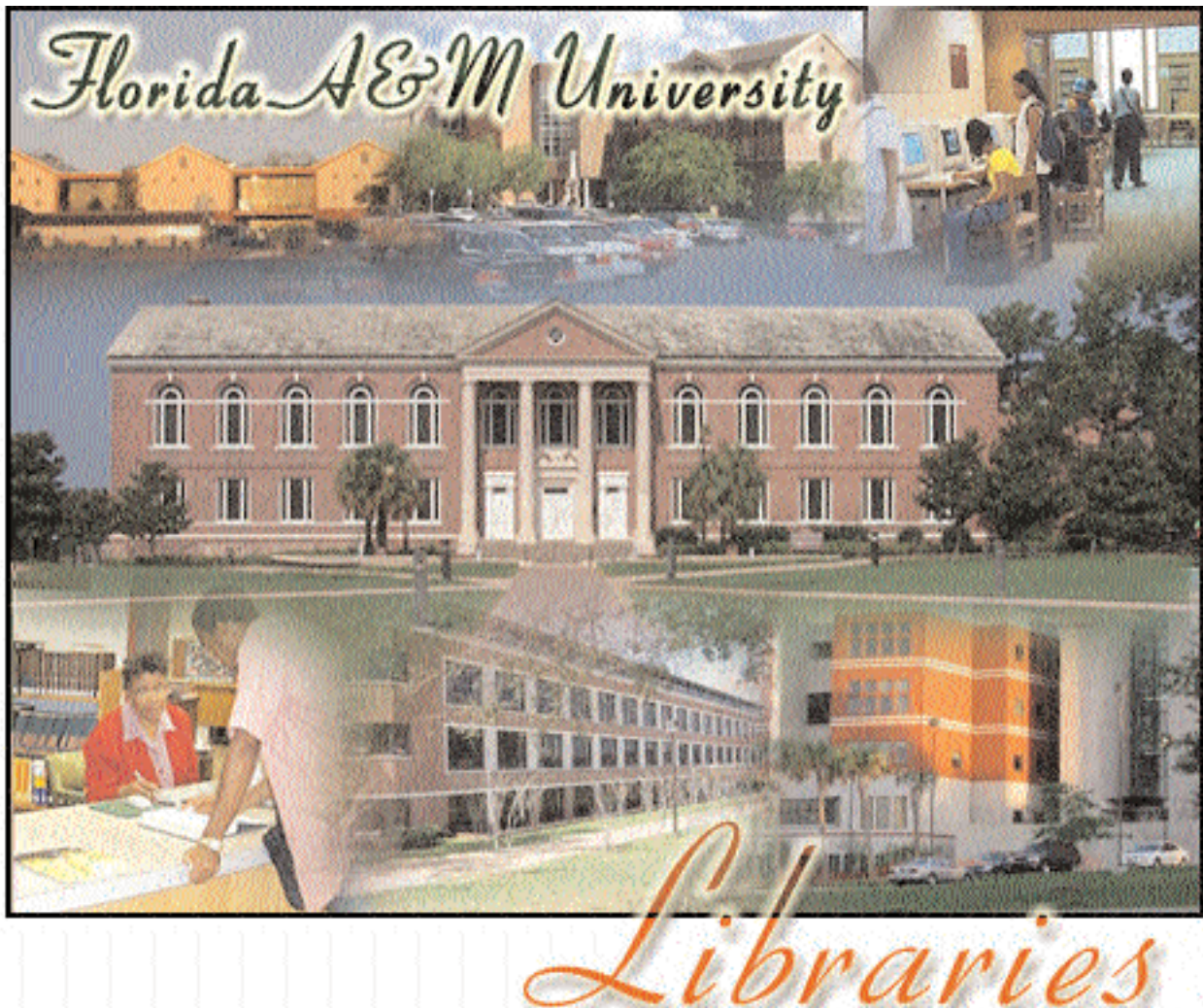
The online catalog can be found on the Libraries' homepage: <http://www.famu.edu/library>. The online catalog reflects the majority of book and journal holdings of the University Libraries. It includes many indexes, which provide citations to journal articles, over 33,000 unique full-text journal titles, over 55,000 electronic books, and over 1,000 gov-

ernment publications in electronic format. The Libraries' homepage together with the online catalog ease the difficulty of locating information. They are accessible from any location that has Internet access and serve as a gateway to library catalogs in Florida, other states, and other countries.

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 remote online searching services.

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 standard reference services, ASK-A-LIBRARIAN provides virtual reference service. At the beginning of each semester, the Libraries offer group orientation programs designed to orient users to new and existing services and how to use them. Individual assistance is available at the reference desk in each library. In addition, faculty librarians collaborate with teaching faculty to develop and present library instruction and research techniques for specific courses of study. Additional information, including contact information, and descriptions of specialized services and resources, are available at <http://www.famu.edu/library>.





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.

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. 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 student's 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 is an integral part 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, overhead projectors, VCRs and camcorders are available to enhance classroom instruction.

For more information, visit the Instructional Media Center's Web site at <http://www.famu.edu> and click on the Instructional Technology button.



Special Admissions

COLLEGE OF EDUCATION

The College of Education regulates and monitors the admissions policies for all undergraduate 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 undergraduate teacher education program must meet 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 a FAMU cumulative grade point average (GPA) of 2.50 or higher;
- Have evidence of successfully taken and passed all subtests of the College Level Academic Skills Test (CLAST) score requirements (exemptions are not applicable for teacher education majors);
- Have met all "Gordon Rule" requirements;
- Have a grade of a "C" or better in the required courses taken as a part of the General Education Preparation Program; and
- Must successfully complete a pre-admission interview by the College of Education Admissions Committee.

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.

- Students completing their freshman and sophomore years at Florida A&M University should apply the first semester of their sophomore year or after having completed at least thirty (30) semester hours of coursework.
- Students transferring from a community or junior college or another four-year institution should apply the first semester they are enrolled at Florida A&M University.
- Students who change their majors to teacher education after enrolling in other programs at Florida A&M University for one or more semesters should apply at the same time that they request approval of a change of major.

Students seeking admission will be classified as:

- Regular Teacher Education Major.
- Students who are interested in majoring in teacher education but do not meet all of the criteria for admission may petition the Admissions Committee to be considered under the ten percent (10%) exception policy. This policy allows the College of Education to admit 10% of the students who do not meet all of the requirements for admission to teacher education.

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 at least fourteen weeks that is required of all teacher education majors. Prerequisites, including the completion and filing of an Application to Student Teaching, for participation in this culminating experience are as follows.

- Admission to teacher education (for students seeking a baccalaureate degree from Florida A&M University);
- A minimum cumulative grade point average (GPA) of 2.50;
- Completion of all prerequisite courses; and
- Evidence of having passed all parts of the College Level Academic Skills Test (CLAST) examination, and all parts of the Florida Teacher Certification Examination (FTCE), the semester before student teaching.

Application for student teaching must be made during the semester preceding the semester in which the student desires to complete the student teaching experience, with one exception. Students who desire to participate in student teaching during the Fall Semester of any academic year must apply during the preceding Spring Semester. Deadline dates are: March 1 for the next Fall Semester and October 1 for the next Spring Semester.

Admission to teacher education and student teaching is administered through the College of Education's Center for Teacher Preparation and Career Development. Application forms and information concerning these processes may be obtained through that office, which is located in the Gore Education Center, Unit B, Room 203.

COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Doctor of Pharmacy

Pre-Pharmacy Program Admissions Criteria- Admission to the Pre-Professional program is done 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 indicating that interest 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 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.

The recommended high school background for students planning to enter the pre-professional program should have the following 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. All completed applicant folders are reviewed by the College of Pharmacy's Admissions and Academic Standards Committee. In recognizing its responsibility to impact upon the shortage of health professions, the committee considers the applicant's academic background, character, motivation, commitment, extra curricular 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.

the university are outlined under the heading "Special Admissions, Requirements of the Colleges and Schools."

UNDERGRADUATE ADMISSIONS

A student seeking admission to a professional undergraduate division in the School of Allied Health Sciences must:

1. Have completed and maintained a grade point average of 2.5 or better in all pre-professional course work.
2. Secure and complete an application for admission to the professional division of his or her choice within deadline as prescribed by each division.
3. Submit an autobiographical essay of at least 300 words to the division director, along with the completed application.

Admission to a professional undergraduate division 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 Occupational and Physical Therapy: Have a combined score of a 1,000 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, 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 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, Research, and Continuing Education.

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 professional division of his/her choice. Admission to the university does not guarantee acceptance into any of the professional divisions. The requirements and procedures for admissions to

SCHOOL OF ARCHITECTURE

The School of Architecture is a professional school committed to preparing its graduates for excellence in the practice of architecture and landscape architecture. 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 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**
- C. Master of Landscape Architecture** (professionally accredited program)

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 section in this catalog under the "School of Graduate Studies, Research, and Continuing Education."

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. LOWER DIVISION APPLICANTS

A. Unconditional Admission

1. Applicants who have scored a minimum of 1010 on the critical reading and mathematics section of SAT or 21 on the ACT are given preference in 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 2.5 or above are considered acceptable candidates for admission to the program.
3. A combination of test scores and high school performance will be evaluated on an individual basis.

B. Conditional Admission

1. Applicants who have maintained a cumulative average of 2.5 or above during the freshman year should request admission to the lower division nursing major.

C. Junior College, Community College, and Transfer of Other College Level Credits

1. Applicants must have earned a 2.5 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 in the upper division course of study in nursing.
3. Preference will be given to those applicants who have followed a pre-nursing or science course of study.

II. ADMISSION TO THE UPPER DIVISION OF NURSING

A. Please note that admission to the School of Nursing does not guarantee admission to the upper division.

B. Before admission to the upper division, each student must have:

1. Earned a 2.5 or greater cumulative grade point average, for all college work attempted;
2. Earned a grade of "C" in the required behavioral, social, and natural science courses;

3. Completed selected lower level general courses required by the School of Nursing;
4. Submit a completed School of Nursing application packet; and
5. Received the recommendation of the Admission, Retention, Progression, and Graduation Committee.
6. See "Upper Division Admission" requirements for further details.

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, 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.



Learning Development and Evaluation Center (LDEC)

Mission

The Learning Development and Evaluation Center (LDEC) at Florida A & M University collaborates with local, state, and federal agencies, as well as the university community to provide supportive services and accommodations to students with learning and physical disabilities to enhance their skills for personal, academic, and professional growth.

It is the intent of the LDEC staff to assist students in maintaining dignity and respect in a caring, supportive, and nurturing environment.



Overview

The LDEC 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.



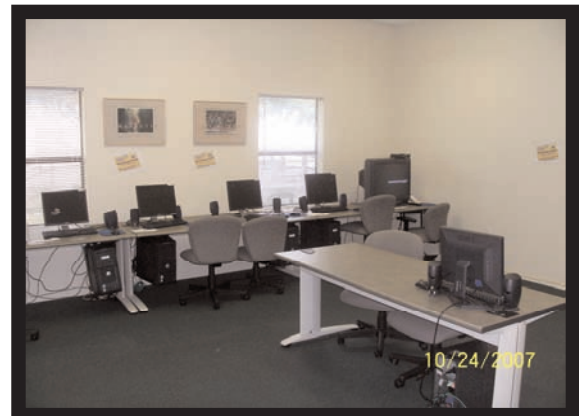
Mobility Services

The LDEC 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 LDEC 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 LDEC sponsors the College Study Skills Institute (CSSI), a five week summer program designed for prospective students with disabilities. During CSSI, student's 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 LDEC 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
Learning Development
and Evaluation Center
#667 Ardella 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 Administration)

The Small Business Development Center has as its major focus to provide management and technical assistance to small business firms, to assist in stabilizing the economy and developing jobs in the private sector, and to foster entrepreneurship. Services are provided to an area which includes eight counties: Leon, Franklin, Gadsden, Liberty, Jefferson, Madison, Taylor and Wakulla.

Services Provided

Educational Programs - Provides 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 includes 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), 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 communities' economic development. The training is provided through the Small Business Development Center at Florida A&M University.

County officials will reserve bids and Request for Proposals (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 System

Courses in this catalog are identified by prefixes and numbers that were assigned by Florida's Statewide Course Numbering System. This common numbering system is used by all public postsecondary institutions in Florida and by several participating non-public institutions. The major purpose of this system is to facilitate the transfer of courses between participating institutions.

Each participating institution controls the title, credit, and content of its own courses and recommends the first digit of the course number to indicate the level at which students normally take the course. Course prefixes and the last three digits of the course numbers are assigned by members of faculty discipline committees appointed for that purpose by the Florida Department of Education in Tallahassee. Individuals nominated to serve on these committees are selected to maintain a representative balance as to type of institution and discipline field or specialization.

The course prefix and each digit in the course number have 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 "course equivalency profiles."

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)

Transfer of any successfully completed course from one institution to another is guaranteed in cases where the course to be transferred is equivalent to one offered by the receiving institution. Equivalencies are established by the same prefix and last three digits and comparable faculty credentials at both institutions. For example, SYG 1010 is offered at a community college. The same course is offered at a state university as SYG 2010. A student who has successfully complete SYG 1010 at the community college is guaranteed to receive transfer credit for SYG 2010 at the state university if the student transfers. The student cannot be required to take SYG 2010 again since SYG 1010 is equivalent to SYG 2010. Transfer credit must be awarded for successfully completed equivalent courses and used by the receiving institution to determine satisfaction of requirements by transfer students on the same basis as credit awarded to the native students. It is the prerogative of the receiving institution, however, to offer transfer credit for courses successfully completed which have not been designated as equivalent.

The Course Prefix

The course prefix is a three-letter designator for a major division of an academic discipline, subject matter area, or 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

State Board of Education Rule 6A-10.024(19), Florida Administrative Code, reads:

When a student 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 common course designation and numbering system, the receiving institution shall award credit for courses satisfactorily completed at the previous participating institutions when the courses are judged by the appropriate common course designation and number-

ing system faculty task forces 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 award of credit may be limited to courses that are entered in the course numbering system. Credits so awarded shall satisfy institutional requirements on the same basis as credits awarded to native students.

General Rule for Course Equivalencies

All undergraduate courses bearing the same alpha prefix and last three numbers (and alpha suffix, if present) have been agreed upon to be equivalent. For example, an introductory course in sociology is offered in over forty (40) post-secondary institutions in Florida. Since these courses are considered to be equivalents, each one will carry the designator SYG_000.

First Digit

The first digit of the course number is assigned by the institution, generally to indicate the year it is offered-i.e., 1 indicates freshman year; 2 indicates sophomore year. In the sociology example mentioned above, one school which offers the course in the freshman year will number it SYG 1000; a school offering the same course in the sophomore year will number it SYG 2000. The variance in first numbers does not affect the equivalency. If the prefix and last three digits are the same, the courses are substantively equivalent.

Titles

Each institution will retain its own title for each of its courses. The sociology courses mentioned above are titled at different schools introductory sociology, general sociology, and principles of sociology. The title does not affect the equivalency. The courses all carry the same prefix and last three digits; that is what identifies them as equivalent.

Lab Indicators

Some courses will carry an alpha suffix indicating a lab. The alpha suffixes "L" and "C" are used as follows to indicate laboratories:

"L" means either (a) a course, the content of which is entirely laboratory or (b) the laboratory component of a lecture-lab sequence in which the lab is offered in conjunction with the lecture at the same time/place.

Examples:

| | | |
|-------------------------|-----------|----------------------------|
| Marine Biology | OCB 2013 | (lecture only) |
| | OCB 2013L | (lab only) |
| Marine Biology with lab | OCB 2013C | (lecture and lab combined) |

Therefore, OCB 1013C is equivalent to OCB 1013 plus OCB 1013L.

Equivalency of Sequences

In certain cases, sequences of courses in a given discipline are equivalent rather than the individual courses which make up these sequences (for example, MAC 1132, 1133). In these cases the subject matter topics may not be taught in the same sequence, course by course, in several institutions; students have completed substantively equivalent content. These sequences are clearly identified in the Course Equivalency Profiles.

Explanation of Prefixes and Numbers

Prefixes and numbers in the course numbering system are not chosen at random; they are designed to describe course content in an organized fashion within a classification system developed by each subject matter area.

Generally, each of the major classifications in a discipline is represented by a three-alpha prefix. In some cases, one three-alpha prefix has been sufficient for the entire discipline. A discipline may use as many prefixes as necessary to accommodate its major classifications. The logic of the system allows it to be infinitely expandable with minimal disruption to existing numbers.

History, for example, has seven prefixes: AFH, African History; AMH, American History; ASH, Asian history; EUH, European History; HIS, History-General; LAH, Latin American History; and WOH, World History. All history courses in the state will carry one of these prefixes. A more specific example is AMH 3411.

(Local titles are used for each particular courses. The last three numbers are used to indicate equivalency.)

A complete inventory of taxonomic listings, equivalent, and unique courses has been made available to each academic department of every institution in the state. Students, through their local advisors, should use this information in designing programs which will transfer smoothly.

For example, a survey course in social problems is offered by 31 different postsecondary institutions. Each institution uses "SYG-010" to identify its social problems course. The level code is the first digit and represents the year in which students normally take the course at a specific institution. In the SCNS taxonomy, "SYG" means "Sociology, General," the century digit "0" represents "Entry-level General Sociology," the decade digit "1" represents "Survey Course," and the unit "0" represents "Social Problems."

Exceptions to the Rule for Equivalencies

The following are exceptions to the general rule for course equivalencies:

- A. All graduate level courses (except those which the faculty and their reviewing colleagues have determined to be substantively equivalent with undergraduate courses) are not automatically transferable.
- B. All numbers which have a second digit of 9 (Ex.: ART 4905) are "place keeper" numbers for such courses as directed independent study, thesis hours, etc. Courses with 900 numbers must be evaluated individually and are not automatically transferable.
- C. All internships, practicums, clinical experiences, and study abroad courses, whatever numbers they carry, are not automatically transferable.
- D. Performance or studio courses in art, dance, theater, and music are not automatically transferable but must be evaluated individually.
- E. College preparatory and vocational preparatory courses may not be used to meet degree requirements and are not transferable.

Questions about the Statewide Course Numbering System can be directed to the Registrar's Office or Florida Department of Education, Office of Postsecondary Education Coordination, 1101 Florida Education Center, Tallahassee, FL 32399-0400, (850) 245-9545.

Course Prefixes Listing

The following table lists the statewide course prefixes and titles that are used at Florida A&M University:

Course

| Prefix | Prefix Title |
|--------|-----------------------------------------|
| ABE | Agricultural and Biological Engineering |
| ACG | Accounting General |
| ADE | Adult Education |
| AEB | Agricultural Economics and Business |
| AEE | Agriculture and Extension Education |
| AER | Automotive Repair |
| AFA | Afro-American Studies |
| AFH | African History |
| AFS | African Studies |
| AGG | Agriculture General |
| AGR | Agronomy |
| AMH | American History |
| AML | American Literature |
| ANS | Animal Science |
| ANT | Anthropology |
| APA | Applied Accounting |
| APB | Applied Biology |
| ARC | Architecture |
| ARE | Art Education |
| ARH | Art History |
| ART | Art |
| ASG | Animal Science-General* |

| | |
|-----|-----------------------------------|
| ASH | Asian History* |
| AST | Astronomy |
| BCH | Biochemistry |
| BCN | Building Construction |
| BME | Biomedical Engineering |
| BOT | Botany |
| BSC | Introductory Biology |
| BTE | Business Teacher Education |
| BUL | Business Law |
| CAP | Computer Applications |
| CCE | Civil Construction Engineering* |
| CCJ | Criminology and Criminal Justice |
| CDA | Computer Design/Architecture |
| CEG | Civil Geotechnical Structures |
| CEN | Computer Engineering |
| CES | Civil Engineering Structures |
| CET | Computer Engineering Technology |
| CGN | Civil Engineering General |
| CGS | Comp. for General Studies |
| CHM | Chemistry |
| CHS | Chemistry Specialized |
| CIS | Computer and Information Systems |
| CJJ | Criminal Justice Juvenile |
| CJL | Criminal Justice Law |
| CLP | Clinical Psychology |
| CNM | Computational Numerical Method* |
| COC | Computer Concepts |
| COM | Communication |
| COP | Computer Programming |
| COT | Computer Theory |
| CPO | Comparative Politics |
| CRW | Creative Writing* |
| CWR | Civil Water Resources |
| CYP | Community Psychology |
| DAA | Dance Activities |
| DAE | Dance Education |
| DAN | Dance |
| DAS | Dairy Science* |
| DEP | Developmental Psychology |
| DHE | Demography and Human Ecology* |
| EAB | Experimental Analysis of BEH |
| EAS | Aerospace Engineering |
| ECH | Engineering: Chemical |
| ECI | Engineering: Civil* |
| ECO | Economics |
| ECP | Economic Problems and Policy |
| ECS | Economic Systems and Development* |
| EDA | Education Administration |
| EDE | Education Elementary |
| EDF | Education Foundation |
| EDG | Education General |
| EDM | Education Middle School* |
| EDP | Educational Psychology |
| EDS | Education Supervision |
| EEC | Education Early Childhood |
| EED | Education: Emotional Disorder |
| EEL | Engineering Electrical |
| EET | Electronic Engineering Technology |
| EEX | Education Exceptional Child |
| EGC | Guidance and Counseling |
| EGI | Education: Gifted Child |
| EGM | Engineering: Mechanical |
| EGN | Engineering General |
| EGS | Engineering General |
| EIA | Education Industrial Arts |
| EIN | Engineering Industrial |
| ELD | Education Specific Learning |
| ELR | engineering Electrical Lab* |
| EME | Education Technology and Media |
| EMA | Materials Engineering |
| EML | Engineering Mechanical |
| EMR | Education Mental Retardation |
| ENC | English Composition |
| ENG | English General |
| ENL | English Literature |

| | | | |
|-----|----------------------------------------|-----|--------------------------------------------------|
| ENV | Engineering Environmental | MUH | Music History Musicology |
| ENY | Entomology | MUL | Music Literature* |
| EPH | Education Physical and Multiple | MUM | Music Composition* |
| ESE | Education Secondary | MUN | Music Musical Ensembles* |
| ESI | Engineering: Industrial | MUS | Music |
| ESL | English as a Second Language | MUT | Music Theory |
| EST | Electronic Specialty Technology | MVB | Music Applied Brasses |
| ETC | Engineering Technology Civil | MVK | Music Applied Keyboard |
| ETE | Engineering Technology Electrical* | MVP | Music Applied Percussion |
| ETG | Engineering Technology General | MVS | Music Applied Strings* |
| ETI | Engineering Technology Industrial* | MVV | Music Applied Voice |
| ETM | Engineering Technology Mechanical | MVW | Music Applied Woodwinds* |
| EUH | European History | NGR | Nursing, Graduate |
| EVR | Environmental Studies | NSC | Naval Science |
| EVS | Environmental Science* | NUR | Nursing |
| EVT | Education Vocational/Technical | OCB | Oceanography Biological* |
| EXP | Experimental Psychology | ORH | Ornamental Horticulture |
| FIN | Finance | ORI | Oral Interpretation* |
| FLE | Foreign Language Education | OST | Office Systems Technology |
| FOL | Foreign and Biblical Languages* | OTH | Occupational Therapy |
| FOS | Food Science | OUR | FAMU-FSU Cooperative Program |
| FRC | Fruit Crops* | PAD | Public Administration |
| FRE | French Language | PCB | Process Cell Biology |
| FRW | French Literature Writings* | PCO | Psychology for Counseling* |
| FSS | Food Service Systems | PEL | Physical Education Acts General |
| GEA | Geography Regional Area | PEM | Physical Education Acts Performance |
| GEB | General Business | PEN | Physical Education Acts Water |
| GEO | Geography Systematic* | PEO | Physical Education Arts Objective |
| GLY | Geology* | PEP | Physical Educational Acts Performance |
| GRA | Graphic Arts | PEQ | Physical Education Acts Water |
| HCA | Health Care Administration* | PET | Physical Education Theory |
| HIM | Health Information Management | PGY | Photography |
| HIS | History General | PHA | Pharmacy |
| HLP | Health Leisure and Physical Education* | PHC | Public Health Care |
| HOS | Horticultural Sciences* | PHH | Philosophy History of* |
| HSA | Health Service Administration | PHI | Philosophy |
| HSC | Health Science | PHM | Philosophy of Man and Society* |
| HUM | Humanities | PHT | Physical Therapy |
| HUN | Human Nutrition | PHY | Physics |
| IDS | Interdisciplinary Studies | PHZ | Physics: Specialized |
| INP | Industrial and Applied Psychology | PLS | Plant Science* |
| INR | International Relations | POS | Political Science |
| ISC | Interdisciplinary Science* | POT | Political Theory* |
| ISS | Interdisciplinary Social Science | PPE | Psychology of Personality* |
| JOU | Journalism | PSB | Psychobiology* |
| LAA | Landscape Architecture | PSC | Physical Sciences |
| LAE | Language Arts and English Education | PSE | Poultry Science* |
| LAH | Latin American History* | PSY | Psychology |
| LEI | Leisure | PUP | Public Policy |
| LIN | Linguistics | PUR | Public Relations |
| LIS | Library Science* | QMB | Quantitative Methods in Business |
| LIT | Literatures | RCS | Rehabilitation Counseling Services |
| MAA | Mathematics Analysis | REA | Reading |
| MAC | Mathematics Calculus and Precalculus | RED | Reading Education |
| MAD | Mathematics Discrete | REL | Religion |
| MAE | Mathematics Education | RET | Respiratory Therapy |
| MAG | Mechanized Agriculture* | RHT | Radiation Health/Radiation Protection Technology |
| MAN | Management | RMI | Risk Management and Insurance* |
| MAP | Mathematics Applied | RTV | Radio Television |
| MAR | Marketing | SCE | Science Education |
| MAS | Mathematics Algebraic Structure | SDS | Student Development Services |
| MAT | Mathematics | SLS | Student Life Skills |
| MCB | Microbiology | SOP | Social Psychology |
| MGF | Mathematics General and Finite | SOS | Soil Science |
| MHF | Mathematics History and Foundation | SOW | Social Work |
| MHS | Mental Health Services | SPA | Speech Pathology and Audiology* |
| MIS | Military Science | SPC | Speech Communication |
| MKA | Marketing Applications | SPN | Spanish Language |
| MMC | Mass Media Communication | SPS | School Psychology |
| MRE | Medical Records | SPT | Spanish Literature in Transition |
| MSL | Military Science Leadership | SPW | Spanish Literature Writing |
| MTG | Mathematics Topology and Geometry | SSE | Social Studies Education |
| MUC | Music Commercial* | SSI | Interdisciplinary Social Science |
| MUE | Music Education | STA | Statistics |
| MUG | Music Conducting | STD | Student Development* |

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|-----|---------------------------------------|
| SUR | Surveying |
| SYA | Sociological Analysis |
| SYD | Sociology of Demo Area Studies |
| SYG | Sociology General |
| SYO | Social Organizations |
| SYP | Social Processes* |
| TAX | Tax Accounting |
| THE | Theatre |
| TPA | Theatre Production and Administration |
| TPP | Theatre Performance |
| TRA | Transportation |
| TSL | Teaching Second Languages |
| TTE | Transportation and Traffic Eng |
| URP | Urban and Regional Planning* |
| VEC | Vegetable Crops* |
| VES | Veterinary Science* |
| VME | Veterinary Medicine* |
| WOH | World History |
| ZOO | Zoology |

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The year in parentheses following each individual listing denotes the year the person started working at Florida A&M University.

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**Indicates graduate faculty

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- NATALIE KING-PEDROSO**, *Professor of English*-B.A., College of the Holycross; M.A., Florida Atlantic University; Ph.D., Florida State University (2005)
- OTIS KIRKSEY**, Professor of Pharmacy Practice /Interim Director of Continuing Education- B.S., Pharm. D., Florida A&M University (1993)
- GBRE-EGZIABHER KIROS**, Associate Professor of Public Health-B.S., M.S., Addis Ababa University; Ph.D., Brown University (2002)
- ADA PEARL KNIGHT**, Assistant Professor, Cooperative Extension Service-B.S., Fort Valley, Georgia; M.Ed., Ph.D., Pennsylvania State University (1988)
- ROY F. KNIGHT****, Professor of Architecture-B.A., Harvard College; M.Arch., Harvard University; Dip. d'Etudes, Royal Academy of Fine Arts, Copenhagen (1989)
- MALAK G. KOLTA****, Professor of Pharmacology-B.S., Cairo University; M.S., University of Georgia; M.S., Florida A&M University; Ph.D., Auburn University (1989)
- LISA KONG**, Assistant in Statistical Research, School of Business and Industry-MBA, Florida A&M University (1995)
- MILEN KOSTOV**, *Assistant Professor of Chemical & Biomedical Engineering*-Ph.D., Pennsylvania State University (2006)
- ANJANEYULU KROTHAPALLI****, Professor and Eminent Scholar of Mechanical Engineering-D.M.I.T., Madras Institute of Technology; M.S., Ph.D., Stanford University (1983)
- BING W. KWAN****, Associate Professor of Electrical & Computer Engineering-B.S., M.S., Queens University; Ph.D., Ohio State University (1985)
- MICHAEL C. LABOSSIERE**, Professor of Philosophy-B.A., Marietta College; M.A., Ph.D., Ohio State University (1993)
- CAROLYN LAFAILLE**, *Instructor of Business and Technology Education*-B.S., M.Ed., Florida A&M University (1992)
- DEBORAH LAGRASSE**, Instructor of Architecture - B.A. in Painting, University of Florida; M.F.A. in Sculpture, Southern Illinois University (1993)
- DAVID LARBALESTIER****, *Professor of Mechanical Engineering*-Ph.D., University of London
- MARAGETH LAROSE-PIERRE**, Miami Division Director and Associate Professor of Pharmacy Practice-BS, Florida Memorial College; Pharm. D., Florida A&M University (1998)
- NAZIRUS LAMANGO**, Associate Professor of Pharmacy-B.S., Ph.D., The University of Leeds (1986)
- REBEKAH M. LANE**, Assistant Professor of Mathematics-B.S., M.Ed., Florida A&M University; Ph.D., Florida State University (2006)
- LISA J. LANG**, School of General Studies-B.S., M.A.S.S., M.S., Florida A&M University; Ph.D., Florida State University (1986)
- JAMICA LANGLEY, CPT**, Assistant Professor of Military Science AROTC - B.S., St. Augustine College (2007)
- MERLIN R. LANGLEY****, Associate Professor/Chairperson of Social Work, MSW Program, Department of Social Work, College of Arts and Sciences. B.A., City University of New York; Ed.M., Boston University; Ph.D., Florida State University (1992)
- LUNDY R. LANGSTON**, Professor of Law-B.A., North Carolina Central University; J.D., North Carolina Central University; LL.M., Columbia University (2002)
- KEITH LARSON****, Assistant in Mechanical Engineering-B.S., Florida State University
- LEKAN M. LATINWO****, Professor of Biology-B.S., M.S., Alabama A&M University; Ph.D., Atlanta University (1990)
- DELORES LAWSON****, Associate Professor of Nursing-B.S., Florida A&M University; M.S.N., University of Florida; D.S.N., University of Alabama at Birmingham (1978)
- KIMBERLY LEBBY**, Assistant Professor of Biology-B.S., Microbiology, Clemson University; Ph.D., Pharmaceutical Sciences, Florida A&M University (2002)
- DAVID A. LEHMAN**, Assistant Professor, Division of Physical Therapy-B.S., Florida State University; M.S., University of Miami (1998)
- ROBERT L. LEMONS****, Professor of Reading and Child Development-B.S., Fort Valley State College; M.S., University of Illinois; Ph.D., Syracuse University (1989)
- ELY LEON**, Visiting Instructor of Physics-B.S., Chicago State University; M.S., Ph.D., Florida A&M University (2006)
- CRAIG LEONARD**, Instructor of Respiratory Therapy - B.S., M.A., Governors State University (1994)
- STEPHEN LEONG****, Professor of Viticultural Science-B.S., M.S., Ph.D., Louisiana State University (1988)
- BRYAN LEWIS**, Professor of Microbiology-B.S., Southern University; M.S., McNeese State University; Ph.D., Southern University (2007)
- ELIZABETH LEWIS**, Assistant Professor of Architecture-B.A., Tulane University; M.Arch., Washington University (1987)
- HENRY LEWIS III****, Dean Professor in Pharmacy-B.S., Florida A&M University; PharmD., Mercer University (1974)
- MARISA A. LEWIS****, Associate Professor of Health Care Management - B.S., Texas Southern University; M.P.H., Tulane University School of Public Health and Tropical Medicine; Pharm.D., Florida A&M University (1994)
- YOLANDA LEWIS**, University School Instructor - B.S., Florida A&M

***Indicates deceased

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*On early retirement

University (1994)

CHAO LI, Assistant Professor of Electronic Engineering Technology-B.S., Xian Jiatong University; M.S., University of Electronic Science Technology of China; Ph.D., Florida International University (2006)

HELEN (HUI) LI**, Assistant Professor of Electrical & Computer Engineering-Ph.D., University of Tennessee (2002)

ZHIYONG (RICHARD) LIANG**, Associate Professor of Industrial & Manufacturing Engineering-Ph.D., Beijing University of Aeronautics (2001)

SHUCHUN (SUSAN) LIANG, Instructor Librarian-B.S. Florida State University, (2006)

QUN LIN, Assistant Professor of Chemistry - B.S., Fujian Normal University; Ph.D., Mississippi State University (1994)

LINETTE LINDESAY, University School Instructor and Business Education Instructor - B.S., Florida A&M University (1993)

REGINALD LITTLE, Assistant Professor of Chemistry-B.S., Ph.D., Georgia Institute of Technology (1999)

TAO LIU, Assistant Professor of Industrial & Manufacturing Engineering-Ph.D., Georgia Institute of Technology (2007)

BRUCE R. LOCKE**, Chair and Professor of Chemical & Biomedical Engineering-B.E., Vanderbilt University; M.S., University of Houston; Ph.D., North Carolina State University (1989)

IVETTE A. LOPEZ, Assistant Professor of Public Health-B.A., Seton Hill University; M.P.H., University of Pittsburgh; Ph.D., University of South Florida (2006)

ALFREDO LORENZO**, Associate Professor, Division of Agricultural Sciences - B.S., University of the Philippines at Los Banos; M.S., University of California at Berkeley; Ph.D., Louisiana State University (2001)

LUIZ M. LOURENCO, Professor of Mechanical Engineering-Ph.D., University of Brussels (1984)

VELMA LOVE, Assistant Professor of Religion-B.A., University of South Carolina; M.Div., Union Theological Seminary; Ph.D., Claremont Graduate University

JAING L**, Professor of Agricultural Sciences-B.S., South China College of Tropical Crops; Ph.D., University of Reading (1992)

RONALD LUMPKIN, Assistant Professor of Architecture-B.S., M.Arch., Florida A&M University (1986)

CESAR LUONGO**, Professor of Mechanical Engineering-Ph.D., Stanford University (1999)

GHAZWAN LUTFI, Associate Professor-B.A., Al-Mustansryiah University; M.Ed., University of Pittsburgh; Ph.D., Florida State University (2002)

MARGARET LYLES-EGGELSTON, Visiting Assistant Professor of Chemistry-B.S., Ph.D., Florida A&M University (2007)

TENG MA**, Associate Professor of Chemical & Biomedical Engineering-Ph.D., Ohio State University (2000)

UFORD A. MADDEN, Extension Food Safety Specialist, Assistant Professor-B.S., Tuskegee Institute; D.V.M., Tuskegee University School of Veterinary Medicine; M.S., Iowa State University; Ph.D., Iowa State University (2002).

CHARLES MAGEE, Professor of Biological and Agricultural Systems Engineering-B.S., Alcorn State University; M.S., University of Minnesota; Ph.D., Cornell University (1995)

RASHID MALIK, Associate Professor of Geography-B.S., University of the Punjole; M.S., University of Chicago; Ph.D., Indiana University (1991)

TONY MANSON**, Associate Professor of Secondary Education-B.S., Wayne State University; M.A., East Michigan University; Ph.D., Kansas State University (2004)

BARRY MARCHMAN, Visiting Assistant Professor of Finance, BEE, George Institute of Technology, MBA, Florida State University. (2004)

JANET G. MARSHALL, Associate Professor, School of Nursing-A.S., Ferrum College; B.S.N., University of Virginia; M.S.N., University of North Carolina at Greensboro; D.N.Sc., Rush University (1999)

WONDA MARTIN, Instructor-B.S., M.Ed., Florida A&M University (1992)

THOMAS W. MASON, Professor of Mathematics-B.A., University of Kansas; M.E.Ad., George Washington University; Ph.D., University of Illinois (1973)

ANGELA MASSEY-HILL, Professor/Division Director of Pharmacy Practice-Tallahassee PharmD, Florida A&M University (1993)

NELLY N. MATEEVA**, Assistant Professor of Chemistry-B.S., M.S., Ph.D. Sofia State University (2005)

VALENCIA E. MATTHEWS, Associate Professor of Theatre - B.A., South Carolina State University, M.A., Ohio State University; Ph.D., Florida State University (1995)

ODEMARI MBUYA**, Assistant Professor of Agricultural Sciences-B.S., Sokoine University; M.S., Ph.D. University of Florida (1996)

DONALD McBRIDE**, Director, Center for Teacher Preparation, College of Education-B.S., M.Ed., Florida A&M University; Additional studies, Florida State University (1973)

ADRIAN T. MCCOLLUM, Assistant Professor in Biology-B.S., University of South Carolina; M.S., Eastern Kentucky University; Ph.D., University of Kentucky (2003)

NANCY McCONNELL, Associate Professor of Educational Leadership-B.S., Florida A&M University; M.S., Ph.D., Florida State University (1988)

HORACINE M. McCRAY, Assistant Professor, University High School - B.S., M.Ed., Florida A&M University M.S.N., University of Florida (1990)

ELAINE McCREARY, Instructor Librarian-B.M.E., M.S., M.S.L.S., Florida State University (2007)

YVONNE E. McINTOSH, Associate Professor of French-B.A., Grambling State University; M.A., University of Illinois; Ph.D., Florida State University (1991)

ANGELA MCKENZIE-JAKES, Research Associate, Division of Agricultural Sciences-B.S., M.S., Tuskegee University (1996)

LYDIA MCKINLEY-FLOYD, Dean, School of Business and Industry-B.S., University of Illinois-Chicago; M.B.A., University of Chicago; Ph.D., Emory University (2006)

MARJORIE H. McNEILL**, Director/Associate Professor, Division of Health Information Management-B.S., Medical College of Georgia; M.S., Florida State University; Ph.D., Florida A&M University (1990)

JAMES DAVID McVOY, Visiting Professor of Architecture-B.Arch., 1942, University of Florida (1982)

MICHAEL S. MEEKS, Lieutenant, Assistant Professor of Naval Science-B.A., University of North Florida (1998)

NIKHIL MEHTA, Assistant Professor of Management Information Systems, School of Business and Industry-B.S., Maharshi Dayanand University; MB.A., Kurukshetra University; M.M.I.S., Ph.D., Auburn University (2006)

TONY MEMMINGER, Professor of Military-B.S., Claflin College; M.S., Troy State (1998)

WALTER A. MERCER**, Professor of Elementary Education-A.B., Fisk University; M.S., Ed.D., Indiana University (1962)

DAVINCI C. METCALF, Assistant University Librarian-B.S., Auburn University; M.S.A.S., East Carolina University; M.L.S., University of North Carolina, Greensboro; N.L.S.A.D., Florida State University (2000)

ANKE MEYER-BAESE**, Associate Professor of Electrical & Computer Engineering-Ph.D., Darmstadt University (2001)

UWE H. MEYER-BAESE**, Associate Professor of Electrical & Computer Engineering-Ph.D., Darmstadt University (2001)

EPHREM D. MEZONLIN, Associate Professor of Physics-B.S., M.S., Ph.D., Institute of Mathematics and Physical Sciences (IMSP) National University of Benin (2007)

ELIZABETH MIHALCIK, Instructor in Biology-B.A., University of North Florida; M.S.; Ph.D., University of Florida (1998)

KATHERINE A. MILLA**, Associate Professor, Division of Agricultural Sciences-B.S., University of South Florida; M.S., Ph.D., Florida State University (2000)

J. RICHARD MILLER II, Assistant Professor in Biology-B.S., University of California, Davis; Ph.D., University of North Carolina at Chappell Hill (2004)

ROSALIE J. MILLER, Associate Professor, Division of Occupational Therapy - B.S., Earlham College; M.S., Boston University; Ph.D., University of Florida (1978)

THOMAS MITCHELL, Instructor of Health Education and Coordinator, Black Male College Explorers Program - B.S., Florida A&M University; M.S., City University of New York (1990)

***Indicates deceased

**Indicates graduate faculty

*On early retirement

- RAY MOBLEY****, Associate Professor, Division of Agricultural Sciences – B.S., Florida A&M University; DVM, Tuskegee University; MPH, Tulane University (2000)
- MOGUS D. MOCHENA**, Professor of Physics - B.A., University of California, Los Angeles; Ph.D., University of California, Riverside (1994)
- BEREKET MOCHONA****, *Visiting Assistant Professor* of Chemistry, B.Sc. Addis Ababa University, M.S., Ph.D. Florida A & M University (2006)
- OLUGBEMI MOLOYE**, Associate Professor of Anthropology - B.A., M.A., Ph.D., University of Massachusetts-Amherst (1992)
- REGINALD MOMBRUN**, Associate Professor, College of Law-B.S., Boston University; J.D., North Carolina Central University School of Law; L.L.M., University of Florida (2004)
- SUNNY M. MONTES**, *Captain/USMC, Assistant Professor of Naval Science*-B.S., The College of New Jersey; J.D., University of North Carolina at Chapel Hill (2000)
- PATRICIA MONTGOMERY**, Visiting Instructor, College of Law-B.A., Howard University; J.D., University of Florida College of Law (2006)
- ARNETTE W. MOORE**, Band Director/Instructor, University High School-B.S., Florida A&M University (1985)
- CARL MOORE****, Professor of Mechanical Engineering-Ph.D., Northwestern University (2001)
- KARIN MOORE**, Assistant Professor, College of Law-B.A., J.D., University of Florida; J.D. (2004)
- MARY H. MOORE****, Professor of Counselor Education-B.A., M.Ed., Florida A&M University; Ph.D., Florida State University (1985)
- MELODEE M. MOORE**, *Assistant Professor of First-Year Engineering Program*-Ph.D. Northwestern University (2004)
- SANDRA B. MOORE**, Coordinator/Instructor, School of General Studies-B.S., M.Ed., Florida A&M University (1978)
- STACEY Y. MORRISON**, Assistant Professor of Theatre-B.A., Morgan State University; M.A., Bowling Green State University; M.F.A., University of Louisville
- RENATUS MOSES**, Associate Professor of Civil & Environmental Engineering-Ph.D., Arizona State University (1998)
- BARBARA W. MOSLEY****, Interim Dean/Professor of Health Information Management -B.S., University of Tennessee Center for the Health Sciences; M.P.A., University of Memphis; Ph.D., Florida State University (1983)
- CAROL MOTLEY**, Associate Professor of Marketing, School of Business and Industry-B.A., Southern Illinois University; M.B.A., Washington University; Ph.D., The University of Georgia (2006)
- PRIMUS V. MTENGA****, Associate Professor of Civil & Environmental Engineering-B.Sc. (Honors), University of Daresalaam; M.S., Ph.D., University of Wisconsin-Madison (1991)
- RABBANI MUHAMMAD**, Assistant Professor of Construction Engineering Technology, Division of Engineering Technology - B.S., Howard University; M.S., Harvard University (1990)
- ARVID V. MUKES**, Division Director, Graphic Arts/Professor of Graphic Communication-B.S., Lincoln University; M.S.T., Rochester Institute of Technology; Ed.D., University of Arkansas (1986)
- LESTER MURALLES**, *Extension Agent, Commercial Agriculture/CRD*-B.Sc., EARTH University (2005)
- ANGELA MURPHY**, Associate Professor of Organizational Behavior, Undergraduate Division, School of Business and Industry-B.S., MBA, Florida A&M University; Ph.D., Case Western Reserve University (2001)
- MITWE MUSINGO****, Assistant Professor of Agricultural Sciences-B.S., M.S., Florida A&M University; Ph.D., University of Florida (1984)
- MUSILYU A. MUSA****, *Assistant Professor of Chemistry*, B.S., M.S. University of Lagos, Ph.D. Rhodes University (2006)
- JAMES MUCHOVEJ****, Professor of Agricultural Sciences-B.S., M.S., Purdue University; Ph.D., Virginia Polytechnic Institute and State University (1992)
- TONDA NELSON**, *Extension Youth Development Specialist* - B.S., Florida A&M University, M.Ed, Florida A&M University (2004)
- MARY NEWELL**, *Chairperson of Elementary Education & Associate Professor of Special Education/Administration* -B.S., Mississippi Valley State College; M.S. Delta State University; Ph.D., Florida State University (1992)
- CHRISTOPHER NGASSAM**, Associate Professor of Finance, School of Business and Industry-B.S., University of Illinois; M.B.A., Illinois Institute of Technology; Ph.D., University of Texas-Arlington (2006)
- HALINA NICULESCU****, Associate Professor of Physics-M.S., Warsaw University; Ph.D., University of Bucharest, Romania (1997)
- EANG NGOV**, Assistant Professor, College of Law-B.A., University of Florida; J.D., University of California-Berkeley (2004)
- PAUL NKANSAH****, Associate Professor in Statistics/Production-B.S., University of Cape Coast (Ghana); M.S., Ph.D., Iowa State University (1989)
- SORONADI NNAJI****, Professor of Civil & Environmental Engineering-B.S., Israel Institute of Technology; M.S.Ag. E., University of Hawaii; M.S.C.E., University of Hawaii; Ph.D., University of Arizona (1984)
- JAMES EARL NORMAN**, Associate Professor of Spanish-B.A., Southern Oregon State College; M.A., Howard University; Ph.D., Florida State University (1985)
- RUENA O. NORMAN****, Associate Professor, School of Nursing-B.S.N., Florida A&M University; M.S.N., University of Florida; Ph.D., Florida State University (1972)
- DARYL NORWOOD**, Associate Professor of Pharmacy Practice, Pharm.D., Florida A&M University (1999)
- MARK A. NOVOTNY**, Associate Professor-B.S., North Dakota State University; Ph.D., Imperial College, University of London, UK (1997)
- CHRISTIAN B. NOWICKI**, *Instructor of Computer & Information Sciences*-B.S., M.S., Florida A&M University (2005)
- AUGUSTINE NWABUZOR**, *Associate Professor of International Business/Strategic Policy*, B.S. New York University; MBA and DBA Harvard University. (1999)
- FERDINAND NWAFOR**, Assistant Professor of Economics, School of Business and Industry-B.S., Southern University; MBA, Jackson State University; Ph.D., Howard University (2000)
- HUDSON NWAKANMA****, Professor of Marketing-B.S., M.B.A., Southwest Missouri State University, Ph.D., University of Arkansas (1993)
- WILLIAM S. OATES**, *Assistant Professor of Mechanical Engineering*-Ph.D., Georgia Institute of Technology
- FOLAKEMI ODEDINA****, Professor/Director, Economic, Social and Administrative Pharmacy-B.S., University of Ile; Ph. D., University of Florida (1997)
- CAROLINE ODEWUMI**, *Assistant Professor in Biology*-B.S., Florida A&M University; M.S., North Carolina State University; Ph.D., Florida A&M University (2004)
- V. IWUAGWU OGULEDO**, Chairman and Professor of Economics - B.S., University of Lagos; M.A., University of Alberta (Canada); Ph.D., University of Nebraska (1990).
- BARBARA L. OGUNTADE**, Coordinator, School of General Studies-B.S., Florida A&M University; Ph.D., Florida State University (2000)
- MARIA OKEKE**, Professor of Health and Physical Education-B.S.N., Georgia College; M.P.H., Ph.D., University of Tennessee (1993)
- OKENWA OKOLI****, Associate Professor of Industrial & Manufacturing Engineering-Ph.D., University of Warwick, Coventry, UK (1998)
- IFEAKANDU OKOYE**, *Assistant Professor of Economics*-B.A., Fort Valley State College; M.A., Oklahoma State University; M.B.A., Wayne State University; Ph.D., Wayne State University (2006)
- JORGE L. OLAVES**, *Coordinator/Director, FAMU Aquatics*-B.S., Indiana State University; Educational Specialist, Specialist in Education, Human Resource Certificate, M.A., Florida State University (1990)
- DEBORA OLIVEIRA****, *Academic Fieldwork Coordinator/Assistant Professor of Occupational Therapy*-B.S., University of Wisconsin, Madison; M.S., Nova Southeastern University (2004)
- ZACCH I. OLORUNNIPA**, Professor of Agribusiness-B.S., University of Ibadan; M.S., Ahmadu Bella University; Ph.D., University of Illinois (1988)
- RAY H. O'NEAL**, Associate Professor of Physics-B.S., M.I.T.; Ph.D., Stanford University (1997)
- OGHENEKOME ONOKPISE****, Professor of Agricultural Sciences-B.S., University of Ile; M.S., University of Guelph; Ph.D., Iowa State University (1986)
- ULOMA D. ONUBOGU**, Instructor of Nursing-B.S.C., University of Ibadan; M.S.N./M.S.Ed., Florida A&M University (2003)

***Indicates deceased

**Indicates graduate faculty

*On early retirement

- EDITH ONYEOZILI****, *Assistant Professor of Chemistry*, B.Sc., M.Sc. University of Nigeria, M.S. Florida A & M University, Ph.D. Michigan State University (2006)
- JUAN CARLOS ORDONEZ**, *Assistant Professor of Mechanical Engineering-Ph.D.*, Duke University (2003)
- EBENEZER ORIAKU**, *Associate Professor of Pharmacology-B.S.*, M.S., Ph.D., Florida A&M University (1993)
- WILLIAM ORR**, *Principal/Associate Professor University School - B.A.*, Albany State College; M.Ed., Rollins College (1992)
- JOHNSTON OSAGIE**, *Assistant Professor of Finance, School of Business and Industry-B.A., MBA and Ph.D.*, United States International University (2000)
- ENN E. OTS****, *Associate Professor of Architecture-B.E.S.*, M.Arch., The University of Manitoba (1980)
- ALLEZO N. OWENS**, *Assistant Professor of Religion-B.A.*, Florida A&M University; J.D., Emory University School of Law; M.D., Candler School of Theology
- GREGORY B. OWENS**, *Commander/Associate Professor of Naval Science-B.S.*, Savannah State College; M.A., Naval Postgraduate School (1996)
- MARCIA A. OWENS**, *Assistant Professor, Environmental Sciences Institute-B.S.*, Jackson State University; J.D., Emory School of Law; Ph.D., Emory University (2000)
- YAW A. OWUSU****, *Associate Professor of Industrial & Manufacturing Engineering-B.S.*, University of Rhode Island; M.S., Ph.D., Pennsylvania State University (1987)
- ARLEEN PABÓN**, *Professor of Architecture-B.Eniv.Design, M.Arch.*, University of Puerto Rico, Ph.D., Northwestern University, J.D., University of Puerto Rico (1999)
- DONALD E. PALM****, *Associate Professor of Pharmacology-B.A.*, Lincoln University, Ph.D., Pennsylvania State University (1995)
- SUNIL K. PANCHOLY****, *Associate Dean, Research and Technology /Professor of Agricultural Sciences-B.S.*, University Udaipur, India; M.S., Ph.D., Oklahoma State University (1977)
- ANANT PARAVASTU**, *Assistant Professor of Chemical & Biomedical Engineering-Ph.D.*, University of California Berkeley (2007)
- HYUN-WOO PARK**, *Assistant Professor of Entomology-B.S.*, M.S., Seoul National University, Korea; Ph.D., University of California, Riverside (2005)
- SUSAN PARRAMORE**, *Assistant Professor, University High School-B.A.*, Winthrop College; M.Ed., Florida A&M University (1984)
- LONGINEU PARSONS**, *Assistant Professor of Music-B.S.*, Florida A&M University; N.S., University of Florida (1998)
- GARY R. PAUL****, *Associate Professor of Political Science-B.S.*, Florida A&M University; M.A., Northwestern University; Ph.D., University of Florida (1992)
- HARRIETT PAUL**, *Director/Instructor of Agricultural Sciences - B.S.*, M.A.A.S., Florida A&M University (1983)
- SUSAN PENNYPACKER**, *University School University Instructor and 3rd Grade Instructor - B.A.*, Pennsylvania State; M.S., Florida State University (1993)
- LEROY PERNELL**, *Dean/Professor of Law-B.A.*, Franklin and Marshall College; J.D., Ohio State University (2008)
- REGINALD J. PERRY****, *Associate Dean/Professor of Electrical & Computer Engineering-B.S.*, M.S., Ph.D., Georgia Institute of Technology (1989)
- ROBIN PERRY****, *Associate Professor of Social Work-B.S.W.*, M.S.W., University of Windsor; Ph.D., University of California at Berkeley (2006)
- MARTHA PERRYMAN****, *Assistant Professor of Health Care Management-B.A.*, M.B.A., Ph.D., University of Alabama, Birmingham (2003)
- NARAYAN PERSAUD**, *Professor of Sociology/Criminal Justice - B.A.*, Inter-American University of Puerto Rico; M.A., Ohio University; Ph.D., Florida State University (1985)
- MANUEL L. PESCADOR**, *Professor of Agricultural Sciences-B.S.*, University of Philippines; M.S., Ph.D., Florida State University (1977)
- JOHN L. PETERSEN**, *Associate Professor of Agricultural Sciences-B.S.*, Dickinson College; M.S., Columbia University; Ph.D., University of Notre Dame (1998)
- SIMONE PETERSON-HRUDA****, *Associate Professor of Mechanical Engineering - B.S.*, Rensselaer Polytechnical University; M.S., Ph.D., MIT (1994)
- PHILLIP PETWAY**, *Instructor, Division of Agricultural Sciences-B.S.*, Fort Valley State College; M.S., University of Georgia (1997)
- RICHARD W. PEYTON**, *Assistant Professor of Humanities-B.A.*, Occidental College; M.A., California State University at Los Angeles; Ph.D., Florida State University (1987)
- CARSWELLA PHILLIPS**, *Instructor of Nursing - B.S.N.*, M.S.N., Florida A&M University (2006)
- BOBBY R. PHILLS**, *Professor of Agricultural Sciences - B.S.*, Southern University and A&M College; M.S., Ph.D., Louisiana State University (1997)
- JOSEPH J. PIGNATIELLO, JR.****, *Associate Professor of Industrial & Manufacturing Engineering-Ph.D.*, Ohio State University (1998)
- WEI-CHOLL VIRGIL PING**, *Professor of Civil & Environmental Engineering-B.S.*, National Taiwan University; M.S., Ph.D., The University of Texas at Austin (1990)
- GITA WIJESMGHE PITTER**, *Assistant Vice President, Academic Affairs-B.S.*, Western College; M.S., Ph.D., Florida State University (1979)
- GLORIA POOLE****, *Professor of Educational Leadership - B.S.*, M.S., National University of Panama; M.S., Ph.D., Florida State University (1994)
- MARY POPE-GRATTAN****, *Assistant Professor of Physical Therapy-B.S.*, St. Frances College; M.S., Ohio State University; Ph.D., University of Michigan (1993)
- DEIDRE POWELL**, *Assistant Professor of Reading-B.S.*, Florida A&M University; M.Ed., Ph.D., Florida State University (1990)
- PATRICIA GREEN POWELL**, *Associate Professor of Educational Leadership-B.S.*, Florida A&M University; M.S., Ph.D., Florida State University (2003)
- MATTHEW POWERS**, *Assistant Professor of Landscape Architecture-BSLA*, University of West Virginia; MLA, Ph.D., Virginia Polytechnic Institute and State University (2003)
- PHEBE PONDRAS**, *Interim Library Director, College of Law-B.A.*, University of New Orleans; J.D., Southern University Law Center; M.L.S., Louisiana State University (2006)
- BHANU PRASAD****, *Assistant Professor of Computer & Information Sciences-M.S.*, Andhra University; Ph.D., Indian Institute of Technology, Madras (2001)
- LEON PROSPER**, *Instructor, Electronic Engineering Technology-B.S.*, M.S., Florida A&M University (2003)
- THOMAS PUGH****, *Associate Professor of Architecture-B.Design*, M.Arch., University of Florida (1987)
- KAREN QUARLES-LEWIS**, *Faculty Administrator-B.S.* Kentucky State University, M.S. Florida State University. (1997)
- SALEH M.M. RAHMAN**, *Assistant Professor of Public Health-M.B.B.S.*, Sir Salimullah Medical College; M.P.H., Harvard University; Ph.D., University of Alabama-Birmingham (2004)
- SUBRAMANIAN RAMAKRISHNAN****, *Assistant Professor of Chemical & Biomedical Engineering-Ph.D.*, University of Illinois Urbana (2005)
- MICHELLE RAMBO-RODDENBERRY**, *Assistant Professor of Civil & Environmental Engineering-Ph.D.*, Virginia Polytechnic Institute and State University (2006)
- JOSEPH P. RAMSEY****, *Professor of Health, Physical Education and Recreation - B.S.*, Florida A&M University; M.A., University of Florida; Ph.D., Florida State University (1997)
- JOHANNA RAMOS**, *Assistant Parofessor of Spanish-B.A.*, M.A., Ph.D., Florida State University (1997)
- SHAWN A. RANSFORD**, *Assistant Professor of Military Science-B.S.*, Indiana University/Purdue University @ Indianapolis (199)
- LEONARD RAPPA**, *Associate Professor of Pharmacy Practice, Pharm.D.*, Nova Southeastern University (1995)
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FAYE A. BOYCE, Assistant General Counsel-J.D., Florida State University (1997)

MARY R. BROOKS, Coordinator, Office of Development-M.Ed., Tuskegee University (1997)

GLORY BROWN, Coordinator, Research Programs/Services-B.S., Florida A&M University (1985)

JUNIOUS D. BROWN, II, Director, Student Affairs-Ed.D., University of Florida (1986)

MICHAEL E. BROWN, Audit Director, Office of Inspector General-B.S., M.A.S.S., Florida A&M University (2003)

WILLIAM E. BROWN, JR., Coordinator, Business and Financial/Auxiliary Services-B.S., Florida A&M University (1998)

KAY F. BRYANT, Resident Advisor to Students-B.A., Knoxville College (1994)

MARCUS D. BRYANT, Coordinator, Administrative Services (1996)

MATTIE W. BRYANT, Coordinator, Physical Plant-B.S., Florida A&M University (1979)

SANDRA M. BRYANT, Coordinator, Business and Financial/Auxiliary Services-B.S., Florida A&M University (1973)

BEVERLY E. BURNETT, Assistant Athletic Coach-B.S., Florida State University (1994)

MICHAEL M. CAMPBELL, Interim Director of Academic Support Services, School of Business and Industry-B.S., M.S., Florida A&M University; Ph.D., Nova Southeastern University (2001)

ROBERT D. CARROLL, JR., Associate Director, Student Affairs-B.S., Florida A&M University (1982)

ROSELL R. CASWELL, Director, Student Affairs-M.Ed., Florida A&M University (1964)

MONTRI CHAISAKUL, Specialist, Computer Systems Control-MCS, Florida Atlantic University (1997)

CHERRY A. CHANEY, Coordinator, Intercollegiate Athletics-B.S., Florida A&M University (1983)

ALICE CHARLES-WILSON, Coordinator, Educational/Training Programs (1996)

MICHAEL A. CLAYTON, Director, Boosters Club, Inc.-M.Ed., Florida A&M University (1977)

JAMES COLEMAN, Acting Assistant Director-A.A., Central Texas College (2000)

RALPH G. COLEMAN, JR., Associate Director, Student Affairs-B.S., Florida A&M University (1986)

AGNES COPPIN, Coordinator, Education/Training Programs-B.S., Florida A&M University (1983)

DÕANDREA C. COTTON, Coordinator, Accounting-B.S., M.Ed., Florida A&M University (1993)

BARBARA R. COX, Director, Admissions/Registration-M.S., Florida A&M University (1971)

CARMELESA CROSBY-HARLEY, Coordinator, Educational/Training Programs-M.A.S.S., Florida A&M University (2002)

CHHAGAN R. DALSANIA, Coordinator, Physical Plant-B.E., Likhdirji Engineering College (1975)

CHEREY Y. DANIELS, *Director of Student Affairs, School of Nursing-B.S., M.Ed., Florida A&M University (1998)*

***Indicates deceased

**Indicates graduate faculty

*On early retirement

- JOYCE DAVIS**, Coordinator, Accounting-B.S., Florida A&M University (1974)
- DELORES A. DEAN**, Director, Career Development Services-M.S., Florida State University; Ph.D., Florida A&M University (1990)
- VERONICA DOTTERY-WIGGINS**, Head Athletic Coach-M.S., Florida A&M University (1992)
- WAYNE A. DUNWOODY**, Coordinator, Computer Systems Control-B.S., Florida A&M University (1997)
- LESHI DUPREE**, Coordinator, Student Affairs-M.Ed., Florida A&M University (1992)
- JOHN W. EARST**, Associate Director, Safety & Security-B.S., Florida A&M University (1994)
- HELEN A. EASON**, Coordinator, Administrative Services-MBA, Nova University (1994)
- STEPHANY R. FALL**, Acting Director, Purchasing-B.S., Florida A&M University (2002)
- GWENDOLYN K. FILLIAU**, Coordinator-B.S., M.A.S.S., Florida A&M University (1981)
- CORNELIUS A. FLOYD**, Coordinator, Student Affairs-M.Ed., Florida A&M University (1993)
- CURTIS A. FORD**, Senior Accountant, Alumni Affairs-B.S., Florida A&M University (1978)
- HAROLD W. FORD**, Coordinator, Student Affairs-B.S., Millersville State College; M.S.W., Temple University (1989)
- RICHARD FORD**, Lab Coordinator-B.S., Florida A&M University (1982)
- MARGRETTE FORTUNE**, Pharmacist-Pharm.D., Florida A&M University (2002)
- BETTY GAINOUS**, Resident Advisor to Students-M.Ed., Florida A&M University (1979)
- CARRIE M. GAVIN**, Director, University Equal Opportunity Programs-M.A., Florida A&M University (1986)
- KIRK GAVIN**, *Director of Institutional Research*-B.S., M.Ed., Florida A&M University, Ed.D., Nova Southeastern University (1999)
- CARLA A. GIBSON**, Coordinator, Physical Plant-B.S., Florida A&M University (1994)
- SYNDY GILLIAM-ULEE**, Academic Advisor, School of General Studies-B.S., Florida A&M University
- RONALD A. GILMORE**, Coordinator of Telecommunications-AEET, Devry Institute of Technology (1998)
- MILDRED GRAHAM**, Director, Development and Alumni Affairs-B.S., Florida A&M University; M.B.A., Webster University (2002)
- LISA M. GRANT**, Placement Coordinator of Field Experiences-B.S., M.Ed., Florida A&M University (1990)
- BEULAH B. GREGORY**, Coordinator, High School and/or Community College Relations-B.S., Florida A&M University (1997)
- CALVIN G. HALL**, Director, Multipurpose Facility-B.S., Florida A&M University (1987)
- MARY D. HALL**, Director High School and Community College Relations, Journalism and Graphic Communication-B.S., Florida A&M University; M.S.P.A., Florida State University (1980)
- TAMMY H. HAMLET**, Director of Special Events-B.S., Florida A&M University (1992)
- JOAN P. HART**, Internal Auditor/Investigator, Office of Inspector General-B.S., M.B.A., Florida A&M University (2002)
- FLOZELL HAYNES**, Coordinator, Academic Programs-M.S., Florida A&M University (1984)
- HAROLD HENDERSON, JR.**, Executive Director, School of General Studies-M.B.A., Florida State University (1993)
- CYNTHIA S. HENRY**, Coordinator of Budgeting, Environmental Sciences Institute-B.S., Florida A&M University (1975)
- ROSE HENDERSON**, Coordinator of Academic Support Services, School of Business and Industry-B.S., University of Maryland (2006)
- IVENELL HEWITT**, Coordinator, Accounting (1985)
- JACQUELINE HIGHTOWER**, Coordinator of Academic/Student Support Services, Environmental Sciences Institute-B.S., Florida A&M University; M.S., Florida State University (2004)
- DEREK M. HILL**, Assistant Athletic Coach-B.S., Morris Brown College (1997)
- CHARLES W. HINES, SR.**, Assistant Director, Physical Plant-B.S., Florida A&M University (1998)
- ERIC HINSON**, Academic Advisor, School of General Studies-B.S., Florida A&M University
- VIVIAN L. HOBBS**, Director of SACS-B.A., Florida A&M University; M.A., Ph.D., Florida State University (1981)
- DELOIS HOLLINGER**, *Coordinator of Administrative Services in Research*-B.S., Troy State University (1988)
- ALVIN HOLLINS, JR.**, Assistant Director, Intercollegiate Athletics-B.A., Southern University (1979)
- SAMUEL J. HOUSTON**, Director, Facilities Planning-B.A., Southern University (1987)
- KAYLOR T. HOWARD**, Resident Advisor to Students-M.Ed., Florida A&M University (1997)
- CLYDIE HUBBARD**, Associate Director, Human Resources/Personnel Relations-B.S., Florida A&M University (1991)
- DELANDREA HUMOSE**, Coordinator, Administrative Services-B.A., University of Miami (1992)
- SAMUEL HUNTER**, Coordinator, High School and/or Community College Relations-B.S., Florida A&M University (1997)
- RICHARD F. HUTCHINSON**, Coordinator, Physical Plant-M.A., Western Kentucky University (2001)
- SAUNDRA R. INGE**, Associate Director, Student Financial Aid-B.S., Tennessee State University (1975)
- GLORIA JAMES**, Coordinator of Academic Support Services, B.S., University of South Carolina (1997)
- MICHAEL A. JAMES**, University Registrar-M.Ed., Florida A&M University (1984)
- JESSENA JERGER**, Coordinator, Student Financial Aid-B.A., Florida A&M University (1973)
- GILDA M. JOHNSON**, Coordinator of Administrative Services-B.S., M.A., Southern University A&M College (1998)
- JUANITA JOHNSON**, Coordinator, Accounting-B.S., Florida State University (1988)
- MERLENE D. JOHNSON**, Assistant Director, Office of Inspector General-B.S., M.A., Florida A&M University (1986)
- SHIRLEY JOHNSON**, Coordinator Academic Support Services-B.A., Jarvis Christian College (1971)
- WILLIAM G. JOHNSON**, Resident Advisor to Students-M.Ed., Florida A&M University (1997)
- ANN JONES**, Academic Advisor, School of General Studies-B.S., M.S.W., Florida A&M University
- BARBARA C. JONES**, Executive Assistant -M.B.E., Florida A&M University (1987)
- JEAN JONES**, Coordinator, Physical Plant (1990)
- KENDALL D. JONES**, Director, Physical Plant-B.S., Physical Plant (1988)
- TELISA JONES**, Assistant Director of Telecommunications, B.S., Fort Valley State College (1985)
- TERRY A. JONES**, Assistant Athletic Coach-B.S., University of Central Oklahoma (1994)
- BERNARD KELLY**, Assistant Director, University Housing-M.S., Florida A&M University (1988)
- JOHN KIMBERL**, Building Code Administrator (2002)
- HENRY L. KIRBY**, Associate Vice President, Student Affairs-J.D., Florida State University (1980)
- JOHN M. KIRBY**, Director, Parking Services-B.S., Florida A&M University (1991)
- CARLA D. KNIGHT**, Coordinator, Academic Programs-B.S., Florida A&M University (1989)
- MARY M. KNIGHT**, Placement Coordinator of Clinical Practice-Southwest Georgia Technical College/Computer Specialist (2001)

- MOEUB LANH**, Coordinator, Human Resources/Personnel Relations-B.S., Florida State University (2002)
- VERA LEE-VALARD**, *Coordinator of Administrative Affairs, School of Nursing-B.S., M.Ed.*, Florida A&M University (2001)
- DEBORA LEWIS**, Coordinator, Computer Applications-B.S.; M.Ed., Florida A&M University (2001)
- KAREN LEWIS**, Administrator, Student Service, SBI Academic Programs-B.S., Kentucky State University; M.S., Florida State University
- BARBARA J. LIPROT**, Coordinator, Student Affairs-B.S., Troy State University (1994)
- FRANCES S. LOGAN**, Director, Student Affairs-M.Ed., Florida A&M University (1991)
- DARREN MACFARLANE**, Academic Advisor, School of General Studies-B.S., M.S.W., Florida State University (2006)
- RONNIE E. MACKEY**, Coordinator, Student Affairs-B.S., Florida A&M University (1995)
- JOYCE N. MANN**, Director, University Budgets-B.S., Florida A&M University (1986)
- WONDA MARTIN**, Coordinator, Administrative Services-M.Ed., Florida A&M University (1992)
- EUGENE MATTHEWS**, Academic Advisor, School of General Studies-B.S., Edward Waters College; M.A., Webber University (2006)
- JOHNNY MCCASKILL**, Academic Advisor, School of General Studies-B.S., M.B.A., Florida A&M University (2006)
- PAUL MCKAY**, Coordinator, Radiation-B.S., Florida A&M University (1987)
- VERNELL N. MCCRAY**, Coordinator, Academic Programs-M.Ed., Florida A&M University (1972)
- WILLIAM M. MCCRAY**, Director, Student Affairs-M.Ed., Florida Atlantic University (1979)
- STEPHANIE E. MCEWING**, Coordinator, Student Financial Aid-B.S., Florida A&M University (1991)
- DEIDRE L. MCROY**, Coordinator, Administrative Services-MBA, Florida A&M University (1994)
- SCOTT R. MENARD**, Coordinator, Computer Applications-B.S., University of Florida (1981)
- KEITH A. MILES**, Director, WANM-FM-B.S.J., Florida A&M University (2001)
- CARLOTTA MITCHELL**, Coordinator, Title III Programs-B.S., M.A.S.S., Florida A&M University (1991)
- ALEX MOORE**, Associate Dean for Administration, School of Business and Industry-Ph.D., The Ohio State University (2007)
- DONALD J. MOORE**, Coordinator, High School and/or Community College Relations-B.S., Florida A&M University (1988)
- JERRY L. MOORE, JR.**, Coordinator, Accounting-B.S., Florida A&M University (2002)
- JAMES L. MORAN**, Coordinator, Advancement, Alumni Affairs-M.Ed., Florida A&M University; Ph.D., Truth Bible College and Seminary (1986)
- ORA MUKES**, Coordinator of Academic Support Services, Environmental Sciences Institute-B.S., Mississippi Valley State University (1976)
- FONDA B. MURRAY**, Assistant Director, Student Financial Aid-M.S., Florida A&M University (1989)
- REVA B. MYERS**, Director, Research Programs/ Services-M.A., 1987
- GERALDINE NAPPA**, College of Law Registrar-B.S., Eastern Connecticut State University; M.A., University of Connecticut (2008)
- JOHNNIE M. NILES**, Coordinator, High School and/or Community College Relations-B.S., Florida A&M University (1976)
- ROBERT F. O'KELLEY**, Associate Controller-B.S., Florida State University (1978)
- ANNETTE OLIVER**, Coordinator, Continuing Education-B.S., Florida State University; M.Ed., Florida A&M University
- AGATHA U. ONWUNLI**, Assistant University Registrar-Ed.D., Florida State University (1988)
- CHUKS ONWUNLI**, Assistant Director, Facilities Planning-M.A., Tuskegee University (1987)
- BARBARA OTI**, Academic Advisor, School of General Studies-B.A., Brookly College; M.A., Adelphi University (2004)
- KWADWO OWUSU**-Aduemiri, Assistant Director, Research/Program Services-Ph.D., University of Wisconsin (1995)
- RAYMOND L. PANDLEY**, Coordinator, Student Affairs-M.Ed., Florida A&M University (1995)
- LEE M. PARKER**, *Coordinator, Administrative Services-B.S.*, Florida A&M University (2004)
- THADDEUS PARKER**, Coordinator, Physical Plant (1996)
- JACQUELINE Y. PERKINS**, Internship Director-B.S., Florida A&M University (1991)
- JOYCE PETERSIDE**, Director, Leadership/Title III Programs-B.S., M.A., Syracuse University (1999)
- SYLVIA G. PETTIES**, Coordinator, Administrative Services-B.S., Florida A&M University (1984)
- GITA WIJESINGHE PITTER**, Assistant Vice President, Academic Affairs-B.S., Western College; M.S., Ph.D., Florida State University (1979)
- JAMES A. PLATT, JR.**, Resident Advisor to Students-M.S., Florida A&M University (1991)
- KEITH L. POPE**, Coordinator, University Relations/Public Affairs-B.S., Florida A&M University (2007)
- PHEBE POYDRAS**, Assistant Law Librarian for Public Services-B.A., University of New Orleans; J.D., Southern Law Center; M.L.S., Louisiana State University
- GLYNDELL B. PRESLEY**, Director of Publications, University Relations-B.S.; M.S., Florida A&M University (1998)
- JUANITA F. RACKLEY**, Coordinator, Human Resources/Personnel Relations-M.S., Florida A&M University (1982)
- RHONDA F. REED**, Assistant Controller-B.S., Florida A&M University (1996)
- PAMELA E. REILLY**, Coordinator, Intercollegiate Athletics-B.S., Florida A&M University (1988)
- ANGIE E. ROGERS**, Coordinator, Budgeting-B.S., Florida (1989)
- MARTHA A. ROSS**, Pharmacist-B.S., Florida A&M University (1992)
- MAE R. SANDERS**, Coordinator, Title III Programs (1990)
- SHARON P. SAUNDERS**, Executive Assistant for Communications-M.S., Florida A&M University (2007)
- GREGORY K. SCHMIDT**, Coordinator, Accounting-B.A., Juniata College (1993)
- LAUREATTE A. SCOTT**, Assistant Director, Physical Plant-B.S., Florida A&M University (1993)
- VINOD K. SHARMA**, Assistant Vice President, Administrative Affairs-M.A., University of Rajasthan (1973)
- BARI LEE SHEPARD**, Environmental Coordinator-B.S.E.H.S., Florida A&M University (1992)
- MARIE B. SHETTY**, Associate Controller-B.S., Florida State University (1977)
- SHANKAR A. SHETTY**, Director, Student Health Services-M.D., Bangalore Medical College (1991)
- AUDREY L. SIMMONS**, Executive Assistant to the Vice President-B.S., M.A.S.S., Florida A&M University (1981)
- MICHAEL D. SLAGLE**, Coordinator, Physical Plant-A.A., Green River Community College (1999)
- GWENDOLYN SLATEN**, Coordinator, Business and Financial/Auxiliary Services-B.S., Florida A&M University (1995)
- CLAIRE SMITH**, Coordinator of Summer Programs, School of General Studies-B.A., Florida A&M University (1979)
- MICHAEL L. SMITH**, Director, Business and Financial Auxiliary Services-B.S., Florida A&M University (1991)
- LINDA SOBEY**, Cataloging Librarian-B.A., University of Central Florida; M.A., University of Central Florida; M.L.S., University of Southern Florida
- EVELYN C. SPRADLEY**, Coordinator of Administrative Services, Environmental Sciences Institute - B.S., M.Ed., Florida A&M University (1998)

VERONICA J. STOKES, Coordinator, Accounting-B.S., Florida A&M University (1993)

ACHARA STONE, Circulation Librarian-B.A., Chulalongkorn University; M.L.S., University of Hawaii

WILLIE STUBBS, Coordinator of Environmental Health & Safety, Environmental Sciences Institute-B.S., Florida A&M University (1973)

JEROME SWAINE, Coordinator, Physical Plant-B.S., Nova University (2003)

JOAN R. SWEET, Coordinator, Cooperative Education-M.Ed., Florida A&M University (1990)

ETHEL H. TAYLOR, Resident Advisor to Students-M.S., Florida A&M University (1966)

HAZEL TAYLOR, Coordinator, Research Programs, Environmental Sciences Institute-B.S. Fort Valley State University, M.S., Tulane and Clark Atlanta University (1991)

KENT T. TAYLOR, Interim Vice President for University Relations/Public Affairs-M.A.S., University of Illinois (1987)

PATRICIA P. THOMPSON, Assistant Director, Human Resources/Personnel Relations-B.A., Eastern Connecticut State College (1976)

GEORGE H. THOMPSON, JR., Athletic Trainer-B.S., Florida A&M University (1954)

JOSEPH W. THREADGILL, Resident Advisor to Students-M.Ed., New York University (1995)

PAMELA TOLSON, Director of Media Relations (2007)

MATTIE D. TRAWICK, Coordinator, Student Affairs-B.S., Florida A&M University (1984)

TANIO TRIFONOV, Head Athletic Coach-B.S., National Sports Academy (1997)

MISTY TRUNNELL, Academic Advisor, School of General Studies-B.A., Tougaloo College; M.S., Alabama A&M University (2006)

ROYTUCKER, Coordinator, Research Programs/Services-M.S., Florida State University (1994)

DEBORAH D. TWITTY, Coordinator, Human Resources/Personnel Relations-B.S., Florida A&M University (1999)

JAWORSKI R. VANCE, Internal Auditor/Investigator, Office of Inspector General-B.S., Florida A&M University (2002)

JEFFERSON WALKER, Assistant Director, University Housing-M.Ed., Tuskegee Institute (1986)

WAYNE WALKER, Coordinator of Budgeting, CESTA – B.S., Florida State University; M.B.A., University of West Florida (2000)

JACQUELYN L. WALLACE, Resident Advisor to Students-B.S., North Carolina A&T University (1994)

LAVERNE A. WASHINGTON, Coordinator, Administrative Services-B.S., Florida A&M University (1973)

MICHAEL WATSON, Coordinator, Business and Financial/Auxiliary Services (2003)

PHYLLIS NOTTAGE WATSON, Interim Controller-M.B.A., Nova University (1998)

SHEILA A. WESLEY, Executive Assistant-B.S., University of D.C. (1997)

SANDRA WESSON, Coordinator, Accounting-B.A., Rice University (1998)

CYNTHIA WILKERSON-GAINES, Coordinator, Human Resources/Personnel Relations-M.Ed., Florida A&M University (1978)

ALICE W. WILLIAMS, Coordinator of Budgeting-B.S., Florida A&M University (1997)

CARMEN WILLIAMS, Coordinator, Student Affairs-B.A., University of South Florida (2003)

COSTELL WILLIAMS, Academic Advisor, School of General Studies-B.S., Florida A&M University (1998)

IVEY WILLIAMS, Academic Advisor/Coordinator, School of General Studies-B.S., Florida State University (1990)

JIM WILLIAMS, Coordinator, Accounting-B.S., Florida A&M University (1992)

MICHELLE WILLIAMS, Coordinator of Research and Program Services, Environmental Sciences Institute-B.S., MPH, Florida A&M University (2002)

***Indicates deceased

**Indicates graduate faculty

*On early retirement

JACQUELYN J. WOODS, Coordinator, Human Resources/Personnel Relations-M.Ed., Florida A&M University (1985)

GARY YESSIN, Reference Librarian-B.A., University of Florida; J.D., Stanford; M.L.S., Florida State University

VERRETTA S. YOUNG, Coordinator, Administrative Services-B.S., M.Ed., Florida A&M University (1989)

IRIS YOUNG-CLARK, Coordinator of Residencies, School of Business and Industries-B.S.; M.A.S.S., Florida A&M University (2000)

Emeritus Status

OSIEFIELD ANDERSON, Professor of Mathematics-B.S., Fort Valley State; M.S., Atlanta University; Ph.D., Ohio State University (1958)

AHMED ASKER***, Professor Emeritus, Professor of Industrial Pharmacy-B.S., University of Alexandria Egypt; Ph.D., University of Florida (1979)

JOSEPH C. AWKARD, JR.***, Professor Emeritus, Professor and Chairman, College of Arts and Sciences, Area of Psychology-A.B., M.S., Virginia State College; Ed. D., University of Virginia.

JUANITA C. BAILEY*, Professor Emeritus, Professor of Social Studies Education -B.S., Prairie View A&M College; M.S., Florida A&M; Ph.D., Florida State University (1957)

BEVERLY A.H. BARBER, Professor Emeritus, Professor of Health, Physical Education and Recreation - B.A., Wayne State University; M.A., University of Michigan; Professional Diploma, Teachers College; Ph.D., Florida State University (1960)

HERBERT C. BEACHAM**, Professor Emeritus, Professor of Vocational Education - B.S., M.Ed., Florida A&M University; Ed.D., University of Missouri (1959)

JACQUELINE B. BECK, Dean/Professor, School of Allied Health Sciences-B.S., Dillard University (R.N.); M.S., Indiana University; Ed.D., University of Florida (1958)

JOHNIE F. BLAKE, Professor Emeritus, Assistant Professor of English, College of Arts and Sciences-A.B., Arkansas A M&N College; M.A., Indiana University; Further study, East Texas State University (1950)

ROBERT BRADFORD, Professor Emeritus, Professor of Agricultural Sciences-B.S., Alabama A&M University; M.S., Ph.D., Pennsylvania State University (1981)

ROBERT N. BRASWELL**, *Professor Emeritus* of Industrial & Manufacturing-Ph.D., Oklahoma State University (1964)

JAMES L. BRUTON***, Professor Emeritus, Director, Division of Graphic Arts/Professor of Graphic Arts, School of Journalism Graphics Communication-B.S., Florida A&M University; M.S., New York University (1946)

EUNICE J. BURGESS***, Dean-Emeritus, School of Nursing/Professor of Nursing-B.S., Florida A&M University (R.N.); M.A., New York University; Ed.D., Nova University (1954)

GEORGE BUZYNA**, *Professor Emeritus* of Mechanical Engineering-Ph.D., Yale University (1967)

WILLIAM H. CASTINE**, Professor Emeritus, Professor of Secondary Education and Foundations – B.S., M.Ed., Ph.D., University of South Carolina (1970)

THEODORE B. COOPER***, Professor Emeritus, Professor of Secondary Education/Foundation, College Education-B.S., Alabama State College; M.S., Ed.D., Indiana University (1949)

ELVIN J. DANTIN**, Professor Emeritus, Professor of Civil Engineering - B.S., Valparaiso University; M.S., Case Institute of Technology; Ph.D., Cornell (1986)

RONALD O. DAVIS*, Professor Emeritus, Professor of Theatre – B.S., M.S., Tennessee State University; Ph.D., Florida State University (1985)

JAMES L. DAY**, Professor Emeritus, Professor of Pharmaceutical Chemistry-B.S., Ohio Northern University; M.S., Ph.D., Ohio State University (1968)

JOHINDA S. DHILLON, Professor Emeritus, Professor of Agricultural Sciences, College of Arts and Sciences-B.Sc., B.T., Dunab University; M.Ed., Rajasthan University; M.Sc., Punjab Agril University; Ph.D., Cornell University (1970)

ANDREW A. DZURIK**, *Professor Emeritus* of Civil & Environmental Engineering-B.S., Valparaiso University; M.S., Case Institute of Technology; Ph.D., Cornell University (1986)

ELINOR ELLIS**, *Professor Emeritus, Professor of Elementary Education*-B.S., Tuskegee University; M.S.L.S., Atlanta University; Ph.D., Florida State University (1972)

LEE E. EVANS***, *Professor Emeritus, Assistant Dean and Professor of the College of Engineering Sciences, Technology and Agriculture* - B.S., Alcorn A&M College; M.S., Iowa State University; Ph.D., University of Illinois

VIRDEN EVANS**, *Professor Emeritus, Professor of Secondary Education*; Professor of Physical Education - B.S., Tuskegee Institute; M.S., Ph.D., Indiana University; Ed.D., Northwestern University

THOMAS J. FITZGERALD**, *Professor Emeritus, Professor of Pharmacology*-B.S., Union University; M.S., Ph.D., Ohio State University; R.Ph. (1973)

CLINITA A. FORD, *Professor Emeritus, Coordinator of Title III Programs/Professor of Agricultural Science, College of Engineering Sciences, Technology & Agriculture*-B.S., Lincoln University; M.S., Teachers College, Columbia University; Ph.D., Kansas State University (1949)

WILLIAM P. FOSTER, *Professor of Music*-B.M.E., University of Kansas; M.A., Wayne State University; Ed.D., Teachers College, Columbia University (1946)

LARRY A. FRIEDER**, *Professor of Finance*-B.B.A., M.B.A., University of Michigan; Ph.D., Arizona State University (1972)

ALONZO S. GAITHER***, *Athletic Director-Emeritus/Professor of Health, Physical Education, and Recreation/Athletic Director*-A.B., Knoxville College; M.A., Ohio State University; LL.D., Knoxville College; further study, Ohio State University; Yale University (1937)

ANNE R. GAYLES-FELTON**, *Professor Emeritus, Professor of Secondary Education Foundations*-B.S., Fort Valley State College; M.A., Columbia University; Professional Diploma, Columbia University; Ed.D., Indiana University (1957)

AJET S. GILL, *Professor Emeritus, Professor of Engineering Technology* - B.A., B.Sc., Punjab University, India; M.A.Sc., Ph.D., University of Toronto (1975)

GEORGE W. GORE, JR., *President-Emeritus****-A.B., DePauw University; graduate work, University of Chicago; Ed.M., Harvard University; Ph.D., Columbia University (1950)

MARK B. GREENFIELD, *Professor Emeritus, Professor of Physics* - B.S., M.A.C.T., Ph.D., University of Tennessee (1973)

JAMES W. HASKINS, *Professor Emeritus, Professor of Journalism, School of Journalism and Graphic Communication*-B.A., Bowling Green State University; M.S., University of Pennsylvania (1980)

JULIUS L. HEINIS**, *Professor Emeritus, Professor of Agricultural Sciences* - Ing.Agr. Diploma (M.S.), Swiss Federal Institute of Technology; Ph.D., Oregon State College (1967)

WILLIAM E. H. HOWARD, *Professor Emeritus, Professor of Political Science, College of Arts and Sciences*-B.S., West Virginia State College; M.A., Sc., Institute of Social Studies; Ph.D., Free University of Amsterdam (1956)

THOMAS A. JACKSON**, *Professor Emeritus, Professor of Educational Leadership* - B.S., M.Ed., Tennessee State University; Ed.D., University of Tennessee (1962)

ADELBERT C. JONES**, *Professor of Secondary Education and Foundations*-B.S., M.S., Ph.D., Michigan State University (1973)

COSTA KITTLES***, *Associate Professor of Health, Physical Education, and Recreation*-B.S., Florida A&M University; M.A., Ohio State University (1952)

SURENDAR S. LAMBA**, *Professor Emeritus, Professor of Pharmacognosy*-B.S.C., Agra University; B.Pharm., Rajastjhan University; M.Pharm., Punjab University; M.S., University of Nebraska; Ph.D., University of Colorado (1966)

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Appendix A

Addendum for the University Calendar (2008-2010)

ACTIVITY GUIDE

OFFICIAL CALENDAR

PHARMACY Rotation/Clerkship "ONLY"

LAW SCHOOL

FALL SEMESTER, 2008

Web Registration
 Last Day to apply for admissions
 Non-Degree Seeking Student Application Due
 In-State Residency Classification Period
 Early Registration
 Residence Halls Open
 New Student Orientation
 Regular Registration
 Late Registration & Add/Drop Period
 Graduation Applications Due to Advisors
 1st Class Meeting
 State Employee/Non-Degree Seeking Student Registration
 Last day to pay 100% of ALL fees
Holiday (Labor Day) Classes Suspended
 25% Refund for withdrawal from Univ.
 Graduation applications due from Deans
 Last Day to Withdraw: Course/University
 Last Day for Instructors to submit "I" Change of grade
Holiday (Veterans Day) Classes Suspended
 Legislative Monday
Holiday (Thanksgiving) Classes Suspended
 Last day of classes
 Final Examinations
 Reading Period
 Commencement Leon County Civic Center @ 6:00 p.m.
 Residence Halls Close (9:00 a. m.)
 Grades due by 12:00 p.m.

April 19-August 29
 May 16
 August 1
 July 7 – August 8
 April 7-11
 August 16
 August 17- 18
 August 18-22
 August 23 – 29
 August 25
 August 25
 August 27
 August 29
September 1
 September 19
 September 22
 September 26
 October 24
November 11
 N/A
November 27 – 28
 December 5
 December 8 – 12
 N/A
 December 12
 December 13
 December 15

April 19-August 29
 May 16
 August 1
 July 7 – August 8
 April 7 – 11
 August 16
 August 17- 18
 August 18 – 22
 August 23 – 29
 August 25
 September 1
 August 27
 August 29
September 1
 September 19
 September 22
 September 26
 October 24
November 11
 N/A
November 27 – 28
 December 19
 December 8 – 12
 N/A
 December 12
 December 13
 December 23

April 19-August 15
 May 16
 N/A
 July 7 – August 8
 April 7 - 11
 N/A
 August 4 – 9
 N/A
 August 12 – 15
 August 25
 August 12
 N/A
 August 29
September 1
 September 19
 September 22
 September 26
 October 24
November 11
 November 26
November 27-28
 November 26
 December 2 – 12
 Nov. 29 – Dec. 1
 December 12
 N/A
 December 15

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information.

SPRING SEMESTER, 2009

Last Day to apply for admissions
 Special Student Application Due
 In-State Residency Classification Period
 Residence Halls Open January 2
 New Student Orientation January
 Regular Registration January 5
 Late Registration & Add/Drop Period
 Graduation Applications Due to Advisors
 1st Class Meeting January 6
 State Employee/Special Student Registration
 Last day to pay 100% of ALL Fees
 Holiday (Martin Luther King)
 25% Refund for withdrawal from Univ.
 Graduation applications due from Deans
 Last Day to Withdraw: Course/University
 SPRING BREAK
 Last Day for Instructors to submit "I" Change of grade
 Legislative Monday
 Last day of classes
 Reading Period
 Final Examinations
 Commencement
 Residence Halls Close (9:00 a. m.)
 Grades due by 12:00 p.m.

November 14, 2008
 December 5, 2008
 July 7 – August 8
 January 2
 January
 January 5
 January 6 - 9
 January 6
 January 5
 January 7
 January 9
 January 19
 January 30
 February 23
 March 27
 March 9 - 13
 April 17
 May 1, 2009
 April 24
 N/A
 April 27 – May 1
 May 3
 May 3
 May 4

November 14, 2008
 December 5, 2008
 July 7 – August 8
 N/A
 N/A
 N/A
 January 6 - 9
 January 6
 January 9
 January 7
 January 9
 January 19
 February 20
 February 23
 March 27
 March 9 – 13
 April 17
 May 1, 2009
 April 24
 N/A
 April 27 – May 1
 May 3 May 3
 May 3 N/A
 May 13 May 19

November 14, 2008
 N/A
 July 7 – August 8

 January 9 - 13
 January 9

 N/A
 January 13
 January 19
 February 6
 February 23
 March 31
 March 9 - 13
 April 17
 May 1, 2009
 May 1, 2009
 May 2 - 4
 May 5 - 15

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information.

SUMMER TERM, 2009

| | Term A | Term B | Term C | Term D Pharmacy Rotation/Clerkship "ONLY" | Term E (LAW) |
|-----------------------------------------------------|--------------------|-------------------|--------------------|----------------------------------------------------|-----------------|
| In-State Residency Classification Period | Mar. 23 – April 17 | May 12 – June 6 | Mar. 24 – April 18 | Mar. 24 – April 18 | N/A |
| Non-Degree Seeking Student Application Due | April 17 June 19 | April 18 April 18 | N/A | | |
| Early Web Registration | Mar. 23 - May 8 | Mar. 23 – July 2 | Mar. 23 - May 8 | Mar. 23- May 8 | N/A |
| Residence Halls Open | May 9 | June 26 | May 9 | May 9 | N/A |
| New Student Orientation | May 10 | June 27-28 | May 10 | May 10 | N/A |
| Regular Registration | May 7-8 | June 25-26 | May 7 - 10 | May 7 - 10 | May 14 - 15 |
| Late Registration | May 9-15 | June 27 – July 2 | May 11 - 14 | May 11 - 14 | May 16 - 21 |
| Graduation Applications Due to Advisors | May 11 | June 29 | May 11 | May 11 | May 18 |
| 1st Class Meeting | May 11 | June 29 | May 11 | May 11 | May 18 |
| State Employee/Non-Degree Seeking Registration | May 13 | July 1 | May 13 | May 13 | N/A |
| Last day to pay 100% of ALL fees | May 15 | July 6 | May 15 | May 16 | May 22 |
| Holiday (Memorial Day Observed) | | | | | |
| Classes Suspended | May 25 | May 25 | May 25 | May 25 | May 25 |
| Holiday (Independence Day) Classes Suspended | N/A | July 3 | July 3 | July 3 | July 3 |
| 25% Refund for withdrawal from Univ. | May 29 | July 17 | May 29 | May 29 | June 19 |
| Graduation applications due from Deans | June 1 | June 1 | June 1 | June 1 | June 1 |
| Last Day to Withdraw: Course/University | June 5 | July 24 | June 5 | June 5 | June 25 |
| Web Registration Fall '09' (By Appt. ONLY) | April 6 – April 10 | April 6– April 10 | April 6 – April 10 | April 6 – April 10 | N/A |
| Web Registration Fall '09' (Open Enrollment) | April 13 – Aug 28 | April 13 – Aug 28 | April 13 – Aug 28 | April 13 – Aug 28 | |
| Last Day for Instructors to submit "I" | | | | | |
| Change of grade | July 24 | July 24 | July 24 | July 24 | July 24 |
| Last day of classes | June 19 | August 7 | August 7 | August 21 | July 23 |
| Final Examinations | June 22-24 | August 6-7 | August 6-7 | August 6-7 | July 27 - 30 |
| Commencement @ 6:00 p.m. | August 7 | August 7 | August 7 | August 7 | August 7 |
| Residence Halls Close (9:00 a. m.) | N/A | August 8 | August 8 | August 8 | N/A |
| Grades due by 12:00 p.m. | June 26 | August 10 | August 10 | August 28 | August 21 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information on a regular basis.

FALL SEMESTER, 2009

| | | | |
|--------------------------------------------------------|-------------------------|-------------------------|-------------------------|
| Web Registration | April 20 - August 24 | April 20 - August 24 | April 20 - August 24 |
| Last Day to apply for admissions | May 15 | May 15 | May 15 |
| Non-Degree Seeking Student Application Due | July 31 | July 31 | N/A |
| In-State Residency Classification Period | July 6 - August 7 | July 6 - August 7 | July 6 - August 7 |
| Early Registration | April 6 - 10 | April 6 – 10 | April 6 - 10 |
| Residence Halls Open | August 15 | August 15 | N/A |
| New Student Orientation | August 16 - 17 | August 16 - 17 | August 3 - 8 |
| Regular Registration | August 17 - 21 | August 17 - 21 | N/A |
| Late Registration & Add/Drop Period | August 22 - 28 | August 22 – 28 | August 11 – 14 |
| Graduation Applications Due to Advisors | August 24 | August 24 | August 24 |
| 1st Class Meeting | August 24 | August 31 | August 11 |
| State Employee/Non-Degree Seeking Student Registration | August 26 | August 26 | N/A |
| Last day to pay 100% of ALL fees | August 28 | August 28 | August 28 |
| Holiday (Labor Day) Classes Suspended | September 7 | September 7 | September 7 |
| 25% Refund for withdrawal from University | September 18 | September 18 | September 18 |
| Graduation applications due from Deans | September 21 | September 21 | September 21 |
| Last Day to Withdraw: Course/University | September 25 | September 25 | September 25 |
| Last Day for Instructors to submit "I" Change of grade | October 23 | October 23 | October 23 |
| Holiday (Veterans Day) Classes Suspended | November 11 | November 11 | November 11 |
| Legislative Monday | N/A | N/A | November 25 |
| Holiday (Thanksgiving) Classes Suspended | November 26 – 27 | November 26 – 27 | November 26 - 27 |
| Last day of classes | December 4 | December 18 | November 25 |
| Final Examinations | December 7 – 11 | December 7 – 11 | December 1 – 11 |
| Reading Period | N/A | N/A | Nov. 29 – Dec. 1 |
| Commencement @ 6:00 p.m. | December 11 | December 11 | December 11 |
| Residence Halls Close (9 a.m.) | December 12 | December 12 | N/A |
| Grades due by noon | December 14 | December 22 | December 14 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information.

ACTIVITY GUIDE

OFFICIAL CALENDAR

PHARMACY
Rotation/Clerkship
"ONLY"

LAW SCHOOL

SPRING SEMESTER 2010

| | | | |
|--------------------------------------------------------|---------------------|---------------------|---------------------|
| Last Day to apply for admissions | November 13, 2009 | November 13, 2009 | November 13, 2009 |
| Special Student Application Due | December 4, 2009 | December 4, 2009 | N/A |
| In-State Residency Classification Period | July 6 – August 7 | July 6 – August 7 | July 6 – August 7 |
| Residence Halls Open | January 2 | January 2 | N/A |
| New Student Orientation | January 3 | January 3 | N/A |
| Regular Registration | January 4 | January 4 | N/A |
| Late Registration & Add/Drop Period | January 6 - 8 | January 6 - 8 | January 11 - 14 |
| Graduation Applications Due to Advisors | January 6 | January 6 | January 11 |
| 1st Class Meeting | January 6 | January 6 | January 11 |
| State Employee/Special Student Registration | January 8 | January 8 | N/A |
| Last day to pay 100% of ALL Fees | January 8 | January 8 | January 14 |
| Holiday (Martin Luther King) | January 18 | January 18 | January 18 |
| 25% Refund for withdrawal from University | January 29 | February 19 | February 5 |
| Graduation applications due from Deans | February 22 | February 22 | February 22 |
| Last Day to Withdraw: Course/University | March 26 | March 26 | March 30 |
| SPRING BREAK | March 8 - 12 | March 8 - 12 | March 8 - 12 |
| Last Day for Instructors to submit "I" Change of grade | April 16 | April 16 | April 16 |
| Legislative Monday | N/A | N/A | April 30, 2010 |
| Last day of classes | April 30 | April 30 | April 30, 2010 |
| Reading Period | N/A | N/A | May 3 - 5 |
| Final Examinations | May 3 – May 7 | May 3 – May 7 | May 6 - 16 |
| Commencement | May 7 | May 7 | May 7 |
| Residence Halls Close (9 a.m.) | May 8 | May 8 | N/A |
| Grades due by noon | May 10 | May 14 | May 20 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information.

SUMMER TERM, 2010

| | Term A | Term B | Term C | Term D Pharmacy Rotation/Clerkship "ONLY" | Term E (LAW) |
|-----------------------------------------------------|--------------------|-------------------|-------------------|----------------------------------------------------|-----------------|
| In-State Residency Classification Period | Mar. 22 – April 16 | May 10 – June 7 | Mar. 22– April 16 | Mar. 22– April 16 | N/A |
| Non-Degree Seeking Student Application Due | April 16 | June 18 | April 16 | April 16 | N/A |
| Early Web Registration | Mar. 21 - May 7 | Mar. 21 – July 2 | Mar. 21 - May 7 | Mar. 21- May 7 | N/A |
| Residence Halls Open | May 8 | June 26 | May 8 | May 9 | N/A |
| New Student Orientation | May 9 | June 26-27 | May 9 | May 9 | N/A |
| Regular Registration | May 6-7 | June 27-28 | May 6-7 | May 6-7 | May 13-14 |
| Late Registration | May 8-12 | June 27 – July 2 | May 8 - 14 | May 8 - 14 | May 15- 21 |
| Graduation Applications Due to Advisors | May 10 | June 28 | May 10 | May 10 | May 17 |
| 1st Class Meeting | May 10 | June 28 | May 10 | May 10 | May 17 |
| State Employee/Non-Degree Seeking Registration | May 12 | June 30 | May 12 | May 12 | N/A |
| Last day to pay 100% of ALL fees | May 14 | July 6 | May 14 | May 14 | May 21 |
| Holiday (Memorial Day Observed) | | | | | |
| Classes Suspended | May 31 | May 31 | May 31 | May 31 | May 31 |
| Holiday (Independence Day) Classes Suspended | N/A | July 5 | July 5 | July 5 | July 5 |
| 25% Refund for withdrawal from Univ. | May 28 | July 16 | May 28 | May 28 | June 18 |
| Graduation applications due from Deans | June 1 | June 1 | June 1 | June 1 | June 1 |
| Last Day to Withdraw: Course/University | June 4 | July 24 | June 4 | June 4 | June 26 |
| Web Registration Fall '10' (By Appt. ONLY) | April 5 – April 9 | April 5– April 9 | April 5 – April 9 | April 5 – April 9 | N/A |
| Web Registration Fall '10' (Open Enrollment) | April 12 – Aug 27 | April 12 – Aug 27 | April 12 – Aug 27 | April 12 – Aug 27 | |
| Last Day for Instructors to submit "I" | | | | | |
| Change of grade | July 23 | July 23 | July 23 | July 23 | July 23 |
| Last day of classes | June 18 | August 6 | August 6 | August 20 | July 23 |
| Final Examinations | June 21-23 | August 9-13 | August 9-13 | August 9-13 | July 26 - 29 |
| Commencement @ 6 p.m. | August 13 | August 13 | August 13 | August 13 | August 13 |
| Residence Halls Close (9 a.m.) | N/A | August 14 | August 14 | August 14 | N/A |
| Grades due by noon | June 25 | August 16 | August 16 | August 18 | August 18 |

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information on a regular basis.

ACTIVITY GUIDE**OFFICIAL CALENDAR****PHARMACY**
Rotation/Clerkship
"ONLY"**LAW SCHOOL****FALL SEMESTER, 2010**

Web Registration
 Last Day to apply for admissions
 Non-Degree Seeking Student Application Due
 In-State Residency Classification Period
 Early Registration
 Residence Halls Open
 New Student Orientation
 Regular Registration
 Late Registration & Add/Drop Period
 Graduation Applications Due to Advisors
 1st Class Meeting
 State Employee/Non-Degree Seeking Student Registration
 Last day to pay 100% of ALL fees
Holiday (Labor Day) Classes Suspended
 25% Refund for withdrawal from Univ.
 Graduation applications due from Deans
 Last Day to Withdraw: Course/University
 Last Day for Instructors to submit "I" Change of grade
Holiday (Veterans Day) Classes Suspended
 Legislative Monday
Holiday (Thanksgiving) Classes Suspended
 Last day of classes
 Final Examinations
 Reading Period
 Commencement @ 6 p.m.
 Residence Halls Close (9 a.m.)
 Grades due by noon

April 20 - August 24
 May 15
 July 31
 July 6 - August 7
 April 6 - 10
 August 15
 August 16 - 17
 August 17 - 21
 August 22 - 28
 August 24
 August 24
 August 26
 August 28
September 7
 September 18
 September 21
 September 25
 October 23
November 11
 N/A
November 26 - 27
 December 4
 December 7 - 11
 N/A
 December 11
 December 12
 December 14

April 20 - August 24
 May 15
 July 31
 July 6 - August 7
 April 6 - 10
 August 15
 August 16 - 17
 August 17 - 21
 August 22 - 28
 August 24
 August 31
 August 26
 August 28
September 7
 September 18
 September 21
 September 25
 October 23
November 11
 N/A
November 26 - 27
 December 18
 December 7 - 11
 N/A
 December 11
 December 12
 December 22

April 20 - August 24
 May 15
 N/A
 July 6 - August 7
 April 6 - 10
 N/A
 August 3 - 8
 N/A
 August 11 - 14
 August 24
 August 11
 N/A
 August 28
September 7
 September 18
 September 21
 September 25
 October 23
November 11
 November 25
November 26 - 27
 November 25
 December 1 - 11
 Nov. 29 - Dec. 1
 December 11
 N/A
 December 14

NOTE: Dates and times listed above are subject to change. Please refer to the Registrar's Office on-line website @ www.famu.edu for updated information.

Appendix B

Addendum for International Education and Development

International Student and Scholar Services

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 techni-

cal 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 (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 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.